UNIVERSIDADE DA CORUÑA

Escola Politécnica Superior

Trabajo Fin de Grado
CURSO 2020/2021

PETROLERO (TANQUE CRUDOS) 250000 TPM

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Grado en Ingeniería Naval y Oceánica

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1 TÍTULO Y RESUMEN

1.1 Castellano

El buque que se proyectará en este trabajo es uno para el transporte de un gran volumen de crudo, un petrolero de crudo VLCC, cuya característica principal es su capacidad de carga máxima de 275000 toneladas de peso muerto, según la RPA. En estos cuadernos se recoge el proceso completo de diseño, construcción y evaluación económica desarrollado para la obtención de dicho buque.

1.2 Galego

O buque que se proxecta neste traballo é un para o transporte dun gran volume de crudo, un petroleiro de crudo VLCC, cuxa característica principal é a súa capacidade de carga máxima, dada pola RPA, 275000 toneladas de peso morto. Nestes cadernos recóllese o proceso completo de diseño, construción e evaluación económica desenrolado para a obtención de dito buque.

1.3 English

The ship that will be projected in this work is one for the transport of a large volume of crude, a very large crude oil tanker (VLCC), whose main characteristic is its maximum load capacity of 275,000 deadweight tons, according to the PAR. These notebooks collect the complete process of design, construction and economic evaluation developed to obtain the mentioned ship.

Escola Politécnica Superior

TRABAJO FIN DE GRADO

CURSO 2020/2021

PETROLERO (TANQUE CRUDOS) 250000 TPM

Grado en Ingeniería Naval y Oceánica

Cuaderno 4:

COMPARTIMENTADO Y CÁLCULOS DE ARQUITECTURA NAVAL

Escola Politécnica Superior

UNIVERSIDADE DA CORUÑA

SIMULTANEIDAD DE GRADO EN INGENIERÍA NAVAL Y OCEÁNICA E INGENIERÍA MECÁNICA

TRABAJO FIN DE GRADO

CURSO 2020-2021

PROYECTO NÚMERO

TIPO DE BUQUE: Petrolero (tanque de crudos)

CLASIFICACIÓN, COTA Y REGLAMENTOS DE APLICACIÓN: DNV, SOLAS, MARPOL

CARACTERÍSTICAS DE LA CARGA: 275000 toneladas de peso muerto

VELOCIDAD Y AUTONOMÍA: 15.5 nudos en condiciones de servicio. 20000 millas a velocidad de servicio.

SISTEMAS Y EQUIPOS DE CARGA / DESCARGA: Bombas para carga y descarga de tanques.

PROPULSIÓN: Motor diésel acoplado a una hélice de paso fijo.

TRIPULACIÓN Y PASAJE: 36 personas distribuidas en camarotes individuales y dobles.

OTROS EQUIPOS E INSTALACIONES: Los habituales en este tipo de buques.

Ferrol, 04 de Octubre de 2020

ALUMNO/A: **Dª Minerva Rivas Cabanas**

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2 INTRODUCCIÓN

En este cuaderno se realizará la compartimentación del buque a proyectar, la disposición y la capacidad de los tanques. Además, con la ayuda del programa Maxsurf, se realizará el estudio de las curvas hidrostáticas, los brazos de adrizamiento (KN) y se hará una definición de la zona estanca del buque a tratar.

El compartimentado del buque a tratar se realiza en tres partes:

- Compartimentado longitudinal.
- Compartimentado transversal.
- Compartimentado vertical.

Para el estudio del buque proyecto, este será dividido en las siguientes zonas:

- Zona de proa.
- Zona de popa.
- Zona de carga.
- Zona de máquinas.

La disposición estará en cumplimiento de las normas impuestas por la IMO, que en el caso a tratar son el SOLAS, MARPOL y la sociedad de clasificación DNV.

Para poder desarrollar este cuaderno, se usan las dimensiones obtenidas de los cuadernos anteriores:

Lpp (m)	**302.9**
B (m)	**56.5**
D(m)	**29.40**
T(m)	**21.97**
Cb	**0.865**
Cm	**0.989**
Cp	**0.875**
Fn	**0.14**
Pot (kW)	**37680**
Δ (t)	**339242**
Peso en Rosca (t)	**43066.06**
TPM	**275000**

3 COMPARTIMENTADO LONGITUDINAL

En este apartado se realiza un a subdivisión del volumen interno del buque en el sentido de la eslora. Lo que se corresponde con los mamparos transversales estancos.

Por definición, el mamparo estanco se extiende desde el fondo del buque hasta la cubierta de francobordo de este. En el caso del buque desarrollado en este trabajo, coincide con la cubierta principal.

Los mamparos estancos de los que de dispondrá en el buque proyectado son:

- Mamparos transversales:
  - Mamparo de pique de proa.
  - Mamparo de popa de los tanques Slop.
  - Mamparo de los tanques de carga (6 mamparos).
  - Mamparo de pique de proa o mamparo de colisión.
- Además de estos, el buque tratado llevará un mamparo longitudinal situado en crujiía, este ayuda a la estabilidad en operaciones de carga e descarga.

El buque a tratar es un petrolero de crudo, por lo que dicho compartimentado será de vital importancia, porque tras definir los espacios necesarios para el funcionamiento del barco quedará definido el espacio dedicado a la estiba de carga.

3.1 Separación entre cuadernas

La posición longitudinal de los mamparos transversales estancos ha de coincidir con una cuaderna numérica, por lo que es necesario definir un espaciado de cuadernas.

Tomando como referencia al buque base y otros del mismo orden, se pueden ajustar unas medidas a nuestras dimensiones. Además, la separación de las cuadernas en las secciones de proa y popa será menor, por sufrir estas zonas unos esfuerzos mayores.

El DNV, a pesar de no imponer un valor concreto para la separación entre cuadernas, si establece unos valores máximos para el buque a tratar:

ZONA	MÍNIMO ESTIMADO (mm)
Cuerpo de Proa	470+(L/0.6)
Cámara de máquinas	700
Cuerpo central	510+(L/0.6)
Cuerpo de Popa	470+(L/0.6)

Para no exceder los máximos establecidos, y basando las decisiones en la teoría dada en la Asignatura de Proyectos del Buque y Artefactos Marinos I, se toman los siguientes espaciados:

- Zona 1: desde el espejo de popa hasta el mamparo de popa del cofferdam, el cual está situado a 32.9 m desde la perpendicular de popa. La separación de cuadernas desde el espejo de popa hasta la cuaderna 57 situada a 33.6 m de la perpendicular de popa es de 0.7m.
- Zona 2: desde el mamparo de popa de cofferdam hasta el mamparo de colisión. Desde la cuaderna 57 hasta la cuaderna 148 “mamparo de colisión” (a 266.3 m de la perpendicular de popa) la separación entre cuadernas es de 2.6 m. Desde esta cuaderna hasta el final de la proa del buque, la separación de cuadernas se vuelve a hacer de 0.7 m debido a la complejidad de sus formas en el cuerpo de entrada.

4 ZONA DE PROA

Esta zona se extiende a proa de la zona de carga y va hasta el final del buque por la parte de delante. Esta zona de proa se usa para:

- Desarrollar un espacio para la protección de la zona de carga.
- Albergar un tanque de lastre (pique de proa) necesario para corregir los trimados el buque desarrollado.
- En este espacio son colocados los equipos de amarre y fondeo.
- Debajo de la cubierta hay un espacio destinado al almacenaje de las herramientas de cubierta.

4.1 Mamparo de colisión

La zona de proa está limitada por un mamparo transversal estanco que se sitúa desde el fondo hasta la cubierta principal y se extiende de babor a estribor. El mamparo anteriormente mencionado se denomina mamparo de colisión y su posición viene regulada por el DNV parte 3, capítulo 2, sección 2.

$x_{c\text{-}min}$ = $0.05L_{LL} - x_f$ for $L_{LL} < 200$ m
= $10 - x_f$ for $L_{LL} \geq 200$ m
$x_{c\text{-}max}$ = $0.05L_{LL} + 3.0 - x_f$ for $L_{LL} < 100$ m
= $0.08L_{LL} - x_f$ for $L_{LL} \geq 100$ m

where:

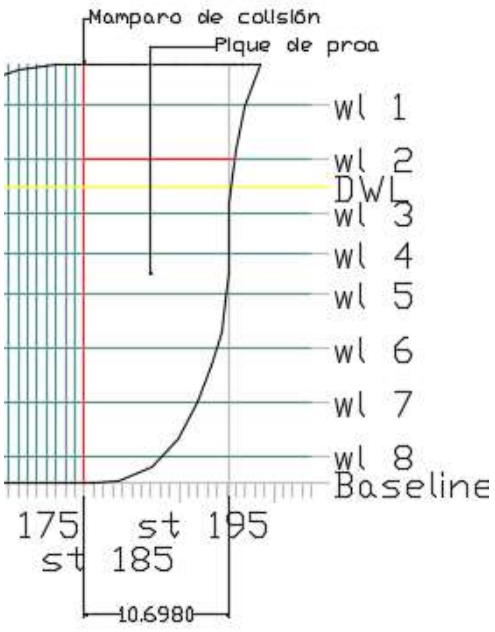
x_f = adjustment of reference point due to bulbus bow in m, as given in [4.1.2].

En el caso a tratar hay ausencia de bulbo, además la eslora entre perpendiculares del buque proyectado es de 308.9 m, cuyo valor se toma como L_{LL}. Por lo tanto:

- Distancia mínima: $5\%\ de\ 308.9\ m = 15.5\ m$ a popa de la perpendicular de proa ó 10 m (se escoge el menor).
- Distancia máxima: $8\%\ de\ 308.9\ m = 24.7\ m$ a popa de la perpendicular de proa.

De modo que, la distancia del pique de proa estará entre 10 metros mínimos y 24.7 m máximos.

Para concluir, en el buque proyectado, se decide situar a 292.2 m de la perpendicular de Popa, en la cuaderna 176. Esto se muestra en la imagen de a continuación:



5 ZONA DE POPA

El conocido como pique de popa está delimitado por el mamparo más a popa del buque. Dicho mamparo tendrá como función encerrar el local del servomotor y tanques de lastre dentro de un compartimento estanco.

Según el DNV, el mamparo del pique de popa es obligatorio, aunque este no impone unas nomas para su instalación y ubicación. Viene definido en el DNV parte 3 capítulo 2 sección 2.

En virtud de lo cual, teniendo en cuenta el espaciado entre cuadernas anteriormente definido y usando el buque base como referencia, se decide colocar dicho mamparo a 11.2 m a proa de la perpendicular de popa, en la cuaderna 16.

6 ZONA DE CARGA

La zona de carga es aquella destinada a albergar la carga transportada en el buque diseñado.

Durante el diseño, es considerado como parámetro crítico, el volumen útil de esta zona ya que es buque debe ser proyectado de acuerdo con las especificaciones impuestas durante las fases preliminares, en este caso de 275000 TPM.

El Convenio Marpol es el encargado de regular los parámetros y dimensiones que han de caracterizar a esta zona, además de las propias normas de la Sociedad de Clasificación, en este caso, DNV. Ambas regulaciones coinciden en los criterios fundamentales que regulan.

El mamparo de colisión se sitúa desde el mamparo de proa de la cámara de máquinas hasta el mamparo de colisión, además se debe disponer de doble casco y doble fondo a lo largo de toda su eslora.

6.1 Doble fondo

La altura del doble fondo es recogida en el convenio Marpol Anexo I Capítulo 3 Regla 12 A, además de en los apuntes de la asignatura de Proyectos del Buque y Artefactos Marinos I. La distancia mínima es la menor de:

$$h_{df} = \frac{B}{15} = 3.8\ m \text{ ó } 2\ m$$

Por lo tanto, se establece una altura mínima de doble fondo entre 2 y 3.8 m, en el caso a tratar de:

$$h_{df} = 2.5\ m$$

6.2 Doble casco

Al igual que el doble fondo, las distancias mínimas del doble casco están definidas en el Marpol anexo 1 capítulo 3 regla 12, como la distancia mínima entre:

$$w_{dc} = 0.5 + \frac{DWT}{20000} = 0.5 + \frac{275000}{20000} = 14.25\ m \text{ ó } 2\ m$$

En el caso a proyectar, al igual que el doble fondo, se coge una distancia de 2.5 m.

Los espacios libres entre las zonas de carga y el costado del buque y entre las zonas de carga y el fondo del buque, se aprovecharán como tanques de lastre. Como información adicional de importancia, el convenio Marpol marca que todos aquellos petroleros con un peso muerto superior a 20000 TPM, como el tratado en este trabajo, deben ir provistos de lastre separado, con una capacidad mínima tal que en todas las condiciones de lastre se cumpla que:

- Se permita al buque navegar en condiciones de lastre sin que sea necesario lastrar los tanques de carga.
- El lastre adicional del punto descrito en el apartado anterior, sólo se podrán emplear si los tanques de carga están debidamente lavados según la Regla 35 del Marpol.
- El calado de trazado de la cuaderna maestra nunca será inferior a:

$$T_m = 2 + (0.02 * L)$$

- Los calados de las perpendiculares de popa y proa se corresponderán con los determinados por el calado en el centro del buque (Tm), con un asiento a popa inferior a:

$$0.0155 * L$$

- El calado en popa debe garantizar siempre la total inmersión de la hélice.

6.3 Cofferdam

A proa de la cámara de bombas, se sitúa un cofferdam que la separe de la zona de carga.

Según las Socidades de Clasificación, este es obligatorio para buques de carga líquida como el tratado en este proyecto, y además el espaciado mínimo de esta zona es de 600 mm.

6.4 Tanques de carga

El convenio Marpol, anexo I, capítulo 4, regla 26, establece que la eslora máxima de los tanques de carga ha de ser:

$$L_{max} = \left(0.25 * \frac{bi}{B} + 0.15\right) * L$$

Donde,

- B es la manga de buque proyectado.
- bi es la distancia entre el costado del buque y el mamparo longitudinal exterior del tanque de carga, mediada de forma perpendicular a crujía. En el caso diseñado, coincide con la anchura del doble casco, 2.5 m.

Entonces,

$$L_{max} = 49.8\, m$$

La zona de la cántara estará ubicada a popa de los tanques slops. Además, siguiendo las pautas recomendadas, se dispone la zona de carga con dos mamparos longitudinales, de maneta que los tanques quedan agrupados de tres en tres; consiguiendo así una reducción de la influencia de las superficies libres sobre la estabilidad.

Por lo tanto, para la condición anteriormente descrita la eslora máxima de los tanques de carga queda definida como:

$$L_{max} = 0.2 * Lpp = 61.8\, m$$

Una disposición muy común a la hora de repartir los tanques de carga en buques similares es de 15 tanques dentro de la zona de carga. En el caso a proyectares, será usada la misma técnica, por tanto la eslora de los tanques será menor a la máxima permitida por el Marpol.

La longitud de los tanques será:

TANQUES		LONGITUD (m)
TANQUE 1	*Babor*	51.1
	Central	51.1
	Estribor	51.1
TANQUE 2	*Babor*	48.6
	Central	48.6
	Estribor	48.6
TANQUE 3	*Babor*	53.7
	Central	53.7

	Estribor	53.7
TANQUE 4	*Babor*	51
	Central	51
	Estribor	51
TANQUE 5	*Babor*	49
	Central	49
	Estribor	49

La zona de tanques de carga comienza en la cuaderna 50 y va hasta la cuaderna 176.

6.5 Tanques slops

Los tanques de decantación o slops, están situados a proa del cofferdam y a popa de los tanques definidos anteriormente como tanques de carga. Según el convenio Marpol, anexo I capítulo 4 regla 29, el volumen de carga de estos no puede ser inferior al 3% del volumen de carga, a exceptuar de cuándo:

- Existen tanques de lastre separado o tanques dedicados a lastre limpio, de acuerdo a la regla 18 del mismo anexo, el volumen de carga será de entre el 1% y 2%.
- Se ha instalado un sistema de limpieza de los tanques de carga mediante el lavabo con crudos conforme la regla 33, el volumen de carga será también de entre el 1 y 2%.

En el caso a tratar, se cumple las excepciones anteriores, por lo que, el volumen mínimo de estos tanques será del 2% del volumen de carga.

Los petroleros de crudo cuyo peso muerto sea igual o superior a 70000 TPM deben llevar, al menos, dos tanques slop.

Los tanques de decantación deben tener la capacidad suficiente como para retener los vertidos generados por el lavado de tanques, residuos de aceite y residuos sucios de lastre.

Para el dimensionamiento de estos tanques, es necesario definir los consumibles, tripulación y pertrechos. Según los requisitos previos de actividad, la tripulación estará compuesta de 36 personas, por lo que:

- Consumibles: formados por los víveres que consume la tripulación durante el completo desenvolvimiento de la actividad a bordo. Se consideran 5 kg por persona:

$$Consumibles = 5 * nº\ tripulación * \frac{Autonomía}{Vs * h}$$

  Siendo,
  - La autonomía de 20000 millas.
  - La velocidad de servicio de 15.5 nudos.

  Se obtiene,

$$Consumibles = 9.7\ toneladas$$

- Tripulación: al tratarse de un buque de transporte de mercancía y no de pasaje, se consideran 125 kg por cada tripulante. Po tanto:

$$Tripulación = 125 * nº\ de\ tripulantes = 4.5\ t$$

- Pertrechos: según el libro de “El proyecto básico del buque mercante” se debe de estimar un peso de entre 10 y 100 t. En este caso son consideradas 75 t.

- Respetos: estos contemplan toda la maquinaria de repuesto, hélice, amarras, estachas, entre otros. Se hace una aproximación de 110 t.

		Peso (t)
Consumibles	*Víveres*	9.7
Pesos fijos	*Tripulación*	4.5
	Pertrechos	75
	Respetos	110
TOTAL		199.2

Si el volumen de carga es:

$$V_{carga} = \frac{TPM - Consumos - 199.2}{\rho}$$

Donde,

- Se consideran los 275000 TPM de la RPA.
- Consumos obtenidos en el cuaderno I de combustibles, aceites, agua de refrigeración, agua dulce 9670.22 t.
- ρ es la densidad de la carga, el petróleo crudo presenta una densidad relativa de 0.86.

$$V_{carga} = \frac{275000 - 9670.22 - 199.2}{0.86} = 308291.37\ m^3$$

Consiguiendo mediante el desarrollo de este cuaderno un volumen de tanques de carga de $308249.057\ m^3$.

El volumen mínimo de los tanques de decantación será de:

$$V_{\min slop} = 0.015 * V_{carga} = 4624.4\ \ m^3$$

Como hay dos tanques slop, el volumen mínimo de cada uno de ellos es de:

$$V_{\min slop} = \frac{4624.4}{2} = 2312.2\ \ m^3$$

Por tanto, las dimensiones de dichos tanques quedan:

TANQUES SLOPS	
Puntal tanque (m)	25.6
Manga tanque (m)	25.75
Eslora tanque (m)	5.2 (cuaderna 56)

7 ZONA DE MÁQUINAS

En el buque a proyectar, y como es lo habitual en este tipo de buques, la cámara de máquinas es situada a popa.

En la zona de cámara de máquinas se sitúan tanques de almacenaje y de uso diario de Fuel-Oil, por ello su dimensionamiento y disposición estará regulado por el convenio Marpol 73/78.

La cámara de máquinas se sitúa justo a continuación del pique de popa, y su eslora se puede definir, según el libro de "El proyecto del buque mercante" como:

$$L_{CM} = 0.28 * Lpp^{0.670} + 0.48 * MCO(kW)^{0.350}$$

Se obtiene que,

$$L_{CM} = 30.5\ m$$

En el caso a tratar, y cumpliendo con los requisitos mínimos, se dispone de una zona de máquinas dividida en tres alturas de:

$$L_{CM} = 21.7\ m$$

Se hace coincidir sus mamparos de popa y proa con los esfuerzos transversales. La cámara de máquinas está situada entre la cuaderna 25 y la cuaderna 56.

Como se ha mencionado, en el interior de la cámara de máquinas se colocan dos plataformas, a parte del propio piso.

El piso estará situado a 2.5 m sobre la línea de base, altura del doble fondo.

La primera plataforma se colocará a unos 9 m de la línea de base y la segunda plataforma a unos 18 m de la línea de base.

8 CÁLCULOS DEL VOLUMEN Y CONSUMO DE LOS TANQUES

8.1 Tanques de lastre

Los tanques de lastre son llenados de agua de mar para así facilitar la navegación del buque cuando éste no satisface las condiciones de estabilidad y trimado debido o bien a la falta de carga o al haber gastado los consumos.

Como ya se ha mencionado con anterioridad, estos tanques se han de disponer en las zonas del buque de doble casco y doble fondo, siendo estos tanques simétricos y quedando divididos por crujía para disminuir las superficies libres.

El buque debe de disponer de suficiente lastre como para garantizar que la hélice quede totalmente sumergida, el calado mínimo ha de ser:

$$Tmin = Dhélice + 10\%Dhélice = 10.13 + 0.1 * 10.13 = 11.14\,m$$

Con esto se puede calcular el desplazamiento mínimo:

$$\Delta min = Cb * \rho * Lpp * B * Tmin$$

$$\Delta min = 0.82 * 1.025 * 308.9 * 56.5 * 11.14 = 163458\,t$$

El peso del agua de lastre será de:

$$Wlastre = \Delta min - Prosca$$

Donde,

- El peso en rosca se conoce del cuaderno II, en este caso de 47320 t.

Entonces,

$$Wlastre = 116138\,t$$

Por tanto, el volumen del agua de lastre es de,

$$V_{lastre} = \frac{Wlastre}{\rho} = \frac{116138}{1.025} = 113305.37\,m^3$$

El Marpol establece que:

- Todo buque petrolero de crudo cuyo peso muerto sea mayor de 20000 t, debe ir provisto de tanques de lastre separados.
- La capacidad de los tanques de lastre será aquella que permita operar al buque con unas ciertas condiciones de seguridad.

8.2 Tanques de consumo

8.2.1 Tanques de agua dulce

Siguiendo la norma ISO 15749 para buques de transporte de mercancía, se establece que el consumo por día es de 150 l/persona*día. Entonces:

$$Vagua\ dulce = \frac{150\frac{l}{día} * 36\ tripulantes * 20000\ millas}{15.5\ nudos * 24\ h * 1000l} = 290\,m^3$$

Se dispondrán de dos tanques de agua dulce, de forma que se cumpla ampliamente el consumo de agua dulce.

8.2.2 Tanques de agua técnica

El agua técnica es utilizada para reponer las posibles pérdidas producidas por derrames en el circuito de vapor. El valor total de esta producción es desconocido, por lo que se utiliza el buque de referencia para obtener una estimación.

Se observa que este tiene 2 tanques de agua técnica de unos 300 m^3 cada uno de ellos.

8.2.3 Tanques de Fuel Oil

8.2.3.1 Consumo motor principal

Estos tanques deben disponer de un volumen tal que sean capaces de abastecer el motor principal durante el período de autonomía dado por la RPA.

El consumo del motor principal escogido es de 158 g/kWh para una potencia de 28880.26 kW.

La densidad del combustible se toma como 0.94 t/m^3.

Teniendo en cuenta el consumo, autonomía, velocidad de servicio y potencia, se puede definir la cantidad de combustible necesario para cumplir con la RPA establecida:

$$Consumo = \frac{Cep * Pot * Autonomía}{Vs * 10^6} = 5887.85\ t$$

Si se divide este valor por la densidad el combustible, se obtiene el volumen de los tanques de fuel oil,

$$Vfuel\ oil = \frac{Consumo}{\rho fueloil} = 6263.7\ m^3$$

Este volumen debe de ir distribuido en distintos tanques como el tanque almacén, tanque de sedimentación y tanque de uso diario.

- Tanque de uso diario:
  Será suficiente para alimentar el motor principal durante 24h. Por lo que, su volumen es:
  $$Vfuel\ oil_{uso\ diario} = \frac{Cep * Pot * 24\ h}{10^6 * \rho} = 116.5\ m^3$$
  Se dispondrán de dos tanques de fuel oil de uso diario.

- Tanque de sedimentación:
  El fin de este tanque es separar por sedimentación las partículas del Fuel Oil más pesadas, dando como resultado una purificación de este, que tras haber pasado por este proceso se trasiega a los tanques de uso diario.
  Para la obtención de su volumen, se considera que debe cumplir con 36 h de funcionamiento del motor principal:
  $$Vfuel\ oil_{sedimentación} = \frac{Cep * Pot * 36\ h}{10^6 * \rho} = 174.8\ m^3$$
  Se colocan también dos tanques de sedimentación.

- Tanque almacén:
  Debe ser capaz de almacenar todo en fuel oil que no se encuentra en los tanques anteriores de uso diario y sedimentación, por lo tanto:
  $$Vfuel\ oil_{almacén} = Vfuel\ oil - Vfuel\ oil_{uso\ diario} - Vfuel\ oil_{sedimentación}$$
  $$Vfuel\ oil_{almacén} = 5972.4\ m^3$$
  Se colocan también dos tanques de fuel oil para almacén, uno a cada costado.

8.2.3.2 Consumo de motores auxiliares

Tomando como referencia el buque base "Hunter Atla", el buque llevará 3 diésel generadores auxiliares del modelo STX-MAN, de los que 2 funcionan normalmente al 85% para generar la potencia eléctrica requerida, mientras que el tercero de ellos será de respeto.

Según el catálogo de la misma empresa, donde se incluye este mismo tipo de motores, el consumo está marcado como 189 g/kWh.

Para obtener el volumen necesario de los tanques para cubrir las necesidades de estos motores y usando un 10% de la potencia del Motor principal:

$$V = \frac{Cep * 0.1 * Pot.* Autonomía}{Vs * \rho * 10^6} = 749.26\, m^3$$

$$V_{uso\ diario} = \frac{Cep * 0.1 * Pot.* 24}{\rho * 10^6} = 14.2\, m^3$$

$$V_{uso\ diario} = \frac{Cep * 0.1 * Pot.* 36}{\rho * 10^6} = 21.36\, m^3$$

8.2.3.3 Consumos calderas

Según el buque base, es necesaria una caldera para calentar la carga.

Auxiliary Boilers
Number: 2
Type/Make: ..... Vertical/Kangrim
Output, each boiler: .....45,000kg/h, 20bar g. saturated (working pressure)

Con un consumo de unas 3 t/h.

El total de estos consumos se almacenan en 2 tanques grandes para el almacén de Fuel Oil, 2 tanques de uso diario y un tanque de sedimentación.

8.2.4 Tanques Diesel Oil

Para la colocación de estos tanques, se usa el buque tomado como referencia. De él se deduce que dos tanques de Diesel Oil serán colocados en el buque a proyectar, cada uno de ellos de unos 250 m^3.

8.2.5 Tanques de aceite

Se puede hacer una estimación conforme a la cual el peso del aceite utilizado en la lubricación de motores es aproximadamente el 4% del peso del combustible de propulsión (Fuel Oil).

Por tanto:

$$Peso\ aceite = 0.04 * (5887.5 + 704.31) = 263.7\, t$$

La densidad del aceite es de 0.92 t/m^3. Por tanto, el volumen del aceite utilizado será de:

$$Volumen\ aceite = \frac{Peso\ aceite}{\rho} = \frac{263.7}{0.92} = 286.6\, m^3$$

Este volumen de aceite es el necesario para abastecer al motor principal, pero se colocará otro tanque de aceite, de reserva, de las mismas dimensiones que el anterior. Entonces,

$$Volumen\ aceite = 286.6 * 2 = 573.2\ m^3$$

8.2.6 Tanque de lodos

Siguiendo el convenio Marpol, es obligatorio para buques de más de 400 GT, disponer de tanques de lodos.

El volumen de este tanque se define como el 1.5% del combustible total del buque. Es decir:

$$V_{lodos} = 0.015 * (Vfuel\ oil + Vdiesel\ oil) = 101\ m^3$$

Este tanque se ha de colocar en el doble fondo de la cámara de máquinas y se supondrá una densidad de lodos de unos 1.5 t/m^3.

8.2.7 Tanque de agua grises y negras

Las aguas grises son todas aquellas que deben evacuarse a excepción de las aguas negras. Las aguas negras son aquellas procedentes de retretes, urinarios y bidés, incluyendo zonas médicas (enfermería, hospital, farmacia) y de lavabos y bañeras y descargas de agua de estas zonas. En el caso de incluir espacios donde habiten animales vivos, las descargas de agua de estas zonas también son consideradas aguas negras.

Para los cálculos de capacidad de agua negras y grises se sigue la norma UNE EN ISO 15749.

Tipo de buque	Cantidad mínima de agua de desecho por persona y día en litros			
	Planta sin vacío		Planta con vacío	
	Aguas negras	Aguas negras y grises	Aguas negras	Aguas negras y grises
Buques de pasaje	70	230	25	185
Buques de alta mar exceptuando los de pasaje	70	180	25	135
Los buques costeros pueden conservar los valores recomendados por las autoridades responsables.				
NOTA – Estos valores son los recomendados. Hay que considera las posibles variaciones debidas a los reglamentos nacionales o a las recomendaciones de las sociedades de clasificación.				

La cantidad mínima de agua de desecho por persona y día en litros correspondiente al buque tratado es de 180 l. Luego, el volumen total de aguas negras y grises es,

$$180 * 36\ tripulantes = 6480\ l = 6.5\ m^3 día$$

Considerando la autonomía del buque proyectado, la capacidad del tanque debe de ser de:

$$Vaguas\ residuales = 6.5 * \frac{20000}{15.5 * 24} = 349.5\ m^3$$

Para estas aguas se considera un volumen de 1.5 t/m^3, ya que estas serán aguas sucias generadas durante la navegación.

8.2.8 Tanque de derrame

Usando como base para el razonamiento el buque base de este proyecto, este tanque deberá de disponer de una capacidad de un valor superior a 40 m^3. Debido a la geometría

del buque y a la disposición de los demás espacios de este, se dispone de un volumen de 76 m^3 para el derrame.

La densidad utilizada para el producto de este tanque será la del petróleo crudo de 0.94 t/m^3, ya que el fluido que ocupará este lugar es el petróleo que vaya rebosando.

9 CAPACIDADES DE LOS TANQUES OBTENIDOS MEDIANTE MAXSURF STABILITY

Item Name	Specific gravity	Quantity	Unit Mass tonne	Total Mass tonne	Unit Volume m^3	Total Volume m^3	Long. Arm m	Trans. Arm m	Vert. Arm m	Total FSM tonne.m	FSM Type
Lightship		1	0,000	0,000			281,000	0,000	0,000	0,000	User Specified
Pique de Proa	Tank default (1,0250)	100%	5516,066	5516,066	5381,528	**5381,528**	296,282	0,000	14,284	27645,974	Maximum
Tanque Slop ES	Tank default (0,8600)	100%	2597,747	2597,747	3020,636	**3020,636**	36,207	12,258	15,076	6179,331	Maximum
Tanque Slop BR	Tank default (0,8600)	100%	2597,747	2597,747	3020,636	**3020,636**	36,207	-12,258	15,076	6179,331	Maximum
Tanque latre slop ES	Tank default (1,0250)	100%	368,621	368,621	359,630	**359,630**	35,929	14,536	8,260	3028,418	Maximum
Tanque latre slop BR	Tank default (1,0250)	100%	368,621	368,621	359,630	**359,630**	35,929	-14,536	8,260	3028,418	Maximum
Tanque latre 1 ES	Tank default (1,0250)	100%	5190,296	5190,296	5063,704	**5063,704**	66,484	18,476	9,233	52203,144	Maximum
Tanque latre 1 BR	Tank default (1,0250)	100%	5190,296	5190,296	5063,704	**5063,704**	66,484	-18,476	9,233	52203,144	Maximum
Tanque carga 1 ES	Tank default (0,8600)	100%	17838,894	17838,894	20742,900	**20742,900**	64,452	16,980	15,066	17573,230	Maximum
Tanque carga 1 BR	Tank default (0,8600)	100%	17838,467	17838,467	20742,403	**20742,403**	64,452	-16,980	15,066	17571,982	Maximum
Tanque carga 1 CTR	Tank default (0,8600)	100%	18484,490	18484,490	21493,592	**21493,592**	64,272	0,000	14,935	18851,396	Maximum
Tanque latre 2 ES	Tank default (1,0250)	100%	6368,785	6368,785	6213,449	**6213,449**	114,342	20,010	8,411	79681,828	Maximum
Tanque latre 2 BR	Tank default (1,0250)	100%	6368,785	6368,785	6213,449	**6213,449**	114,342	-20,010	8,411	79681,828	Maximum
Tanque carga 2 ES	Tank default (0,8600)	100%	17191,996	17191,996	19990,693	**19990,693**	114,082	17,067	14,947	16713,483	Maximum
Tanque carga 2 BR	Tank default (0,8600)	100%	17191,996	17191,996	19990,693	**19990,693**	114,082	-17,067	14,947	16713,483	Maximum
Tanque carga 2 CTR	Tank default (0,8600)	100%	17599,093	17599,093	20464,061	**20464,061**	114,082	0,000	14,947	17929,116	Maximum
Tanque latre 3 ES	Tank default (1,0250)	100%	7125,571	7125,571	6951,777	**6951,777**	165,312	20,093	8,299	91542,633	Maximum
Tanque latre 3 BR	Tank default (1,0250)	100%	7125,571	7125,571	6951,777	**6951,777**	165,312	-20,093	8,299	91542,633	Maximum
Tanque carga 3 ES	Tank default (0,8600)	100%	18928,459	18928,459	22009,836	**22009,836**	165,275	17,067	14,901	18467,367	Maximum
Tanque carga 3 BR	Tank default (0,8600)	100%	18928,459	18928,459	22009,836	**22009,836**	165,275	-17,067	14,901	18467,367	Maximum
Tanque carga 3 CTR	Tank default (0,8600)	100%	19376,226	19376,226	22530,495	**22530,495**	165,275	0,000	14,901	19809,191	Maximum
Tanque latre 4 ES	Tank default (1,0250)	100%	6632,594	6632,594	6470,823	**6470,823**	217,343	19,957	8,266	84377,904	Maximum
Tanque latre 4 BR	Tank default (1,0250)	100%	6632,594	6632,594	6470,823	**6470,823**	217,343	-19,957	8,266	84377,904	Maximum
Tanque carga 4 ES	Tank default (0,8600)	100%	17832,158	17832,158	20735,067	**20735,067**	217,544	17,067	14,801	17538,841	Maximum
Tanque carga 4 BR	Tank default (0,8600)	100%	17832,158	17832,158	20735,067	**20735,067**	217,544	-17,067	14,801	17538,841	Maximum
Tanque carga 4 CTR	Tank default (0,8600)	100%	18253,990	18253,990	21225,570	**21225,570**	217,544	0,000	14,801	18813,199	Maximum
Tanque latre 5 ES	Tank default (1,0250)	100%	3450,364	3450,364	3366,209	**3366,209**	258,371	18,331	8,474	41063,081	Maximum
Tanque latre 5 BR	Tank default (1,0250)	100%	3450,364	3450,364	3366,209	**3366,209**	258,371	-18,331	8,474	41063,081	Maximum
Tanque de lastre proa ES	Tank default (1,0250)	100%	1098,804	1098,804	1072,004	**1072,004**	284,303	15,281	11,660	6419,598	Maximum
Tanque de lastre proa BR	Tank default (1,0250)	100%	1098,804	1098,804	1072,004	**1072,004**	284,303	-15,281	11,660	6419,598	Maximum
Tanque carga 5 ES	Tank default (0,8600)	100%	15903,618	15903,618	18492,579	**18492,579**	266,158	16,515	15,195	14793,780	Maximum
Tanque carga 5 BR	Tank default (0,8600)	100%	15903,618	15903,618	18492,579	**18492,579**	266,158	-16,515	15,195	14793,780	Maximum
Tanque carga 5 CTR	Tank default (0,8600)	100%	17897,914	17897,914	20811,528	**20811,528**	267,968	0,000	15,062	18075,432	Maximum
Tanque de lastre ccmm ES	Tank default (1,0250)	100%	456,679	456,679	445,541	**445,541**	22,399	25,162	23,234	105,700	Maximum
Tanque de lastre ccmm BR	Tank default (1,0250)	100%	456,679	456,679	445,541	**445,541**	22,399	-25,162	23,234	105,700	Maximum
Tanque lastre popa ES	Tank default (1,0250)	100%	1405,710	1405,710	1371,425	**1371,425**	7,045	9,129	19,352	6860,479	Maximum
Tanque lastre popa BR	Tank default (1,0250)	100%	1405,710	1405,710	1371,425	**1371,425**	7,045	-9,129	19,352	6860,479	Maximum
Tanque de agua dulce ES	Tank default (1,0000)	100%	395,136	395,136	395,136	**395,136**	28,000	4,000	13,500	238,934	Maximum
Tanque de agua dulce BR	Tank default (1,0000)	100%	395,136	395,136	395,136	**395,136**	28,000	-4,000	13,500	238,934	Maximum
Tanque de agua técnica ES	Tank default (1,0000)	100%	395,136	395,136	395,136	**395,136**	28,000	12,000	13,500	238,934	Maximum
Tanque de agua técnica BR	Tank default (1,0000)	100%	395,136	395,136	395,136	**395,136**	28,000	-12,000	13,500	238,934	Maximum

Item Name	Specific gravity	Quantity	Unit Mass tonne	Total Mass tonne	Unit Volume m^3	Total Volume m^3	Long. Arm m	Trans. Arm m	Vert. Arm m	Total FSM tonne.m	FSM Type
Tanque almacén FO ES	Tank default (0,9400)	100%	1986,108	1986,108	2112,881	**2112,881**	23,800	11,000	21,500	11677,309	Maximum
Tanque almacén FO BR	Tank default (0,9400)	100%	1986,108	1986,108	2112,881	**2112,881**	23,800	-11,000	21,500	11677,309	Maximum
Tanque sedimentación FO ES	Tank default (0,9400)	100%	53,624	53,624	57,047	**57,047**	12,334	13,901	14,440	10,528	Maximum
Tanque sedimentación FO BR	Tank default (0,9400)	100%	53,624	53,624	57,047	**57,047**	12,334	-13,901	14,440	10,528	Maximum
Tanque uso diario Diesel ES	Tank default (0,9400)	100%	112,568	112,568	119,753	**119,753**	12,992	9,970	13,613	17,547	Maximum
Tanque uso diario Diésel BR	Tank default (0,9400)	100%	112,568	112,568	119,753	**119,753**	12,992	-9,970	13,613	17,547	Maximum
Tanque de uso diario FO ES	Tank default (0,9400)	100%	69,643	69,643	74,088	**74,088**	12,250	6,000	13,500	10,528	Maximum
Tanque de uso diario FO BR	Tank default (0,9400)	100%	69,643	69,643	74,088	**74,088**	12,250	-6,000	13,500	10,528	Maximum
Tanque de aceite ES	Tank default (0,9200)	100%	265,070	265,070	288,120	**288,120**	12,950	10,000	21,500	463,680	Maximum
Tanque de aceite BR	Tank default (0,9200)	100%	265,070	265,070	288,120	**288,120**	12,950	-10,000	21,500	463,680	Maximum
Tanque de lodos	Tank default (1,5000)	100%	523,279	523,279	348,853	**348,853**	16,244	0,000	1,387	11453,384	Maximum
Tanque derrames	Tank default (0,9400)	100%	122,199	122,199	129,999	**129,999**	20,664	0,000	1,367	4254,771	Maximum
Tanque aguas grises y negras	Tank default (1,5000)	100%	792,516	792,516	528,344	**528,344**	25,631	0,000	1,364	35190,020	Maximum
Total Loadcase				349900,510	392410,338	392410,338	159,285	0,000	13,932	1110433,788	
FS correction									3,174		
VCG fluid									17,105		

10 HIDROSTÁTICAS

Los asientos escogidos para estos cálculo son los que responden al 1.5% de la eslora del buque a proyectar, tanto sus valores positivos como negativos. Es decir, se comprueban los asientos de popa y proa comprendidos entre 0 y + y – 4.6.

10.1 Fixed Trim = 0 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

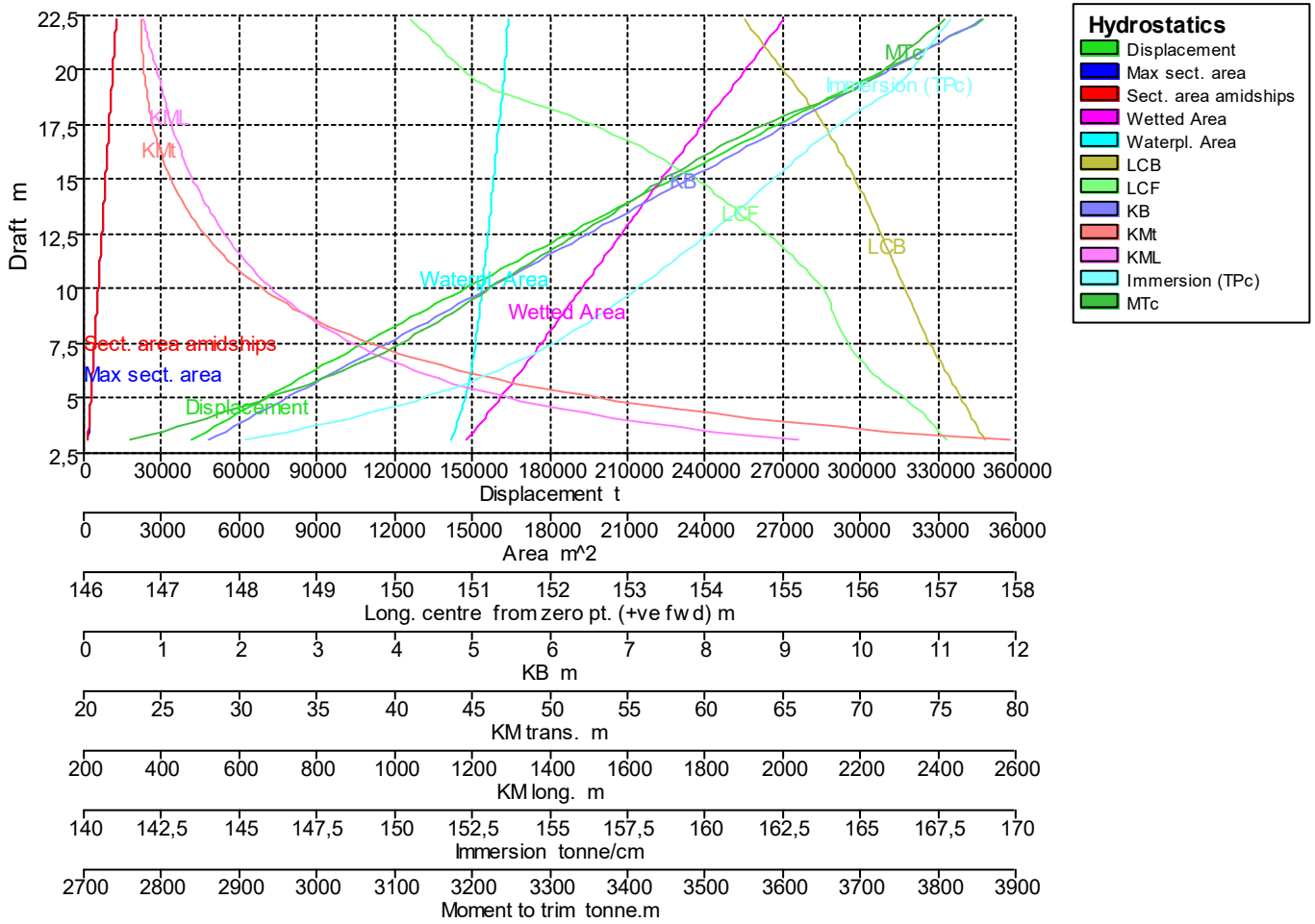
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	41380	3,100	0,000	290,601	55,567	14799,793	14164,301	0,806	157,605	0,000	157,104	1,613	77,970	2039,654	79,583	2041,267	145,184	2758,698
3,300	44290	3,300	0,000	290,737	55,703	14938,401	14233,432	0,809	157,571	0,000	157,055	1,717	73,702	1921,202	75,419	1922,919	145,893	2779,711
3,500	47215	3,500	0,000	290,887	55,839	15077,497	14302,191	0,810	157,537	0,000	157,012	1,822	69,933	1816,863	71,754	1818,684	146,597	2800,809
3,700	50154	3,700	0,000	291,053	55,975	15215,153	14369,077	0,812	157,505	0,000	156,960	1,926	66,579	1723,651	68,505	1725,577	147,283	2820,976
3,900	53107	3,900	0,000	291,219	56,112	15351,880	14434,453	0,813	157,473	0,000	156,911	2,030	63,574	1639,943	65,604	1641,973	147,953	2840,460
4,100	56072	4,100	0,000	291,385	56,237	15484,362	14496,236	0,814	157,442	0,000	156,867	2,134	60,836	1564,231	62,971	1566,365	148,586	2859,109
4,300	59050	4,300	0,000	291,551	56,316	15616,857	14550,398	0,816	157,412	0,000	156,810	2,238	58,269	1495,367	60,508	1497,606	149,142	2876,876
4,500	62038	4,500	0,000	291,717	56,395	15746,981	14601,679	0,818	157,381	0,000	156,728	2,343	55,935	1432,029	58,277	1434,371	149,667	2892,950
4,700	65037	4,700	0,000	291,883	56,474	15879,916	14655,409	0,819	157,350	0,000	156,675	2,447	53,803	1375,175	56,250	1377,621	150,218	2910,946
4,900	68046	4,900	0,000	292,050	56,502	16010,371	14700,423	0,821	157,318	0,000	156,610	2,551	51,769	1322,474	54,320	1325,024	150,679	2927,473
5,100	71064	5,100	0,000	292,453	56,518	16139,588	14741,357	0,822	157,287	0,000	156,548	2,655	49,861	1273,791	52,516	1276,446	151,099	2943,334
5,300	74090	5,300	0,000	293,012	56,526	16269,279	14781,610	0,823	157,255	0,000	156,475	2,759	48,091	1229,073	50,850	1231,831	151,512	2959,541
5,500	77124	5,500	0,000	293,571	56,526	16399,340	14820,713	0,824	157,223	0,000	156,394	2,863	46,442	1187,800	49,304	1190,663	151,912	2975,921
5,700	80167	5,700	0,000	294,130	56,526	16529,256	14858,750	0,825	157,190	0,000	156,314	2,966	44,904	1149,464	47,870	1152,430	152,302	2992,119
5,900	83216	5,900	0,000	294,425	56,526	16658,431	14894,841	0,827	157,156	0,000	156,241	3,070	43,462	1113,578	46,532	1116,648	152,672	3007,644
6,100	86273	6,100	0,000	294,507	56,526	16784,714	14926,798	0,829	157,123	0,000	156,160	3,174	42,107	1079,337	45,281	1082,511	153,000	3020,894
6,300	89337	6,300	0,000	294,585	56,526	16912,427	14959,353	0,831	157,089	0,000	156,111	3,278	40,837	1047,614	44,115	1050,892	153,333	3034,900
6,500	92406	6,500	0,000	294,663	56,526	17039,580	14990,757	0,833	157,055	0,000	156,065	3,382	39,645	1017,727	43,026	1021,109	153,655	3048,331

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,700	95483	6,700	0,000	294,741	56,526	17166,542	15021,463	0,835	157,023	0,000	156,022	3,485	38,524	989,604	42,010	993,089	153,970	3061,484
6,900	98565	6,900	0,000	294,819	56,526	17292,591	15050,602	0,836	156,991	0,000	155,976	3,589	37,468	962,916	41,057	966,505	154,269	3073,806
7,100	101653	7,100	0,000	294,897	56,526	17418,421	15079,027	0,838	156,959	0,000	155,930	3,693	36,470	937,708	40,163	941,400	154,560	3085,865
7,300	104747	7,300	0,000	294,963	56,526	17544,013	15106,668	0,840	156,928	0,000	155,884	3,796	35,526	913,856	39,323	917,652	154,843	3097,666
7,500	107847	7,500	0,000	294,803	56,526	17669,561	15132,724	0,842	156,897	0,000	155,848	3,900	34,630	891,108	38,529	895,008	155,110	3108,703
7,700	110952	7,700	0,000	294,643	56,526	17794,594	15156,631	0,844	156,868	0,000	155,823	4,003	33,772	869,330	37,775	873,334	155,355	3118,806
7,900	114061	7,900	0,000	294,483	56,526	17917,165	15176,928	0,846	156,839	0,000	155,777	4,107	32,956	848,094	37,063	852,201	155,564	3126,627
8,100	117175	8,100	0,000	294,324	56,526	18041,864	15199,425	0,848	156,810	0,000	155,754	4,210	32,181	828,393	36,391	832,603	155,794	3136,162
8,300	120293	8,300	0,000	294,164	56,526	18166,071	15221,764	0,850	156,783	0,000	155,730	4,314	31,442	809,698	35,756	814,012	156,023	3145,787
8,500	123415	8,500	0,000	294,004	56,526	18290,133	15243,739	0,852	156,756	0,000	155,704	4,417	30,739	791,875	35,156	796,293	156,248	3155,254
8,700	126543	8,700	0,000	293,903	56,526	18414,207	15265,376	0,854	156,729	0,000	155,679	4,520	30,068	774,881	34,588	779,402	156,470	3164,639
8,900	129674	8,900	0,000	293,822	56,526	18538,020	15286,978	0,856	156,704	0,000	155,653	4,624	29,427	758,698	34,051	763,322	156,692	3174,118
9,100	132810	9,100	0,000	293,741	56,526	18662,112	15307,990	0,858	156,679	0,000	155,633	4,727	28,814	743,191	33,541	747,918	156,907	3183,342
9,300	135951	9,300	0,000	293,660	56,526	18785,738	15327,761	0,859	156,654	0,000	155,612	4,831	28,226	728,214	33,056	733,045	157,110	3191,853
9,500	139095	9,500	0,000	293,579	56,526	18909,076	15347,056	0,861	156,631	0,000	155,591	4,934	27,662	713,860	32,596	718,794	157,307	3200,231
9,700	142243	9,700	0,000	293,498	56,526	19031,672	15366,082	0,862	156,607	0,000	155,565	5,037	27,118	700,158	32,155	705,195	157,502	3208,803
9,900	145395	9,900	0,000	293,417	56,526	19154,172	15384,524	0,864	156,585	0,000	155,540	5,140	26,594	686,998	31,735	692,138	157,691	3217,233
10,100	148551	10,100	0,000	293,336	56,526	19275,845	15401,385	0,865	156,562	0,000	155,490	5,244	26,092	674,157	31,336	679,401	157,864	3224,587
10,300	151710	10,300	0,000	293,339	56,526	19398,282	15419,679	0,867	156,539	0,000	155,450	5,347	25,609	662,061	30,956	667,408	158,052	3233,095
10,500	154873	10,500	0,000	293,392	56,526	19520,809	15438,569	0,868	156,516	0,000	155,400	5,450	25,143	650,562	30,593	656,012	158,245	3242,235

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,700	158040	10,700	0,000	293,446	56,526	19643,271	15457,208	0,869	156,493	0,000	155,349	5,553	24,694	639,495	30,247	645,048	158,436	3251,328
10,900	161210	10,900	0,000	293,499	56,526	19766,203	15476,223	0,870	156,470	0,000	155,293	5,656	24,261	628,915	29,917	634,571	158,631	3260,798
11,100	164385	11,100	0,000	293,553	56,526	19889,431	15495,266	0,871	156,447	0,000	155,233	5,760	23,843	618,752	29,603	624,511	158,826	3270,415
11,300	167563	11,300	0,000	293,589	56,526	20012,572	15513,994	0,872	156,424	0,000	155,176	5,863	23,440	608,934	29,303	614,797	159,018	3279,911
11,500	170746	11,500	0,000	293,619	56,526	20135,361	15532,090	0,873	156,400	0,000	155,121	5,966	23,050	599,405	29,016	605,371	159,204	3289,068
11,700	173932	11,700	0,000	293,650	56,526	20258,249	15550,014	0,874	156,376	0,000	155,066	6,069	22,673	590,208	28,742	596,277	159,388	3298,220
11,900	177121	11,900	0,000	293,680	56,526	20381,179	15567,727	0,875	156,352	0,000	155,010	6,172	22,308	581,319	28,481	587,491	159,569	3307,327
12,100	180315	12,100	0,000	293,710	56,526	20504,573	15585,620	0,876	156,328	0,000	154,949	6,276	21,955	572,769	28,231	579,045	159,753	3316,672
12,300	183512	12,300	0,000	293,741	56,526	20628,552	15603,793	0,877	156,303	0,000	154,881	6,379	21,614	564,552	27,993	570,930	159,939	3326,317
12,500	186712	12,500	0,000	293,952	56,526	20752,902	15622,096	0,877	156,278	0,000	154,808	6,482	21,283	556,631	27,765	563,113	160,126	3336,148
12,700	189917	12,700	0,000	294,183	56,526	20877,097	15640,004	0,877	156,253	0,000	154,736	6,585	20,963	548,930	27,548	555,515	160,310	3345,767
12,900	193125	12,900	0,000	294,414	56,526	21001,648	15657,994	0,878	156,227	0,000	154,658	6,689	20,653	541,491	27,341	548,180	160,494	3355,515
13,100	196337	13,100	0,000	294,646	56,526	21126,613	15676,187	0,878	156,201	0,000	154,575	6,792	20,352	534,314	27,144	541,106	160,681	3365,467
13,300	199553	13,300	0,000	294,877	56,526	21251,354	15693,981	0,878	156,174	0,000	154,493	6,895	20,061	527,318	26,956	534,213	160,863	3375,181
13,500	202772	13,500	0,000	295,101	56,526	21374,125	15709,469	0,878	156,147	0,000	154,429	6,998	19,777	520,297	26,776	527,295	161,022	3383,317
13,700	205994	13,700	0,000	295,314	56,526	21494,902	15722,698	0,879	156,120	0,000	154,376	7,102	19,499	513,274	26,601	520,375	161,158	3390,016
13,900	209219	13,900	0,000	295,527	56,526	21619,473	15738,847	0,879	156,093	0,000	154,299	7,205	19,230	506,789	26,434	513,994	161,323	3399,009
14,100	212447	14,100	0,000	295,739	56,526	21743,557	15754,123	0,879	156,065	0,000	154,229	7,308	18,966	500,420	26,274	507,728	161,480	3407,504
14,300	215678	14,300	0,000	295,952	56,526	21871,581	15773,021	0,880	156,037	0,000	154,123	7,411	18,708	494,623	26,119	502,034	161,673	3418,791
14,500	218913	14,500	0,000	296,164	56,526	21992,504	15784,466	0,880	156,008	0,000	154,083	7,515	18,456	488,253	25,970	495,768	161,791	3424,777

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,700	222150	14,700	0,000	296,377	56,526	22113,420	15795,669	0,880	155,980	0,000	154,042	7,618	18,210	482,048	25,828	489,666	161,906	3430,667
14,900	225390	14,900	0,000	296,589	56,526	22241,254	15813,924	0,880	155,951	0,000	153,934	7,721	17,972	476,709	25,693	484,431	162,093	3441,749
15,100	228634	15,100	0,000	296,802	56,526	22366,152	15828,691	0,880	155,922	0,000	153,856	7,824	17,741	471,179	25,566	479,003	162,244	3450,307
15,300	231880	15,300	0,000	297,168	56,526	22496,033	15848,014	0,880	155,892	0,000	153,732	7,928	17,517	466,233	25,445	474,160	162,442	3462,229
15,500	235131	15,500	0,000	297,721	56,526	22620,927	15862,844	0,879	155,862	0,000	153,648	8,031	17,298	460,997	25,329	469,028	162,594	3470,919
15,700	238384	15,700	0,000	298,269	56,526	22746,442	15877,889	0,879	155,831	0,000	153,561	8,134	17,085	455,924	25,219	464,059	162,748	3479,840
15,900	241641	15,900	0,000	298,813	56,526	22872,651	15893,359	0,878	155,799	0,000	153,469	8,238	16,877	451,026	25,114	459,264	162,907	3489,128
16,100	244901	16,100	0,000	299,357	56,526	22999,082	15908,838	0,877	155,768	0,000	153,374	8,341	16,673	446,257	25,014	454,598	163,066	3498,471
16,300	248164	16,300	0,000	299,901	56,526	23126,372	15925,009	0,876	155,736	0,000	153,272	8,444	16,475	441,672	24,919	450,117	163,231	3508,369
16,500	251430	16,500	0,000	300,445	56,526	23253,470	15940,796	0,875	155,703	0,000	153,172	8,548	16,281	437,171	24,829	445,719	163,393	3518,041
16,700	254699	16,700	0,000	300,989	56,526	23382,219	15958,075	0,875	155,670	0,000	153,057	8,651	16,093	432,912	24,744	441,563	163,570	3528,843
16,900	257973	16,900	0,000	301,533	56,526	23511,782	15976,084	0,874	155,636	0,000	152,934	8,754	15,909	428,820	24,664	437,574	163,755	3540,223
17,100	261250	17,100	0,000	302,077	56,526	23641,239	15993,621	0,873	155,601	0,000	152,814	8,858	15,729	424,801	24,587	433,659	163,935	3551,426
17,300	264530	17,300	0,000	302,621	56,526	23771,678	16011,653	0,872	155,566	0,000	152,688	8,961	15,551	420,937	24,513	429,898	164,119	3563,177
17,500	267815	17,500	0,000	303,165	56,526	23902,809	16029,869	0,871	155,530	0,000	152,558	9,065	15,377	417,194	24,442	426,259	164,306	3575,237
17,700	271103	17,700	0,000	303,708	56,526	24035,475	16049,522	0,870	155,493	0,000	152,415	9,168	15,207	413,658	24,375	422,826	164,508	3588,410
17,900	274395	17,900	0,000	304,248	56,526	24169,977	16070,868	0,870	155,455	0,000	152,256	9,272	15,042	410,340	24,314	419,612	164,726	3602,873
18,100	277692	18,100	0,000	304,787	56,526	24303,126	16090,656	0,869	155,416	0,000	152,110	9,376	14,879	406,982	24,255	416,358	164,929	3616,325
18,300	280993	18,300	0,000	305,327	56,526	24437,418	16111,479	0,868	155,377	0,000	151,953	9,479	14,720	403,783	24,200	413,263	165,143	3630,599
18,500	284298	18,500	0,000	305,867	56,526	24572,992	16133,554	0,867	155,336	0,000	151,784	9,583	14,566	400,753	24,149	410,336	165,369	3645,837

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,700	287608	18,700	0,000	306,407	56,526	24710,986	16157,941	0,866	155,294	0,000	151,594	9,687	14,418	397,963	24,105	407,650	165,619	3662,779
18,900	290923	18,900	0,000	306,946	56,526	24846,175	16179,263	0,866	155,251	0,000	151,432	9,791	14,271	395,005	24,061	404,795	165,837	3677,575
19,100	294242	19,100	0,000	307,486	56,526	24980,755	16199,713	0,865	155,207	0,000	151,277	9,894	14,127	392,042	24,021	401,936	166,047	3691,756
19,300	297565	19,300	0,000	308,026	56,526	25110,948	16215,393	0,864	155,163	0,000	151,166	9,998	13,983	388,784	23,981	398,782	166,208	3702,460
19,500	300891	19,500	0,000	308,566	56,526	25241,570	16231,003	0,863	155,118	0,000	151,056	10,102	13,844	385,576	23,946	395,678	166,368	3713,011
19,700	304219	19,700	0,000	308,975	56,526	25368,492	16242,195	0,863	155,073	0,000	150,987	10,206	13,706	382,097	23,912	392,303	166,483	3720,184
19,900	307550	19,900	0,000	308,976	56,526	25496,119	16253,738	0,863	155,029	0,000	150,915	10,310	13,572	378,708	23,882	389,018	166,601	3727,567
20,100	310883	20,100	0,000	308,977	56,526	25622,413	16263,689	0,864	154,984	0,000	150,858	10,414	13,440	375,277	23,854	385,691	166,703	3733,819
20,300	314219	20,300	0,000	308,978	56,526	25749,529	16274,403	0,865	154,940	0,000	150,795	10,518	13,311	371,971	23,829	382,489	166,813	3740,654
20,500	317556	20,500	0,000	308,980	56,526	25875,774	16284,008	0,865	154,896	0,000	150,742	10,622	13,184	368,654	23,806	379,276	166,911	3746,706
20,700	320895	20,700	0,000	308,984	56,526	26002,729	16294,338	0,866	154,853	0,000	150,684	10,726	13,060	365,458	23,786	376,183	167,017	3753,341
20,900	324237	20,900	0,000	308,993	56,526	26129,539	16304,401	0,867	154,810	0,000	150,629	10,829	12,939	362,306	23,768	373,136	167,120	3759,802
21,100	327581	21,100	0,000	309,002	56,526	26256,577	16314,784	0,867	154,767	0,000	150,571	10,933	12,820	359,239	23,753	370,172	167,227	3766,521
21,300	330927	21,300	0,000	309,011	56,526	26383,851	16325,378	0,868	154,724	0,000	150,511	11,037	12,704	356,245	23,741	367,282	167,335	3773,421
21,500	334275	21,500	0,000	309,020	56,526	26511,001	16335,772	0,868	154,682	0,000	150,453	11,141	12,590	353,296	23,731	364,437	167,442	3780,198
21,700	337625	21,700	0,000	309,038	56,526	26638,380	16346,492	0,869	154,640	0,000	150,392	11,245	12,478	350,427	23,723	361,671	167,552	3787,254
21,900	340977	21,900	0,000	309,061	56,526	26765,491	16356,856	0,869	154,598	0,000	150,335	11,348	12,368	347,587	23,717	358,935	167,658	3794,060
22,100	344332	22,100	0,000	309,083	56,526	26893,013	16367,784	0,870	154,556	0,000	150,272	11,452	12,261	344,839	23,713	356,291	167,770	3801,322
22,300	347688	22,300	0,000	309,106	56,526	27020,490	16378,575	0,871	154,514	0,000	150,209	11,556	12,156	342,133	23,712	353,689	167,880	3808,511


Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
Sect. area amidships
Max sect. area
Displacement
Waterpl. Area
Wetted Area
KB
LCF
LCB
MTc
Immersion (TPc)
0 30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000
Area m^2
146 147 148 149 150 151 152 153 154 155 156 157 158
Long. centre from zero pt. (+ve fwd) m
0 1 2 3 4 5 6 7 8 9 10 11 12
KB m
20 25 30 35 40 45 50 55 60 65 70 75 80
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600
KM long. m
140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5 170
Immersion tonne/cm
2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900
Moment to trim tonne.m
Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc

10.2 Fixed Trim = 1,15 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

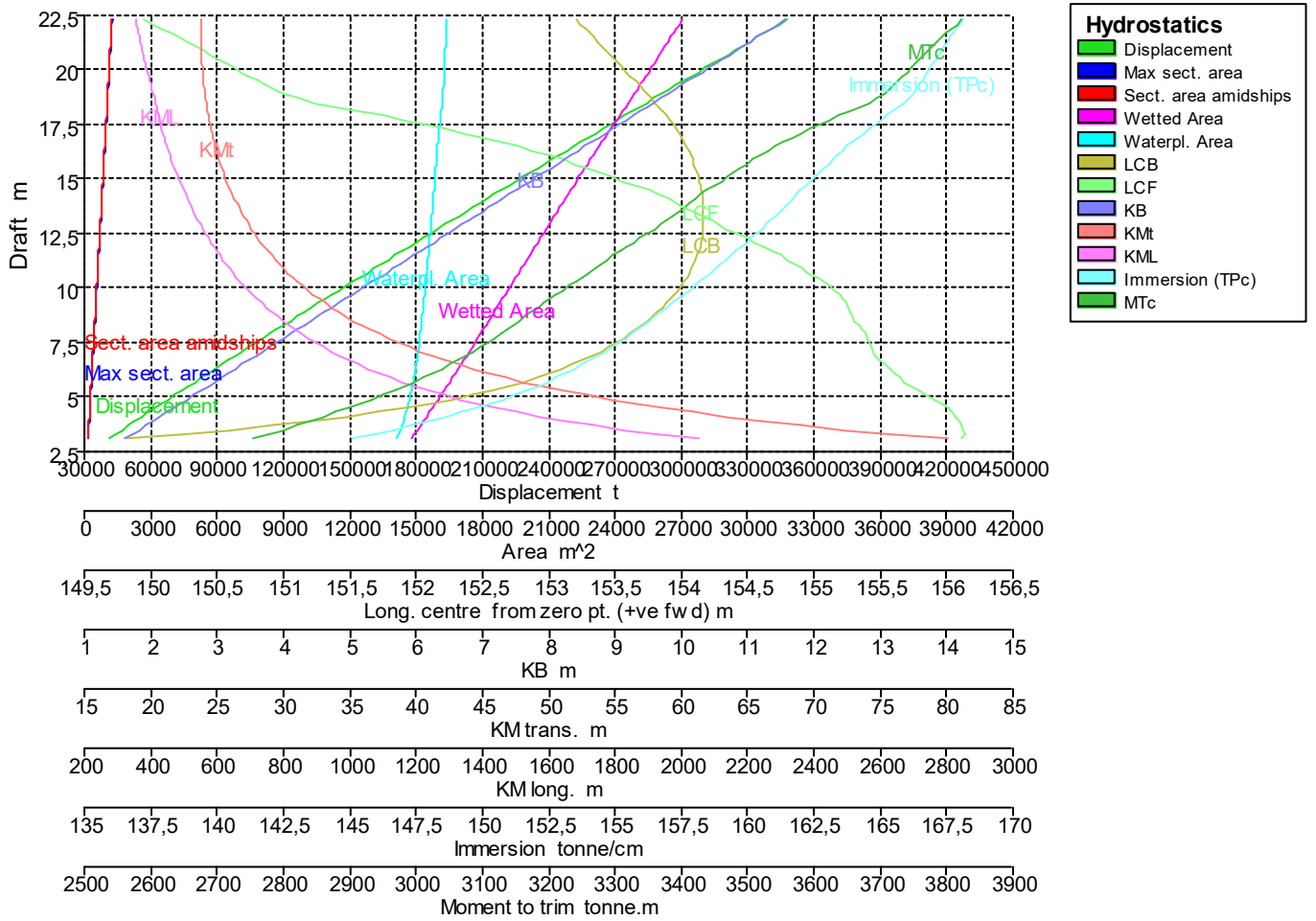
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	41095	3,082	1,150	290,210	55,651	14789,377	14156,743	0,802	149,819	0,000	156,116	1,618	78,431	2050,555	80,048	2052,158	145,107	2754,501
3,300	44005	3,282	1,150	290,484	55,786	14932,336	14233,702	0,804	150,236	0,000	156,133	1,721	74,223	1932,172	75,943	1933,879	145,895	2777,734
3,500	46930	3,482	1,150	290,723	55,922	15069,563	14304,230	0,806	150,603	0,000	156,131	1,825	70,430	1826,858	72,255	1828,670	146,618	2799,379
3,700	49870	3,682	1,150	290,921	56,057	15207,584	14371,976	0,808	150,929	0,000	156,115	1,928	67,035	1732,845	68,963	1734,761	147,313	2820,103
3,900	52823	3,882	1,150	291,106	56,193	15343,725	14437,257	0,809	151,218	0,000	156,092	2,032	63,982	1648,378	66,014	1650,398	147,982	2839,975
4,100	55789	4,082	1,150	291,272	56,283	15479,680	14499,982	0,810	151,477	0,000	156,073	2,136	61,205	1572,396	63,340	1574,520	148,625	2859,695
4,300	58767	4,283	1,150	291,438	56,362	15613,826	14558,256	0,812	151,709	0,000	156,045	2,239	58,651	1503,340	60,890	1505,568	149,222	2878,596
4,500	61758	4,483	1,150	291,732	56,441	15746,963	14613,477	0,814	151,918	0,000	156,007	2,343	56,302	1440,404	58,645	1442,737	149,788	2896,959
4,700	64759	4,683	1,150	292,290	56,495	15879,333	14665,733	0,814	152,107	0,000	155,965	2,447	54,127	1382,842	56,574	1385,279	150,324	2914,902
4,900	67770	4,883	1,150	292,849	56,511	16010,851	14713,102	0,815	152,278	0,000	155,914	2,551	52,082	1330,032	54,632	1332,573	150,809	2932,529
5,100	70791	5,083	1,150	293,407	56,526	16140,762	14756,401	0,817	152,431	0,000	155,843	2,655	50,168	1281,220	52,822	1283,866	151,253	2949,407
5,300	73821	5,284	1,150	293,824	56,526	16272,166	14798,728	0,818	152,570	0,000	155,786	2,758	48,384	1236,484	51,142	1239,234	151,687	2966,850
5,500	76858	5,484	1,150	293,928	56,526	16401,794	14837,004	0,821	152,696	0,000	155,729	2,862	46,712	1194,543	49,574	1197,396	152,079	2982,776
5,700	79904	5,684	1,150	294,036	56,526	16530,342	14872,578	0,823	152,811	0,000	155,681	2,966	45,147	1155,284	48,113	1158,242	152,444	2997,671
5,900	82956	5,884	1,150	294,144	56,526	16657,888	14905,941	0,825	152,916	0,000	155,643	3,070	43,682	1118,478	46,752	1121,540	152,786	3011,666
6,100	86015	6,084	1,150	294,251	56,526	16785,017	14938,307	0,827	153,012	0,000	155,606	3,173	42,315	1084,034	45,488	1087,200	153,118	3025,208
6,300	89081	6,284	1,150	294,359	56,526	16911,899	14969,942	0,829	153,101	0,000	155,571	3,277	41,035	1051,773	44,312	1055,042	153,442	3038,456
6,500	92153	6,484	1,150	294,448	56,526	17038,413	15000,634	0,831	153,183	0,000	155,536	3,380	39,834	1021,453	43,215	1024,826	153,756	3051,315
6,700	95231	6,685	1,150	294,527	56,526	17162,898	15029,284	0,833	153,258	0,000	155,488	3,484	38,706	992,643	42,189	996,119	154,050	3062,982

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	98315	6,885	1,150	294,414	56,526	17289,626	15058,741	0,835	153,328	0,000	155,461	3,588	37,642	965,835	41,229	969,415	154,352	3075,500
7,100	101405	7,085	1,150	294,255	56,526	17416,044	15086,170	0,838	153,392	0,000	155,442	3,691	36,634	940,288	40,325	943,973	154,633	3086,980
7,300	104500	7,285	1,150	294,096	56,526	17542,090	15111,968	0,840	153,453	0,000	155,430	3,795	35,676	916,032	39,470	919,820	154,898	3097,881
7,500	107601	7,485	1,150	293,937	56,526	17667,418	15136,028	0,842	153,510	0,000	155,418	3,898	34,764	892,903	38,662	896,795	155,144	3108,000
7,700	110706	7,685	1,150	293,778	56,526	17792,051	15159,913	0,845	153,563	0,000	155,401	4,001	33,900	871,055	37,901	875,050	155,389	3118,223
7,900	113816	7,885	1,150	293,619	56,526	17916,470	15183,216	0,847	153,613	0,000	155,384	4,105	33,079	850,290	37,184	854,389	155,628	3128,190
8,100	116931	8,085	1,150	293,498	56,526	18040,952	15206,200	0,849	153,660	0,000	155,366	4,208	32,299	830,568	36,507	834,771	155,864	3138,071
8,300	120051	8,285	1,150	293,437	56,526	18164,948	15228,904	0,851	153,704	0,000	155,346	4,312	31,557	811,827	35,868	816,133	156,096	3147,925
8,500	123175	8,485	1,150	293,377	56,526	18286,633	15248,727	0,853	153,745	0,000	155,307	4,415	30,850	793,523	35,265	797,932	156,299	3155,827
8,700	126303	8,685	1,150	293,316	56,526	18410,561	15269,921	0,854	153,784	0,000	155,291	4,518	30,175	776,379	34,693	780,891	156,517	3164,915
8,900	129435	8,885	1,150	293,256	56,526	18534,421	15290,635	0,856	153,820	0,000	155,278	4,621	29,530	759,980	34,151	764,596	156,729	3173,778
9,100	132572	9,086	1,150	293,195	56,526	18657,476	15311,458	0,858	153,854	0,000	155,257	4,725	28,913	744,394	33,638	749,114	156,942	3182,926
9,300	135713	9,286	1,150	293,127	56,526	18780,454	15331,968	0,859	153,887	0,000	155,238	4,828	28,322	729,501	33,150	734,323	157,153	3192,071
9,500	138858	9,486	1,150	293,046	56,526	18903,622	15352,001	0,861	153,917	0,000	155,219	4,931	27,752	715,278	32,683	720,204	157,358	3201,320
9,700	142008	9,686	1,150	293,010	56,526	19027,031	15372,205	0,862	153,946	0,000	155,197	5,034	27,206	701,713	32,240	706,742	157,565	3210,810
9,900	145161	9,886	1,150	293,064	56,526	19150,146	15392,823	0,864	153,973	0,000	155,159	5,138	26,681	688,803	31,819	693,935	157,776	3220,735
10,100	148319	10,086	1,150	293,117	56,526	19273,183	15413,165	0,865	153,998	0,000	155,119	5,241	26,176	676,424	31,416	681,660	157,985	3230,688
10,300	151481	10,286	1,150	293,171	56,526	19396,421	15433,512	0,866	154,021	0,000	155,075	5,344	25,689	664,565	31,033	669,904	158,193	3240,769
10,500	154647	10,486	1,150	293,224	56,526	19520,078	15454,022	0,867	154,042	0,000	155,026	5,447	25,221	653,221	30,668	658,664	158,404	3251,115
10,700	157816	10,687	1,150	293,278	56,526	19642,480	15472,409	0,868	154,061	0,000	154,960	5,551	24,769	642,040	30,319	647,586	158,592	3260,037

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	160990	10,887	1,150	293,331	56,526	19765,486	15491,501	0,869	154,078	0,000	154,908	5,654	24,334	631,401	29,987	637,051	158,788	3269,603
11,100	164168	11,087	1,150	293,385	56,526	19888,332	15510,117	0,870	154,094	0,000	154,856	5,757	23,913	621,117	29,670	626,869	158,979	3278,957
11,300	167349	11,287	1,150	293,438	56,526	20011,286	15528,628	0,871	154,108	0,000	154,804	5,860	23,508	611,209	29,368	617,065	159,168	3288,334
11,500	170535	11,487	1,150	293,492	56,526	20134,390	15546,995	0,872	154,120	0,000	154,750	5,963	23,116	601,659	29,079	607,618	159,357	3297,737
11,700	173724	11,688	1,150	293,546	56,526	20258,456	15566,115	0,873	154,131	0,000	154,688	6,067	22,737	592,553	28,804	598,615	159,553	3307,770
11,900	176917	11,888	1,150	293,701	56,526	20382,804	15585,340	0,874	154,141	0,000	154,623	6,170	22,372	583,786	28,542	589,951	159,750	3317,962
12,100	180114	12,088	1,150	293,933	56,526	20507,090	15604,277	0,874	154,149	0,000	154,558	6,273	22,018	575,293	28,292	581,562	159,944	3328,035
12,300	183315	12,288	1,150	294,165	56,526	20631,637	15623,246	0,874	154,155	0,000	154,491	6,377	21,677	567,098	28,053	573,471	160,138	3338,209
12,500	186519	12,489	1,150	294,397	56,526	20756,760	15642,537	0,875	154,161	0,000	154,417	6,480	21,346	559,220	27,826	565,696	160,336	3348,691
12,700	189728	12,689	1,150	294,629	56,526	20882,235	15661,996	0,875	154,164	0,000	154,340	6,583	21,027	551,622	27,610	558,201	160,535	3359,354
12,900	192941	12,889	1,150	294,861	56,526	21005,829	15679,186	0,875	154,167	0,000	154,279	6,686	20,716	544,022	27,402	550,705	160,712	3368,489
13,100	196157	13,089	1,150	295,093	56,526	21127,782	15694,413	0,876	154,168	0,000	154,233	6,790	20,413	536,454	27,202	543,240	160,868	3376,294
13,300	199376	13,290	1,150	295,325	56,526	21252,200	15711,505	0,876	154,169	0,000	154,165	6,893	20,119	529,350	27,012	536,240	161,043	3385,621
13,500	202599	13,490	1,150	295,557	56,526	21375,583	15726,834	0,876	154,169	0,000	154,108	6,996	19,831	522,303	26,827	529,295	161,200	3393,897
13,700	205825	13,690	1,150	295,789	56,526	21504,098	15746,955	0,877	154,167	0,000	154,004	7,100	19,550	515,997	26,650	523,093	161,406	3405,794
13,900	209055	13,890	1,150	296,021	56,526	21626,652	15760,632	0,877	154,164	0,000	153,955	7,203	19,275	509,223	26,478	516,422	161,546	3413,198
14,100	212287	14,091	1,150	296,243	56,526	21747,712	15772,527	0,877	154,161	0,000	153,919	7,307	19,008	502,476	26,314	509,779	161,668	3419,412
14,300	215522	14,291	1,150	296,457	56,526	21874,544	15790,625	0,877	154,157	0,000	153,817	7,410	18,748	496,566	26,157	503,973	161,854	3430,212
14,500	218761	14,491	1,150	296,670	56,526	21998,606	15805,168	0,878	154,151	0,000	153,753	7,513	18,496	490,466	26,009	497,976	162,003	3438,445
14,700	222003	14,692	1,150	296,957	56,526	22125,948	15822,894	0,878	154,145	0,000	153,658	7,617	18,252	484,859	25,868	492,472	162,185	3449,060

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	225248	14,892	1,150	297,516	56,526	22254,160	15841,344	0,877	154,137	0,000	153,555	7,720	18,015	479,475	25,735	487,191	162,374	3460,217
15,100	228498	15,092	1,150	298,075	56,526	22379,679	15857,017	0,876	154,128	0,000	153,475	7,824	17,784	473,977	25,607	481,797	162,534	3469,436
15,300	231750	15,293	1,150	298,634	56,526	22506,043	15873,243	0,875	154,118	0,000	153,386	7,927	17,558	468,686	25,485	476,610	162,701	3479,126
15,500	235005	15,493	1,150	299,193	56,526	22632,107	15888,961	0,875	154,107	0,000	153,301	8,030	17,338	463,491	25,369	471,518	162,862	3488,496
15,700	238264	15,693	1,150	299,752	56,526	22759,814	15906,076	0,874	154,096	0,000	153,200	8,134	17,124	458,565	25,258	466,695	163,037	3498,937
15,900	241527	15,894	1,150	300,311	56,526	22886,709	15922,123	0,873	154,083	0,000	153,106	8,237	16,915	453,672	25,152	461,906	163,202	3508,658
16,100	244793	16,094	1,150	300,870	56,526	23014,491	15938,882	0,872	154,069	0,000	153,004	8,341	16,710	448,974	25,051	457,311	163,374	3518,962
16,300	248062	16,295	1,150	301,423	56,526	23144,963	15958,207	0,871	154,054	0,000	152,877	8,444	16,513	444,619	24,958	453,061	163,572	3531,152
16,500	251335	16,495	1,150	301,972	56,526	23274,197	15976,171	0,871	154,038	0,000	152,760	8,548	16,319	440,261	24,867	448,805	163,756	3542,437
16,700	254612	16,695	1,150	302,522	56,526	23404,644	15994,941	0,870	154,021	0,000	152,634	8,651	16,129	436,093	24,781	444,741	163,948	3554,459
16,900	257893	16,896	1,150	303,071	56,526	23535,781	16013,702	0,869	154,002	0,000	152,506	8,755	15,942	432,050	24,697	440,802	164,140	3566,723
17,100	261178	17,097	1,150	303,621	56,526	23668,207	16033,378	0,868	153,983	0,000	152,367	8,859	15,759	428,193	24,618	437,049	164,342	3579,792
17,300	264467	17,297	1,150	304,170	56,526	23802,956	16055,250	0,867	153,962	0,000	152,207	8,962	15,583	424,612	24,545	433,572	164,566	3594,511
17,500	267761	17,498	1,150	304,720	56,526	23936,094	16075,262	0,867	153,939	0,000	152,062	9,066	15,407	420,973	24,473	430,036	164,771	3608,017
17,700	271058	17,698	1,150	305,269	56,526	24070,313	16096,215	0,866	153,916	0,000	151,908	9,170	15,236	417,499	24,406	426,666	164,986	3622,291
17,900	274360	17,899	1,150	305,819	56,526	24205,366	16117,983	0,865	153,891	0,000	151,746	9,274	15,070	414,172	24,344	423,442	165,209	3637,219
18,100	277667	18,100	1,150	306,368	56,526	24342,907	16142,175	0,864	153,864	0,000	151,561	9,378	14,911	411,109	24,288	420,483	165,457	3653,931
18,300	280979	18,300	1,150	306,916	56,526	24479,820	16165,471	0,863	153,836	0,000	151,385	9,482	14,754	408,045	24,236	417,524	165,696	3670,057
18,500	284295	18,501	1,150	307,462	56,526	24614,788	16186,580	0,863	153,806	0,000	151,228	9,586	14,600	404,880	24,185	414,462	165,912	3684,634
18,700	287615	18,701	1,150	308,007	56,526	24745,161	16202,670	0,862	153,776	0,000	151,115	9,690	14,446	401,394	24,136	411,081	166,077	3695,557

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	290938	18,902	1,150	308,552	56,526	24875,948	16218,650	0,861	153,745	0,000	151,004	9,794	14,297	397,963	24,091	407,754	166,241	3706,296
19,100	294264	19,102	1,150	308,971	56,526	25002,637	16229,772	0,861	153,714	0,000	150,937	9,898	14,150	394,222	24,048	404,117	166,355	3713,333
19,300	297592	19,302	1,150	308,971	56,526	25130,487	16241,710	0,861	153,682	0,000	150,863	10,002	14,007	390,615	24,009	400,614	166,478	3720,917
19,500	300923	19,502	1,150	308,972	56,526	25256,618	16251,635	0,862	153,651	0,000	150,806	10,106	13,866	386,936	23,972	397,039	166,579	3727,044
19,700	304256	19,703	1,150	308,973	56,526	25383,501	16262,197	0,863	153,619	0,000	150,744	10,210	13,728	383,383	23,938	393,590	166,688	3733,673
19,900	307591	19,903	1,150	308,974	56,526	25509,901	16272,038	0,863	153,588	0,000	150,689	10,314	13,593	379,851	23,907	390,163	166,788	3739,794
20,100	310928	20,103	1,150	308,975	56,526	25636,462	16282,031	0,864	153,557	0,000	150,631	10,418	13,461	376,406	23,879	386,821	166,891	3746,062
20,300	314267	20,303	1,150	308,976	56,526	25763,338	16292,190	0,865	153,525	0,000	150,571	10,522	13,332	373,046	23,854	383,565	166,995	3752,507
20,500	317608	20,504	1,150	308,977	56,526	25890,037	16302,176	0,865	153,494	0,000	150,513	10,626	13,205	369,742	23,831	380,366	167,097	3758,849
20,700	320951	20,704	1,150	308,979	56,526	26017,251	16312,768	0,866	153,463	0,000	150,451	10,730	13,081	366,548	23,811	377,275	167,206	3765,668
20,900	324296	20,904	1,150	308,980	56,526	26144,153	16322,925	0,867	153,431	0,000	150,393	10,834	12,960	363,387	23,794	374,218	167,310	3772,185
21,100	327644	21,104	1,150	308,981	56,526	26271,404	16333,575	0,867	153,400	0,000	150,331	10,938	12,841	360,323	23,779	371,258	167,419	3779,103
21,300	330993	21,304	1,150	308,986	56,526	26398,466	16343,908	0,868	153,369	0,000	150,273	11,042	12,724	357,297	23,766	368,336	167,525	3785,806
21,500	334345	21,505	1,150	308,995	56,526	26525,967	16354,835	0,869	153,337	0,000	150,210	11,146	12,611	354,369	23,756	365,513	167,637	3792,973
21,700	337699	21,705	1,150	309,005	56,526	26653,429	16365,695	0,869	153,306	0,000	150,148	11,249	12,499	351,494	23,748	362,741	167,748	3800,121
21,900	341055	21,905	1,150	309,014	56,526	26781,400	16377,033	0,870	153,275	0,000	150,082	11,353	12,390	348,705	23,743	360,055	167,865	3807,650
22,100	344414	22,105	1,150	309,023	56,526	26909,566	16388,700	0,870	153,244	0,000	150,013	11,457	12,282	345,990	23,740	357,445	167,984	3815,461
22,300	347775	22,306	1,150	309,042	56,526	27038,770	16400,337	0,871	153,212	0,000	149,944	11,561	12,177	343,325	23,738	354,883	168,103	3823,283


Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
KB
LCF
LCB
MTc
Immersion (TPc)
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000 390000 420000 450000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000 39000 42000
Area m^2
149,5 150 150,5 151 151,5 152 152,5 153 153,5 154 154,5 155 155,5 156 156,5
Long. centre from zero pt. (+ve fwd) m
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
KB m
15 20 25 30 35 40 45 50 55 60 65 70 75 80 85
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000
KM long. m
135 137,5 140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5 170
Immersion tonne/cm
2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900
Moment to trim tonne.m

Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc

10.3 Fixed Trim = 2,3 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

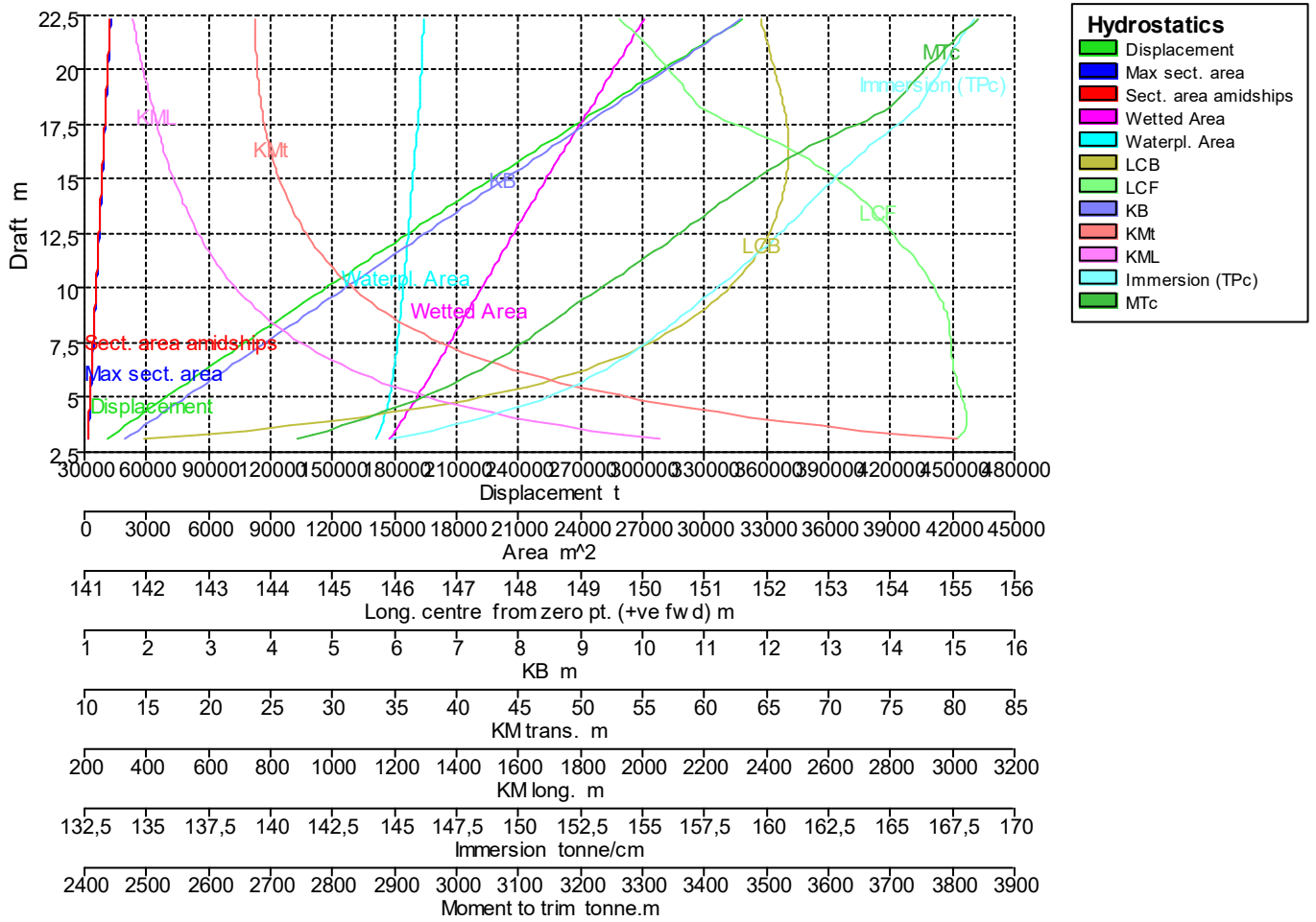
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	40866	3,072	2,300	289,803	55,737	14768,409	14136,278	0,799	141,969	0,000	155,072	1,654	78,682	2054,416	80,334	2056,011	144,897	2744,329
3,300	43772	3,272	2,300	290,077	55,872	14914,938	14218,772	0,801	142,842	0,000	155,147	1,755	74,496	1936,706	76,249	1938,405	145,742	2769,569
3,500	46695	3,472	2,300	290,350	56,008	15056,722	14295,108	0,803	143,614	0,000	155,193	1,856	70,747	1831,828	72,601	1833,631	146,525	2792,985
3,700	49633	3,671	2,300	290,624	56,143	15197,235	14367,089	0,804	144,301	0,000	155,223	1,958	67,367	1738,220	69,322	1740,127	147,263	2815,499
3,900	52585	3,871	2,300	290,917	56,252	15335,461	14434,346	0,806	144,914	0,000	155,236	2,059	64,296	1653,870	66,353	1655,882	147,952	2836,715
4,100	55551	4,071	2,300	291,540	56,331	15472,476	14498,289	0,806	145,466	0,000	155,239	2,161	61,499	1577,743	63,658	1579,859	148,607	2857,279
4,300	58530	4,271	2,300	292,130	56,409	15609,008	14560,150	0,807	145,963	0,000	155,225	2,264	58,943	1509,020	61,205	1511,240	149,242	2877,895
4,500	61521	4,471	2,300	292,706	56,487	15743,601	14618,338	0,808	146,413	0,000	155,210	2,366	56,578	1446,515	58,942	1448,839	149,838	2898,218
4,700	64523	4,672	2,300	293,236	56,504	15877,802	14671,965	0,809	146,822	0,000	155,188	2,469	54,376	1389,190	56,843	1391,619	150,388	2917,768
4,900	67536	4,872	2,300	293,339	56,521	16010,577	14721,535	0,811	147,195	0,000	155,164	2,572	52,328	1336,269	54,898	1338,802	150,896	2936,251
5,100	70558	5,072	2,300	293,442	56,526	16141,829	14766,750	0,814	147,536	0,000	155,144	2,674	50,416	1287,149	53,088	1289,787	151,359	2953,491
5,300	73590	5,272	2,300	293,546	56,526	16271,621	14807,135	0,816	147,849	0,000	155,124	2,777	48,617	1241,370	51,392	1244,111	151,773	2969,417
5,500	76629	5,472	2,300	293,649	56,526	16399,996	14843,555	0,819	148,138	0,000	155,105	2,880	46,926	1198,620	49,804	1201,466	152,146	2984,173
5,700	79676	5,672	2,300	293,752	56,526	16526,772	14878,091	0,821	148,404	0,000	155,086	2,983	45,347	1158,814	48,329	1161,764	152,500	2998,381
5,900	82729	5,873	2,300	293,855	56,526	16654,695	14912,034	0,824	148,650	0,000	155,070	3,086	43,875	1121,840	46,959	1124,894	152,848	3012,589
6,100	85789	6,073	2,300	293,959	56,526	16781,617	14944,358	0,826	148,879	0,000	155,047	3,189	42,499	1087,109	45,687	1090,267	153,180	3025,955
6,300	88856	6,273	2,300	293,933	56,526	16908,484	14975,887	0,828	149,091	0,000	155,025	3,292	41,212	1054,590	44,503	1057,851	153,503	3039,038
6,500	91929	6,473	2,300	293,805	56,526	17035,351	15005,825	0,831	149,290	0,000	155,008	3,395	40,004	1023,889	43,398	1027,255	153,810	3051,286
6,700	95009	6,673	2,300	293,676	56,526	17161,977	15034,414	0,833	149,475	0,000	154,997	3,498	38,866	994,928	42,363	998,398	154,103	3062,977

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	98093	6,873	2,300	293,545	56,526	17288,330	15061,504	0,836	149,649	0,000	154,991	3,601	37,788	967,573	41,388	971,146	154,380	3074,179
7,100	101184	7,073	2,300	293,397	56,526	17413,848	15087,508	0,838	149,812	0,000	154,985	3,704	36,766	941,769	40,469	945,446	154,647	3085,181
7,300	104279	7,273	2,300	293,239	56,526	17537,124	15111,904	0,841	149,966	0,000	154,973	3,807	35,797	917,205	39,603	920,986	154,897	3095,354
7,500	107380	7,473	2,300	293,092	56,526	17662,573	15137,217	0,843	150,110	0,000	154,970	3,910	34,882	894,242	38,791	898,126	155,156	3106,349
7,700	110485	7,673	2,300	293,032	56,526	17787,547	15161,835	0,845	150,247	0,000	154,965	4,013	34,013	872,439	38,025	876,427	155,409	3117,041
7,900	113596	7,873	2,300	292,972	56,526	17912,368	15185,915	0,847	150,376	0,000	154,959	4,116	33,190	851,722	37,305	855,813	155,656	3127,491
8,100	116711	8,073	2,300	292,912	56,526	18036,765	15208,809	0,849	150,498	0,000	154,950	4,219	32,407	831,899	36,625	836,094	155,890	3137,286
8,300	119831	8,273	2,300	292,851	56,526	18160,980	15230,845	0,851	150,614	0,000	154,944	4,322	31,661	812,960	35,982	817,258	156,116	3146,640
8,500	122956	8,474	2,300	292,791	56,526	18284,637	15252,953	0,853	150,724	0,000	154,933	4,425	30,951	794,993	35,374	799,395	156,343	3156,177
8,700	126085	8,674	2,300	292,731	56,526	18407,905	15274,873	0,854	150,829	0,000	154,919	4,528	30,272	777,898	34,799	782,404	156,567	3165,772
8,900	129219	8,874	2,300	292,671	56,526	18531,194	15296,572	0,856	150,928	0,000	154,903	4,631	29,625	761,603	34,255	766,211	156,790	3175,378
9,100	132357	9,074	2,300	292,616	56,526	18652,180	15315,965	0,858	151,022	0,000	154,867	4,734	29,003	745,757	33,736	750,470	156,989	3183,696
9,300	135499	9,274	2,300	292,690	56,526	18775,554	15337,494	0,859	151,111	0,000	154,841	4,837	28,407	731,033	33,242	735,848	157,209	3193,864
9,500	138645	9,475	2,300	292,764	56,526	18899,028	15359,439	0,860	151,195	0,000	154,806	4,940	27,834	717,049	32,773	721,968	157,434	3204,494
9,700	141796	9,675	2,300	292,837	56,526	19022,424	15380,931	0,862	151,275	0,000	154,772	5,043	27,285	703,629	32,326	708,652	157,655	3214,984
9,900	144951	9,875	2,300	292,900	56,526	19146,397	15402,781	0,863	151,350	0,000	154,732	5,146	26,756	690,854	31,901	695,980	157,879	3225,884
10,100	148111	10,075	2,300	292,954	56,526	19270,556	15424,518	0,864	151,422	0,000	154,693	5,249	26,249	678,607	31,497	683,836	158,101	3236,828
10,300	151275	10,276	2,300	293,007	56,526	19394,624	15445,820	0,865	151,490	0,000	154,654	5,352	25,761	666,814	31,112	672,147	158,320	3247,599
10,500	154444	10,476	2,300	293,061	56,526	19517,950	15466,001	0,866	151,555	0,000	154,614	5,455	25,290	655,355	30,744	660,791	158,527	3257,718
10,700	157616	10,676	2,300	293,114	56,526	19641,420	15486,070	0,867	151,616	0,000	154,572	5,558	24,837	644,342	30,394	649,882	158,732	3267,875

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	160793	10,877	2,300	293,168	56,526	19764,797	15505,718	0,868	151,674	0,000	154,530	5,661	24,399	633,715	30,060	639,358	158,934	3277,872
11,100	163974	11,077	2,300	293,221	56,526	19888,216	15524,916	0,870	151,729	0,000	154,467	5,764	23,978	623,438	29,741	629,184	159,130	3287,642
11,300	167158	11,278	2,300	293,339	56,526	20012,528	15544,862	0,870	151,781	0,000	154,408	5,867	23,571	613,652	29,438	619,502	159,335	3298,060
11,500	170347	11,478	2,300	293,595	56,526	20136,915	15564,602	0,871	151,829	0,000	154,347	5,970	23,178	604,208	29,148	610,161	159,537	3308,437
11,700	173540	11,678	2,300	293,851	56,526	20261,345	15584,184	0,871	151,875	0,000	154,284	6,074	22,799	595,085	28,872	601,142	159,738	3318,775
11,900	176736	11,879	2,300	294,107	56,526	20386,390	15604,096	0,872	151,918	0,000	154,216	6,177	22,433	586,333	28,609	592,493	159,942	3329,443
12,100	179937	12,080	2,300	294,363	56,526	20511,825	15624,235	0,872	151,958	0,000	154,144	6,280	22,080	577,913	28,359	584,177	160,148	3340,340
12,300	183142	12,280	2,300	294,618	56,526	20636,182	15643,094	0,872	151,996	0,000	154,083	6,383	21,738	569,633	28,120	576,000	160,342	3350,398
12,500	186351	12,480	2,300	294,850	56,526	20758,625	15659,696	0,873	152,032	0,000	154,040	6,487	21,405	561,377	27,891	567,847	160,512	3358,935
12,700	189562	12,681	2,300	295,083	56,526	20881,869	15676,842	0,873	152,065	0,000	153,990	6,590	21,083	553,460	27,672	560,034	160,688	3367,930
12,900	192778	12,881	2,300	295,316	56,526	21006,291	15694,566	0,873	152,097	0,000	153,932	6,693	20,770	545,886	27,462	552,563	160,869	3377,516
13,100	195997	13,082	2,300	295,549	56,526	21133,286	15714,273	0,874	152,127	0,000	153,851	6,796	20,464	538,804	27,260	545,585	161,071	3388,764
13,300	199221	13,282	2,300	295,781	56,526	21258,701	15731,901	0,874	152,154	0,000	153,785	6,900	20,165	531,740	27,064	538,625	161,252	3398,719
13,500	202447	13,482	2,300	296,014	56,526	21380,064	15745,008	0,874	152,180	0,000	153,757	7,003	19,873	524,424	26,876	531,412	161,386	3405,557
13,700	205677	13,683	2,300	296,247	56,526	21507,541	15764,187	0,875	152,204	0,000	153,668	7,106	19,590	517,995	26,695	525,087	161,583	3416,930
13,900	208910	13,884	2,300	296,479	56,526	21631,157	15778,942	0,875	152,227	0,000	153,618	7,210	19,315	511,293	26,524	518,487	161,734	3425,129
14,100	212146	14,084	2,300	296,712	56,526	21757,744	15796,488	0,875	152,247	0,000	153,537	7,313	19,048	505,085	26,361	512,383	161,914	3435,439
14,300	215387	14,285	2,300	297,287	56,526	21887,185	15816,569	0,874	152,266	0,000	153,430	7,416	18,791	499,314	26,206	506,716	162,120	3447,615
14,500	218631	14,486	2,300	297,870	56,526	22012,712	15832,736	0,874	152,283	0,000	153,357	7,520	18,539	493,321	26,058	500,826	162,286	3457,035
14,700	221879	14,686	2,300	298,442	56,526	22139,077	15849,502	0,873	152,298	0,000	153,275	7,623	18,293	487,562	25,916	495,171	162,457	3466,962

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	225130	14,887	2,300	299,007	56,526	22264,685	15865,636	0,872	152,312	0,000	153,191	7,727	18,055	481,905	25,781	489,618	162,623	3476,480
15,100	228384	15,087	2,300	299,571	56,526	22392,367	15883,316	0,871	152,324	0,000	153,098	7,830	17,822	476,556	25,652	484,373	162,804	3487,181
15,300	231642	15,288	2,300	300,136	56,526	22519,512	15900,269	0,871	152,334	0,000	153,009	7,934	17,596	471,286	25,529	479,206	162,978	3497,415
15,500	234903	15,489	2,300	300,701	56,526	22647,244	15917,602	0,870	152,343	0,000	152,915	8,037	17,375	466,197	25,412	474,221	163,155	3507,988
15,700	238168	15,690	2,300	301,266	56,526	22777,657	15937,466	0,869	152,350	0,000	152,795	8,141	17,162	461,474	25,302	469,601	163,359	3520,426
15,900	241437	15,891	2,300	301,831	56,526	22906,897	15955,956	0,868	152,355	0,000	152,685	8,244	16,952	456,754	25,196	464,986	163,549	3531,953
16,100	244710	16,092	2,300	302,395	56,526	23037,396	15975,581	0,868	152,359	0,000	152,563	8,348	16,748	452,261	25,095	460,596	163,750	3544,364
16,300	247987	16,293	2,300	302,960	56,526	23168,573	15995,416	0,867	152,360	0,000	152,435	8,452	16,548	447,913	24,999	456,352	163,953	3557,083
16,500	251268	16,494	2,300	303,525	56,526	23300,764	16015,433	0,866	152,360	0,000	152,302	8,555	16,351	443,720	24,906	452,262	164,158	3570,217
16,700	254553	16,695	2,300	304,090	56,526	23434,972	16037,254	0,865	152,359	0,000	152,150	8,659	16,161	439,792	24,819	448,438	164,382	3584,757
16,900	257843	16,896	2,300	304,647	56,526	23568,919	16058,495	0,864	152,355	0,000	152,002	8,763	15,973	435,918	24,736	444,669	164,600	3599,000
17,100	261137	17,097	2,300	305,202	56,526	23703,015	16079,688	0,864	152,350	0,000	151,852	8,867	15,789	432,143	24,656	440,997	164,817	3613,322
17,300	264435	17,298	2,300	305,757	56,526	23837,966	16101,660	0,863	152,343	0,000	151,694	8,971	15,610	428,525	24,580	437,483	165,042	3628,288
17,500	267739	17,500	2,300	306,312	56,526	23975,836	16126,459	0,862	152,334	0,000	151,509	9,075	15,439	425,221	24,513	434,284	165,296	3645,328
17,700	271047	17,701	2,300	306,867	56,526	24113,337	16150,624	0,861	152,322	0,000	151,328	9,179	15,271	421,944	24,449	431,111	165,544	3661,978
17,900	274360	17,902	2,300	307,422	56,526	24246,844	16170,507	0,861	152,310	0,000	151,186	9,283	15,104	418,402	24,386	427,673	165,748	3675,591
18,100	277677	18,103	2,300	307,978	56,526	24379,360	16189,000	0,860	152,295	0,000	151,055	9,387	14,941	414,822	24,327	424,197	165,937	3688,169
18,300	280997	18,304	2,300	308,533	56,526	24510,363	16205,477	0,859	152,280	0,000	150,943	9,491	14,781	411,153	24,272	420,633	166,106	3699,196
18,500	284320	18,504	2,300	308,965	56,526	24637,062	16216,831	0,859	152,264	0,000	150,878	9,595	14,623	407,148	24,218	416,731	166,223	3706,324
18,700	287646	18,705	2,300	308,970	56,526	24764,328	16228,404	0,859	152,248	0,000	150,810	9,700	14,470	403,241	24,169	412,929	166,341	3713,562

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	290974	18,905	2,300	308,973	56,526	24891,046	16239,154	0,860	152,231	0,000	150,751	9,804	14,319	399,356	24,122	409,148	166,451	3720,204
19,100	294304	19,106	2,300	308,974	56,526	25017,571	16249,615	0,861	152,214	0,000	150,693	9,908	14,172	395,535	24,079	405,431	166,559	3726,664
19,300	297636	19,306	2,300	308,975	56,526	25144,362	16260,061	0,861	152,197	0,000	150,634	10,012	14,028	391,795	24,040	401,796	166,666	3733,139
19,500	300971	19,507	2,300	308,975	56,526	25270,741	16270,033	0,862	152,179	0,000	150,579	10,116	13,887	388,101	24,003	398,206	166,768	3739,289
19,700	304307	19,707	2,300	308,976	56,526	25397,685	16280,521	0,863	152,161	0,000	150,518	10,220	13,749	384,525	23,969	394,734	166,875	3745,852
19,900	307646	19,907	2,300	308,977	56,526	25524,217	16290,441	0,864	152,143	0,000	150,462	10,324	13,614	380,984	23,938	391,298	166,977	3752,045
20,100	310986	20,108	2,300	308,978	56,526	25651,431	16301,160	0,864	152,125	0,000	150,398	10,428	13,483	377,576	23,910	387,993	167,087	3758,862
20,300	314329	20,308	2,300	308,979	56,526	25778,200	16311,196	0,865	152,106	0,000	150,341	10,532	13,353	374,190	23,885	384,711	167,190	3765,200
20,500	317674	20,509	2,300	308,979	56,526	25905,405	16321,831	0,866	152,087	0,000	150,278	10,636	13,227	370,915	23,862	381,541	167,299	3772,017
20,700	321021	20,709	2,300	308,981	56,526	26032,292	16331,984	0,866	152,068	0,000	150,218	10,740	13,103	367,674	23,842	378,403	167,403	3778,504
20,900	324370	20,910	2,300	308,982	56,526	26159,595	16342,658	0,867	152,049	0,000	150,154	10,844	12,981	364,533	23,825	375,366	167,512	3785,398
21,100	327722	21,110	2,300	308,983	56,526	26286,932	16353,416	0,868	152,029	0,000	150,090	10,948	12,862	361,460	23,810	372,398	167,623	3792,389
21,300	331075	21,311	2,300	308,984	56,526	26414,621	16364,460	0,868	152,009	0,000	150,023	11,052	12,746	358,467	23,798	369,508	167,736	3799,613
21,500	334431	21,511	2,300	308,985	56,526	26542,627	16376,027	0,869	151,989	0,000	149,952	11,156	12,632	355,568	23,788	366,713	167,854	3807,264
21,700	337790	21,712	2,300	308,987	56,526	26671,352	16387,544	0,870	151,969	0,000	149,883	11,260	12,521	352,721	23,780	363,970	167,972	3814,905
21,900	341151	21,912	2,300	308,993	56,526	26800,659	16400,099	0,870	151,948	0,000	149,806	11,364	12,412	349,996	23,776	361,350	168,101	3823,347
22,100	344514	22,113	2,300	309,002	56,526	26929,872	16412,941	0,871	151,926	0,000	149,726	11,468	12,306	347,341	23,773	358,799	168,233	3832,018
22,300	347880	22,314	2,300	309,011	56,526	27059,641	16426,187	0,871	151,905	0,000	149,642	11,572	12,202	344,763	23,773	356,325	168,368	3841,043


Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
KB
LCF
LCB
MTc
Immersion (TPc)
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000 390000 420000 450000 480000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000 39000 42000 45000
Area m^2
141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156
Long. centre from zero pt. (+ve fwd) m
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
KB m
10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800 3000 3200
KM long. m
132,5 135 137,5 140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5 170
Immersion tonne/cm
2400 2500 2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900
Moment to trim tonne.m

Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc

10.4 Fixed Trim = 3,45 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

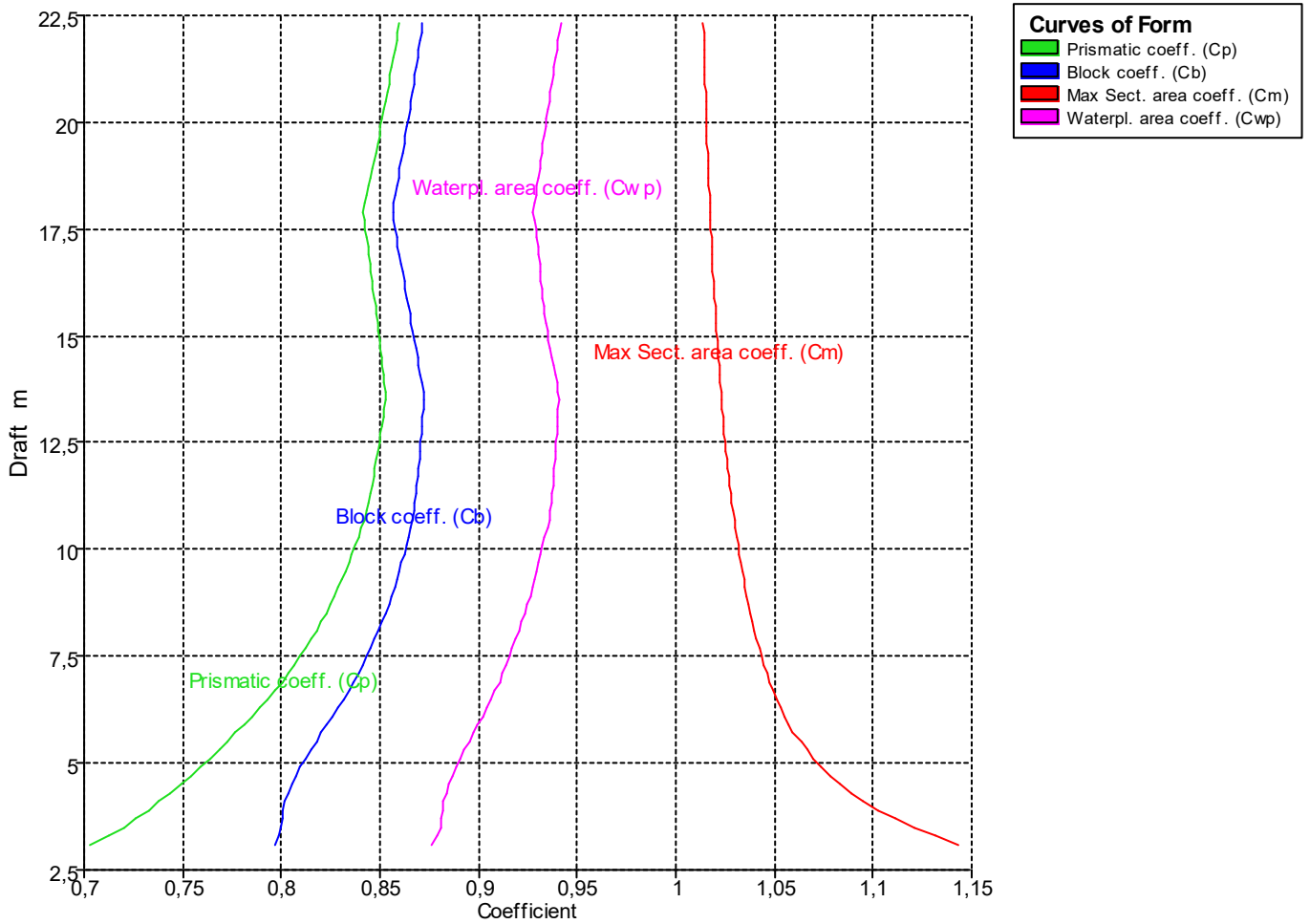
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	40699	3,072	3,450	289,460	55,824	14735,101	14097,845	0,796	134,113	0,000	153,880	1,722	78,719	2047,396	80,436	2048,986	144,503	2723,589
3,300	43598	3,271	3,450	289,710	55,960	14886,258	14187,391	0,799	135,433	0,000	154,030	1,819	74,574	1932,617	76,388	1934,310	145,421	2752,566
3,500	46515	3,469	3,450	290,269	56,096	15035,003	14271,198	0,800	136,603	0,000	154,154	1,916	70,865	1830,278	72,776	1832,075	146,280	2779,742
3,700	49449	3,668	3,450	290,934	56,223	15181,432	14350,737	0,801	137,648	0,000	154,245	2,014	67,522	1738,894	69,532	1740,795	147,095	2806,058
3,900	52398	3,868	3,450	291,607	56,302	15324,262	14424,214	0,801	138,584	0,000	154,294	2,113	64,479	1656,111	66,587	1658,116	147,848	2830,420
4,100	55362	4,067	3,450	292,280	56,380	15463,984	14493,536	0,801	139,427	0,000	154,332	2,212	61,696	1581,291	63,904	1583,400	148,559	2853,980
4,300	58340	4,267	3,450	292,570	56,459	15601,979	14556,903	0,803	140,188	0,000	154,352	2,312	59,129	1512,786	61,437	1514,999	149,208	2875,743
4,500	61330	4,467	3,450	292,775	56,498	15737,854	14614,985	0,805	140,879	0,000	154,375	2,412	56,752	1449,881	59,160	1452,199	149,804	2895,985
4,700	64332	4,666	3,450	292,928	56,514	15871,735	14668,270	0,807	141,510	0,000	154,399	2,512	54,547	1391,905	57,056	1394,327	150,350	2914,816
4,900	67344	4,866	3,450	293,058	56,526	16004,343	14717,776	0,810	142,088	0,000	154,421	2,613	52,498	1338,481	55,108	1341,007	150,857	2932,757
5,100	70366	5,066	3,450	293,169	56,526	16135,068	14763,726	0,812	142,618	0,000	154,453	2,714	50,576	1289,335	53,287	1291,966	151,328	2950,434
5,300	73396	5,266	3,450	293,272	56,526	16264,916	14804,762	0,815	143,107	0,000	154,472	2,816	48,774	1243,419	51,586	1246,154	151,749	2966,507
5,500	76435	5,465	3,450	293,375	56,526	16393,936	14843,097	0,818	143,560	0,000	154,486	2,917	47,089	1200,731	50,003	1203,570	152,142	2981,876
5,700	79482	5,665	3,450	293,401	56,526	16522,408	14879,279	0,820	143,979	0,000	154,490	3,018	45,513	1160,958	48,529	1163,901	152,513	2996,642
5,900	82536	5,865	3,450	293,269	56,526	16650,488	14912,949	0,823	144,368	0,000	154,493	3,120	44,040	1123,589	47,157	1126,636	152,858	3010,237
6,100	85596	6,065	3,450	293,138	56,526	16778,058	14944,816	0,826	144,731	0,000	154,493	3,222	42,660	1088,518	45,879	1091,669	153,184	3023,055
6,300	88663	6,265	3,450	293,006	56,526	16904,627	14976,020	0,829	145,069	0,000	154,501	3,324	41,366	1055,798	44,687	1059,053	153,504	3035,899
6,500	91736	6,465	3,450	292,874	56,526	17031,784	15005,661	0,832	145,385	0,000	154,508	3,426	40,145	1025,020	43,568	1028,379	153,808	3048,224
6,700	94815	6,665	3,450	292,744	56,526	17157,716	15033,596	0,834	145,681	0,000	154,510	3,527	38,993	995,970	42,518	999,433	154,094	3059,927

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	97899	6,865	3,450	292,617	56,526	17283,228	15060,194	0,837	145,959	0,000	154,516	3,629	37,902	968,556	41,529	972,122	154,367	3071,208
7,100	100989	7,065	3,450	292,571	56,526	17408,543	15086,420	0,839	146,222	0,000	154,518	3,732	36,875	942,728	40,604	946,399	154,636	3082,384
7,300	104085	7,265	3,450	292,540	56,526	17533,562	15112,043	0,841	146,469	0,000	154,520	3,834	35,903	918,325	39,735	922,099	154,898	3093,362
7,500	107185	7,465	3,450	292,503	56,526	17658,640	15136,996	0,843	146,702	0,000	154,522	3,936	34,985	895,190	38,918	899,068	155,154	3104,017
7,700	110291	7,665	3,450	292,452	56,526	17783,484	15160,924	0,845	146,922	0,000	154,527	4,038	34,114	873,170	38,149	877,151	155,399	3114,155
7,900	113401	7,865	3,450	292,392	56,526	17906,227	15184,405	0,847	147,131	0,000	154,528	4,140	33,287	852,274	37,425	856,359	155,640	3124,136
8,100	116516	8,065	3,450	292,332	56,526	18030,497	15208,525	0,849	147,329	0,000	154,529	4,242	32,501	832,623	36,742	836,811	155,887	3134,763
8,300	119636	8,265	3,450	292,272	56,526	18154,538	15232,067	0,851	147,517	0,000	154,527	4,345	31,754	813,894	36,096	818,186	156,129	3145,144
8,500	122761	8,465	3,450	292,213	56,526	18278,641	15255,521	0,853	147,695	0,000	154,518	4,447	31,042	796,104	35,487	800,499	156,369	3155,615
8,700	125891	8,665	3,450	292,253	56,526	18402,395	15278,670	0,855	147,865	0,000	154,500	4,549	30,361	779,166	34,909	783,665	156,606	3166,102
8,900	129025	8,866	3,450	292,326	56,526	18526,226	15302,035	0,856	148,026	0,000	154,472	4,652	29,708	763,158	34,358	767,760	156,846	3177,184
9,100	132165	9,066	3,450	292,400	56,526	18649,904	15324,770	0,857	148,179	0,000	154,444	4,754	29,082	747,839	33,834	752,545	157,079	3188,103
9,300	135309	9,266	3,450	292,474	56,526	18773,973	15347,675	0,859	148,324	0,000	154,412	4,857	28,482	733,267	33,337	738,076	157,314	3199,310
9,500	138457	9,467	3,450	292,547	56,526	18898,247	15370,360	0,860	148,463	0,000	154,376	4,959	27,906	719,335	32,863	724,248	157,546	3210,554
9,700	141610	9,667	3,450	292,621	56,526	19019,999	15391,312	0,861	148,593	0,000	154,328	5,062	27,354	705,752	32,414	710,769	157,761	3220,645
9,900	144767	9,868	3,450	292,695	56,526	19143,757	15412,904	0,862	148,718	0,000	154,295	5,165	26,823	692,873	31,986	697,992	157,982	3231,390
10,100	147929	10,068	3,450	292,768	56,526	19267,502	15434,275	0,863	148,837	0,000	154,262	5,267	26,314	680,506	31,579	685,729	158,201	3242,075
10,300	151095	10,268	3,450	292,842	56,526	19391,231	15455,270	0,865	148,950	0,000	154,227	5,370	25,823	668,613	31,191	673,940	158,417	3252,657
10,500	154265	10,469	3,450	292,902	56,526	19515,664	15476,724	0,866	149,059	0,000	154,188	5,473	25,352	657,271	30,823	662,701	158,636	3263,667
10,700	157440	10,669	3,450	292,961	56,526	19640,672	15498,435	0,867	149,162	0,000	154,144	5,575	24,897	646,422	30,471	651,955	158,859	3274,985

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	160619	10,870	3,450	293,217	56,526	19765,978	15520,129	0,867	149,260	0,000	154,095	5,678	24,460	636,002	30,136	641,639	159,081	3286,418
11,100	163803	11,070	3,450	293,474	56,526	19890,837	15541,131	0,868	149,353	0,000	154,045	5,781	24,038	625,893	29,817	631,633	159,297	3297,452
11,300	166991	11,271	3,450	293,731	56,526	20016,152	15562,278	0,868	149,443	0,000	153,988	5,884	23,631	616,188	29,513	622,032	159,513	3308,701
11,500	170184	11,472	3,450	293,987	56,526	20141,818	15583,517	0,869	149,527	0,000	153,928	5,987	23,238	606,857	29,224	612,805	159,731	3320,111
11,700	173380	11,673	3,450	294,244	56,526	20266,257	15603,363	0,869	149,608	0,000	153,860	6,090	22,860	597,687	28,948	603,738	159,934	3330,580
11,900	176581	11,873	3,450	294,500	56,526	20389,291	15621,253	0,870	149,685	0,000	153,817	6,193	22,491	588,619	28,683	594,773	160,118	3339,797
12,100	179785	12,073	3,450	294,757	56,526	20511,228	15637,787	0,870	149,758	0,000	153,784	6,296	22,134	579,707	28,429	585,966	160,287	3348,119
12,300	182992	12,274	3,450	295,014	56,526	20636,535	15657,388	0,870	149,828	0,000	153,719	6,399	21,791	571,465	28,189	577,827	160,488	3358,685
12,500	186204	12,475	3,450	295,270	56,526	20761,667	15676,286	0,871	149,895	0,000	153,658	6,502	21,457	563,441	27,958	569,907	160,682	3368,943
12,700	189420	12,676	3,450	295,527	56,526	20889,722	15697,609	0,871	149,958	0,000	153,572	6,605	21,130	555,992	27,734	562,562	160,900	3381,193
12,900	192639	12,876	3,450	295,779	56,526	21011,258	15711,894	0,871	150,018	0,000	153,548	6,708	20,811	548,013	27,518	554,686	161,047	3388,572
13,100	195861	13,077	3,450	296,013	56,526	21136,653	15729,957	0,872	150,076	0,000	153,487	6,811	20,501	540,730	27,312	547,507	161,232	3398,833
13,300	199088	13,277	3,450	296,246	56,526	21261,690	15747,093	0,872	150,131	0,000	153,431	6,915	20,201	533,580	27,115	540,460	161,408	3408,503
13,500	202317	13,478	3,450	296,480	56,526	21387,930	15765,234	0,872	150,183	0,000	153,365	7,018	19,911	526,766	26,927	533,749	161,594	3418,981
13,700	205551	13,679	3,450	296,976	56,526	21518,239	15786,996	0,872	150,232	0,000	153,261	7,121	19,630	520,548	26,750	527,635	161,817	3432,137
13,900	208789	13,880	3,450	297,565	56,526	21643,742	15803,955	0,871	150,279	0,000	153,198	7,224	19,356	514,019	26,579	521,210	161,991	3441,916
14,100	212031	14,081	3,450	298,154	56,526	21770,133	15821,583	0,870	150,323	0,000	153,126	7,328	19,089	507,760	26,415	515,055	162,171	3452,265
14,300	215276	14,282	3,450	298,743	56,526	21896,847	15839,100	0,870	150,365	0,000	153,051	7,431	18,829	501,678	26,259	509,076	162,351	3462,612
14,500	218525	14,483	3,450	299,333	56,526	22024,356	15857,176	0,869	150,404	0,000	152,968	7,534	18,577	495,830	26,110	503,332	162,536	3473,429
14,700	221777	14,684	3,450	299,922	56,526	22151,996	15875,111	0,868	150,441	0,000	152,882	7,638	18,331	490,139	25,967	497,745	162,720	3484,223

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	225034	14,885	3,450	300,511	56,526	22279,913	15893,152	0,867	150,476	0,000	152,793	7,741	18,091	484,621	25,831	492,330	162,905	3495,152
15,100	228294	15,086	3,450	301,100	56,526	22410,201	15913,334	0,867	150,509	0,000	152,682	7,845	17,859	479,460	25,703	487,274	163,112	3507,675
15,300	231558	15,287	3,450	301,675	56,526	22539,002	15932,245	0,866	150,539	0,000	152,575	7,948	17,632	474,324	25,579	482,241	163,306	3519,360
15,500	234826	15,488	3,450	302,246	56,526	22669,366	15952,240	0,865	150,566	0,000	152,460	8,052	17,411	469,431	25,462	477,452	163,510	3531,895
15,700	238098	15,690	3,450	302,817	56,526	22800,650	15973,026	0,864	150,592	0,000	152,337	8,155	17,196	464,742	25,350	472,867	163,724	3545,069
15,900	241375	15,891	3,450	303,387	56,526	22932,790	15994,180	0,864	150,614	0,000	152,209	8,259	16,986	460,226	25,243	468,455	163,940	3558,695
16,100	244655	16,093	3,450	303,958	56,526	23066,319	16015,989	0,863	150,635	0,000	152,070	8,363	16,779	455,913	25,141	464,246	164,164	3573,066
16,300	247941	16,295	3,450	304,528	56,526	23201,418	16039,032	0,862	150,653	0,000	151,917	8,466	16,579	451,824	25,044	460,261	164,400	3588,434
16,500	251231	16,496	3,450	305,099	56,526	23335,471	16060,762	0,861	150,668	0,000	151,774	8,570	16,381	447,735	24,950	456,276	164,623	3602,994
16,700	254526	16,698	3,450	305,669	56,526	23470,568	16083,417	0,861	150,682	0,000	151,621	8,674	16,188	443,831	24,861	452,477	164,855	3618,317
16,900	257825	16,900	3,450	306,240	56,526	23607,246	16107,503	0,860	150,693	0,000	151,451	8,778	16,002	440,145	24,779	448,895	165,102	3634,729
17,100	261129	17,102	3,450	306,811	56,526	23746,689	16134,093	0,859	150,701	0,000	151,256	8,882	15,824	436,754	24,705	445,608	165,374	3652,981
17,300	264439	17,304	3,450	307,381	56,526	23879,615	16153,835	0,858	150,707	0,000	151,122	8,986	15,643	432,883	24,629	441,841	165,577	3666,386
17,500	267752	17,505	3,450	307,943	56,526	24013,394	16174,007	0,858	150,711	0,000	150,984	9,090	15,469	429,129	24,559	438,192	165,784	3680,067
17,700	271069	17,706	3,450	308,504	56,526	24143,168	16189,652	0,857	150,714	0,000	150,885	9,195	15,297	425,086	24,490	434,253	165,944	3690,407
17,900	274390	17,907	3,450	308,946	56,526	24271,499	16202,978	0,856	150,716	0,000	150,807	9,299	15,129	420,926	24,427	430,197	166,081	3698,867
18,100	277712	18,108	3,450	308,951	56,526	24398,433	16214,467	0,857	150,716	0,000	150,745	9,403	14,964	416,709	24,366	426,085	166,198	3705,951
18,300	281037	18,309	3,450	308,956	56,526	24525,471	16225,775	0,858	150,716	0,000	150,684	9,507	14,803	412,573	24,309	422,053	166,314	3712,912
18,500	284364	18,509	3,450	308,961	56,526	24651,981	16236,433	0,859	150,716	0,000	150,628	9,611	14,645	408,480	24,256	418,065	166,423	3719,420
18,700	287694	18,710	3,450	308,966	56,526	24778,868	16247,225	0,859	150,714	0,000	150,570	9,716	14,492	404,490	24,206	414,179	166,534	3726,061

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	291025	18,911	3,450	308,971	56,526	24905,189	16257,338	0,860	150,712	0,000	150,517	9,820	14,341	400,537	24,160	410,331	166,638	3732,230
19,100	294359	19,111	3,450	308,976	56,526	25032,185	16268,121	0,861	150,710	0,000	150,457	9,924	14,194	396,722	24,117	406,620	166,748	3738,918
19,300	297695	19,312	3,450	308,980	56,526	25158,599	16278,159	0,862	150,707	0,000	150,404	10,028	14,049	392,934	24,076	402,936	166,851	3745,086
19,500	301033	19,513	3,450	308,983	56,526	25285,800	16289,117	0,862	150,703	0,000	150,342	10,132	13,909	389,299	24,040	399,405	166,963	3751,984
19,700	304373	19,713	3,450	308,984	56,526	25412,549	16299,372	0,863	150,699	0,000	150,286	10,236	13,771	385,689	24,006	395,900	167,069	3758,392
19,900	307716	19,914	3,450	308,985	56,526	25539,739	16310,155	0,864	150,694	0,000	150,224	10,340	13,636	382,195	23,975	392,510	167,179	3765,222
20,100	311060	20,115	3,450	308,986	56,526	25666,596	16320,444	0,864	150,689	0,000	150,165	10,444	13,504	378,739	23,947	389,158	167,285	3771,719
20,300	314407	20,315	3,450	308,986	56,526	25793,781	16331,117	0,865	150,683	0,000	150,103	10,548	13,375	375,381	23,922	385,904	167,394	3778,518
20,500	317756	20,516	3,450	308,987	56,526	25921,128	16342,048	0,866	150,677	0,000	150,038	10,652	13,248	372,110	23,900	382,738	167,506	3785,542
20,700	321107	20,717	3,450	308,988	56,526	26048,631	16352,923	0,866	150,670	0,000	149,972	10,756	13,125	368,901	23,880	379,633	167,617	3792,550
20,900	324460	20,918	3,450	308,989	56,526	26176,609	16364,511	0,867	150,662	0,000	149,901	10,860	13,004	365,807	23,863	376,643	167,736	3800,128
21,100	327816	21,118	3,450	308,990	56,526	26304,980	16375,913	0,868	150,654	0,000	149,831	10,964	12,885	362,762	23,848	373,702	167,853	3807,597
21,300	331174	21,319	3,450	308,991	56,526	26434,238	16388,148	0,868	150,645	0,000	149,753	11,068	12,769	359,833	23,837	370,877	167,979	3815,716
21,500	334535	21,520	3,450	308,992	56,526	26563,192	16400,703	0,869	150,636	0,000	149,672	11,172	12,656	356,981	23,828	368,130	168,107	3824,088
21,700	337899	21,721	3,450	308,993	56,526	26692,948	16413,987	0,870	150,626	0,000	149,585	11,276	12,546	354,233	23,821	365,486	168,243	3833,040
21,900	341265	21,922	3,450	308,995	56,526	26821,728	16426,115	0,870	150,615	0,000	149,508	11,380	12,436	351,466	23,815	362,824	168,368	3841,224
22,100	344633	22,123	3,450	308,996	56,526	26950,819	16438,152	0,871	150,604	0,000	149,433	11,484	12,327	348,752	23,811	360,213	168,491	3849,434
22,300	348004	22,324	3,450	308,997	56,526	27079,778	16450,086	0,872	150,593	0,000	149,359	11,588	12,221	346,082	23,808	357,648	168,613	3857,615


Curves of Form
Prismatic coeff. (Cp)
Block coeff. (Cb)
Max Sect. area coeff. (Cm)
Waterpl. area coeff. (Cwp)
Waterpl. area coeff. (Cw p)
Max Sect. area coeff. (Cm)
Block coeff. (Cb)
Prismatic coeff. (Cp)
Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
0,7
0,75
0,8
0,85
0,9
0,95
1
1,05
1,1
1,15
Coefficient

10.5 Fixed Trim = 4,6 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

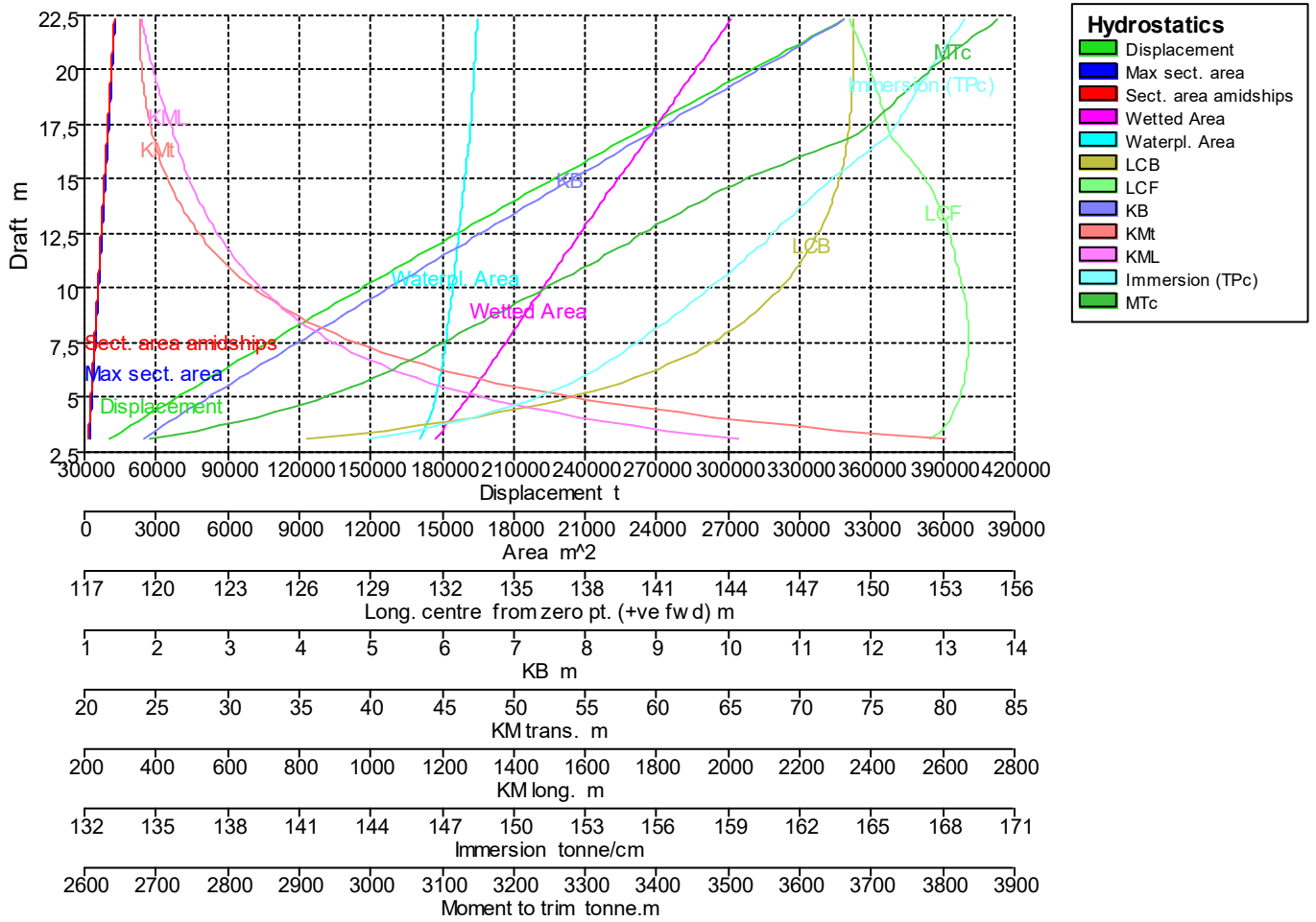
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	40602	3,084	4,600	289,623	55,917	14682,038	14035,384	0,794	126,319	0,000	152,487	1,822	78,402	2027,761	80,215	2029,349	143,863	2690,682
3,300	43490	3,280	4,600	290,352	56,053	14844,633	14138,541	0,795	128,066	0,000	152,743	1,912	74,408	1919,165	76,312	1920,856	144,920	2726,305
3,500	46398	3,477	4,600	291,049	56,188	15002,135	14232,175	0,796	129,619	0,000	152,937	2,004	70,780	1821,206	72,776	1823,000	145,880	2758,719
3,700	49324	3,675	4,600	291,427	56,273	15154,372	14318,191	0,797	131,008	0,000	153,086	2,097	67,488	1732,432	69,577	1734,329	146,761	2788,345
3,900	52267	3,873	4,600	291,613	56,352	15302,091	14399,260	0,799	132,256	0,000	153,230	2,192	64,487	1652,420	66,672	1654,422	147,592	2816,874
4,100	55227	4,071	4,600	291,799	56,430	15446,631	14472,406	0,801	133,383	0,000	153,355	2,287	61,731	1578,817	64,011	1580,923	148,342	2842,361
4,300	58200	4,269	4,600	292,006	56,491	15587,407	14538,538	0,803	134,407	0,000	153,462	2,383	59,183	1511,051	61,559	1513,261	149,020	2865,410
4,500	61187	4,468	4,600	292,215	56,507	15724,437	14598,090	0,805	135,340	0,000	153,540	2,480	56,821	1448,364	59,295	1450,678	149,630	2886,043
4,700	64185	4,667	4,600	292,424	56,524	15858,960	14654,660	0,807	136,192	0,000	153,621	2,578	54,631	1391,165	57,202	1393,582	150,210	2906,493
4,900	67194	4,866	4,600	292,633	56,526	15992,023	14704,475	0,809	136,974	0,000	153,683	2,676	52,578	1337,851	55,247	1340,373	150,721	2924,731
5,100	70213	5,065	4,600	292,807	56,526	16123,799	14750,430	0,812	137,694	0,000	153,739	2,774	50,659	1288,548	53,427	1291,173	151,192	2942,103
5,300	73241	5,264	4,600	292,720	56,526	16254,932	14793,095	0,815	138,359	0,000	153,788	2,873	48,870	1242,722	51,737	1245,452	151,629	2958,447
5,500	76278	5,464	4,600	292,617	56,526	16385,451	14832,889	0,818	138,975	0,000	153,835	2,972	47,198	1200,037	50,165	1202,871	152,037	2973,891
5,700	79323	5,663	4,600	292,488	56,526	16515,029	14872,085	0,821	139,547	0,000	153,890	3,072	45,636	1160,708	48,703	1163,646	152,439	2989,879
5,900	82375	5,862	4,600	292,357	56,526	16644,129	14907,235	0,824	140,079	0,000	153,921	3,171	44,168	1123,499	47,334	1126,540	152,799	3004,023
6,100	85434	6,062	4,600	292,226	56,526	16772,124	14940,418	0,827	140,575	0,000	153,947	3,271	42,785	1088,688	46,051	1091,833	153,139	3017,703
6,300	88500	6,262	4,600	292,095	56,526	16899,407	14971,447	0,830	141,039	0,000	153,969	3,372	41,481	1055,939	44,848	1059,189	153,457	3030,627
6,500	91572	6,461	4,600	292,019	56,526	17025,916	15000,231	0,833	141,474	0,000	153,989	3,472	40,248	1025,051	43,715	1028,405	153,752	3042,770
6,700	94650	6,661	4,600	291,985	56,526	17151,587	15028,285	0,835	141,882	0,000	154,003	3,572	39,089	996,029	42,656	999,486	154,040	3054,690

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	97734	6,861	4,600	291,950	56,526	17276,542	15056,619	0,837	142,265	0,000	154,032	3,673	37,996	968,927	41,665	972,488	154,330	3067,099
7,100	100823	7,060	4,600	291,915	56,526	17402,467	15083,204	0,840	142,626	0,000	154,050	3,774	36,967	943,102	40,736	946,767	154,603	3078,434
7,300	103917	7,260	4,600	291,884	56,526	17527,673	15108,473	0,842	142,966	0,000	154,067	3,874	35,993	918,560	39,863	922,329	154,862	3089,083
7,500	107017	7,460	4,600	291,853	56,526	17652,070	15133,967	0,844	143,288	0,000	154,075	3,975	35,072	895,480	39,044	899,352	155,123	3100,054
7,700	110122	7,660	4,600	291,823	56,526	17776,283	15158,905	0,846	143,593	0,000	154,081	4,076	34,200	873,599	38,272	877,575	155,379	3110,829
7,900	113232	7,860	4,600	291,793	56,526	17900,620	15183,749	0,848	143,881	0,000	154,082	4,178	33,372	852,902	37,546	856,981	155,633	3121,709
8,100	116347	8,060	4,600	291,814	56,526	18024,985	15208,567	0,850	144,155	0,000	154,078	4,279	32,585	833,309	36,860	837,492	155,888	3132,738
8,300	119467	8,260	4,600	291,895	56,526	18149,378	15234,085	0,851	144,414	0,000	154,060	4,380	31,837	814,867	36,213	819,153	156,149	3144,436
8,500	122593	8,461	4,600	291,968	56,526	18272,115	15259,790	0,853	144,660	0,000	154,044	4,482	31,122	797,441	35,600	801,830	156,413	3156,592
8,700	125723	8,661	4,600	292,042	56,526	18396,959	15284,627	0,854	144,893	0,000	154,026	4,583	30,435	780,824	35,015	785,317	156,667	3168,661
8,900	128859	8,861	4,600	292,115	56,526	18522,084	15309,326	0,855	145,115	0,000	154,004	4,685	29,778	765,003	34,459	769,599	156,921	3180,831
9,100	131999	9,062	4,600	292,189	56,526	18646,775	15333,098	0,857	145,327	0,000	153,977	4,787	29,148	749,794	33,932	754,494	157,164	3192,534
9,300	135145	9,262	4,600	292,263	56,526	18771,036	15356,176	0,858	145,528	0,000	153,950	4,889	28,546	735,179	33,431	739,983	157,401	3203,873
9,500	138295	9,462	4,600	292,336	56,526	18895,032	15378,584	0,859	145,720	0,000	153,923	4,990	27,968	721,135	32,955	726,042	157,630	3214,911
9,700	141450	9,663	4,600	292,410	56,526	19019,089	15400,823	0,861	145,902	0,000	153,896	5,092	27,414	707,689	32,503	712,700	157,858	3225,947
9,900	144609	9,863	4,600	292,483	56,526	19143,394	15422,919	0,862	146,077	0,000	153,864	5,194	26,881	694,818	32,073	699,933	158,085	3237,055
10,100	147773	10,064	4,600	292,557	56,526	19266,145	15444,663	0,863	146,244	0,000	153,817	5,297	26,371	682,435	31,664	687,653	158,308	3247,978
10,300	150941	10,265	4,600	292,780	56,526	19391,346	15467,203	0,864	146,402	0,000	153,773	5,399	25,879	670,699	31,275	676,021	158,539	3259,649
10,500	154114	10,465	4,600	293,058	56,526	19516,488	15489,484	0,864	146,554	0,000	153,732	5,501	25,407	659,403	30,905	664,828	158,767	3271,220
10,700	157291	10,666	4,600	293,335	56,526	19641,843	15511,649	0,865	146,698	0,000	153,686	5,603	24,952	648,548	30,553	654,076	158,994	3282,835

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	160473	10,867	4,600	293,613	56,526	19767,766	15534,155	0,865	146,836	0,000	153,635	5,706	24,515	638,162	30,218	643,794	159,225	3294,776
11,100	163660	11,068	4,600	293,874	56,526	19893,984	15556,699	0,866	146,968	0,000	153,582	5,808	24,094	628,182	29,900	633,918	159,456	3306,843
11,300	166851	11,268	4,600	294,131	56,526	20018,511	15577,106	0,866	147,094	0,000	153,547	5,911	23,686	618,314	29,594	624,153	159,665	3317,533
11,500	170046	11,468	4,600	294,388	56,526	20141,267	15595,395	0,867	147,216	0,000	153,525	6,013	23,291	608,547	29,301	614,490	159,853	3326,818
11,700	173244	11,669	4,600	294,645	56,526	20266,539	15615,886	0,867	147,332	0,000	153,476	6,116	22,911	599,412	29,024	605,459	160,063	3337,751
11,900	176448	11,870	4,600	294,903	56,526	20390,834	15635,098	0,868	147,443	0,000	153,434	6,218	22,543	590,448	28,758	596,598	160,260	3347,847
12,100	179655	12,071	4,600	295,160	56,526	20521,254	15659,976	0,868	147,549	0,000	153,337	6,321	22,185	582,506	28,503	588,760	160,515	3362,224
12,300	182867	12,272	4,600	295,417	56,526	20642,291	15675,065	0,869	147,651	0,000	153,312	6,424	21,835	573,706	28,256	580,064	160,669	3369,833
12,500	186081	12,472	4,600	295,675	56,526	20763,871	15689,884	0,869	147,749	0,000	153,292	6,527	21,494	565,196	28,019	571,658	160,821	3377,431
12,700	189300	12,673	4,600	295,932	56,526	20891,941	15711,080	0,869	147,842	0,000	153,210	6,629	21,164	557,721	27,791	564,286	161,039	3389,781
12,900	192522	12,874	4,600	296,189	56,526	21017,549	15729,263	0,870	147,931	0,000	153,153	6,732	20,846	550,151	27,576	556,820	161,225	3400,030
13,100	195748	13,075	4,600	296,628	56,526	21146,022	15749,929	0,869	148,017	0,000	153,072	6,835	20,538	543,106	27,370	549,879	161,437	3412,153
13,300	198979	13,277	4,600	297,246	56,526	21273,784	15770,011	0,869	148,098	0,000	152,994	6,938	20,239	536,221	27,174	543,097	161,643	3423,920
13,500	202213	13,478	4,600	297,857	56,526	21400,114	15788,336	0,868	148,176	0,000	152,930	7,041	19,948	529,368	26,987	536,348	161,830	3434,520
13,700	205452	13,679	4,600	298,452	56,526	21527,091	15807,022	0,867	148,250	0,000	152,861	7,144	19,665	522,769	26,807	529,853	162,022	3445,468
13,900	208694	13,880	4,600	299,047	56,526	21654,330	15825,715	0,867	148,322	0,000	152,790	7,247	19,391	516,374	26,636	523,562	162,214	3456,494
14,100	211940	14,081	4,600	299,642	56,526	21782,522	15845,079	0,866	148,389	0,000	152,709	7,350	19,123	510,244	26,472	517,536	162,412	3468,095
14,300	215190	14,282	4,600	300,237	56,526	21910,440	15863,963	0,865	148,454	0,000	152,631	7,454	18,863	504,249	26,315	511,645	162,606	3479,424
14,500	218443	14,483	4,600	300,832	56,526	22039,233	15883,377	0,864	148,516	0,000	152,543	7,557	18,610	498,486	26,165	505,985	162,805	3491,221
14,700	221702	14,685	4,600	301,428	56,526	22170,478	15905,030	0,864	148,574	0,000	152,432	7,660	18,366	493,106	26,024	500,709	163,027	3504,683

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	224964	14,887	4,600	302,023	56,526	22300,867	15925,643	0,863	148,629	0,000	152,327	7,763	18,126	487,783	25,888	495,491	163,238	3517,498
15,100	228231	15,088	4,600	302,618	56,526	22432,289	15947,057	0,862	148,682	0,000	152,211	7,867	17,893	482,689	25,758	490,500	163,457	3530,972
15,300	231502	15,290	4,600	303,213	56,526	22564,519	15969,115	0,861	148,731	0,000	152,086	7,970	17,666	477,798	25,634	485,713	163,683	3544,996
15,500	234778	15,492	4,600	303,808	56,526	22698,139	15991,945	0,861	148,777	0,000	151,952	8,074	17,444	473,129	25,516	481,149	163,917	3559,784
15,700	238059	15,695	4,600	304,403	56,526	22833,707	16016,000	0,860	148,820	0,000	151,801	8,178	17,228	468,721	25,404	476,845	164,164	3575,701
15,900	241344	15,897	4,600	304,982	56,526	22967,208	16038,172	0,859	148,860	0,000	151,662	8,281	17,014	464,270	25,294	472,498	164,391	3590,415
16,100	244634	16,099	4,600	305,559	56,526	23102,379	16061,409	0,858	148,896	0,000	151,514	8,385	16,807	460,036	25,190	468,368	164,629	3606,008
16,300	247929	16,301	4,600	306,135	56,526	23238,731	16085,778	0,858	148,930	0,000	151,355	8,489	16,605	456,013	25,092	464,450	164,879	3622,497
16,500	251229	16,504	4,600	306,712	56,526	23377,613	16112,484	0,857	148,961	0,000	151,173	8,593	16,412	452,292	25,003	460,832	165,153	3640,709
16,700	254534	16,706	4,600	307,288	56,526	23512,859	16135,174	0,856	148,988	0,000	151,025	8,697	16,220	448,319	24,915	456,964	165,386	3656,103
16,900	257843	16,909	4,600	307,865	56,526	23647,114	16156,433	0,855	149,014	0,000	150,888	8,801	16,033	444,316	24,832	453,065	165,603	3670,451
17,100	261157	17,110	4,600	308,441	56,526	23776,696	16172,466	0,855	149,037	0,000	150,797	8,905	15,848	439,960	24,751	448,815	165,768	3680,967
17,300	264473	17,311	4,600	308,903	56,526	23905,760	16187,116	0,854	149,058	0,000	150,718	9,009	15,668	435,568	24,676	444,527	165,918	3690,273
17,500	267793	17,512	4,600	308,918	56,526	24032,530	16198,886	0,855	149,078	0,000	150,662	9,113	15,491	431,036	24,603	440,100	166,039	3697,446
17,700	271114	17,713	4,600	308,932	56,526	24159,846	16210,920	0,856	149,097	0,000	150,602	9,218	15,319	426,632	24,535	435,800	166,162	3704,824
17,900	274438	17,914	4,600	308,946	56,526	24286,280	16221,882	0,857	149,115	0,000	150,550	9,322	15,150	422,245	24,470	431,518	166,274	3711,440
18,100	277765	18,115	4,600	308,951	56,526	24413,273	16233,185	0,857	149,132	0,000	150,494	9,426	14,986	417,987	24,410	427,365	166,390	3718,339
18,300	281093	18,315	4,600	308,956	56,526	24539,554	16243,573	0,858	149,148	0,000	150,445	9,530	14,824	413,757	24,353	423,239	166,497	3724,607
18,500	284424	18,516	4,600	308,961	56,526	24666,631	16254,762	0,859	149,163	0,000	150,387	9,634	14,667	409,687	24,299	419,273	166,611	3731,499
18,700	287757	18,717	4,600	308,966	56,526	24792,962	16264,927	0,860	149,177	0,000	150,337	9,738	14,513	405,628	24,249	415,320	166,715	3737,664

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	291092	18,918	4,600	308,971	56,526	24920,097	16276,076	0,860	149,190	0,000	150,277	9,842	14,363	401,737	24,203	411,533	166,830	3744,586
19,100	294429	19,119	4,600	308,976	56,526	25046,911	16286,619	0,861	149,202	0,000	150,221	9,946	14,215	397,887	24,160	407,788	166,938	3751,111
19,300	297769	19,320	4,600	308,981	56,526	25174,099	16297,604	0,862	149,213	0,000	150,161	10,050	14,071	394,156	24,120	404,161	167,050	3758,001
19,500	301110	19,520	4,600	308,986	56,526	25301,053	16308,240	0,863	149,223	0,000	150,103	10,154	13,930	390,480	24,083	400,589	167,159	3764,667
19,700	304454	19,721	4,600	308,991	56,526	25428,123	16318,935	0,863	149,233	0,000	150,044	10,258	13,793	386,886	24,049	397,099	167,269	3771,396
19,900	307801	19,922	4,600	308,996	56,526	25555,528	16330,171	0,864	149,241	0,000	149,980	10,362	13,658	383,407	24,018	393,725	167,384	3778,554
20,100	311149	20,123	4,600	308,998	56,526	25682,925	16341,154	0,865	149,249	0,000	149,917	10,466	13,526	379,983	23,990	390,405	167,497	3785,556
20,300	314500	20,324	4,600	308,999	56,526	25810,890	16352,941	0,865	149,256	0,000	149,848	10,570	13,397	376,688	23,966	387,214	167,618	3793,188
20,500	317853	20,525	4,600	308,999	56,526	25938,959	16364,425	0,866	149,262	0,000	149,779	10,674	13,271	373,438	23,944	384,069	167,735	3800,625
20,700	321209	20,727	4,600	309,000	56,526	26068,284	16376,632	0,867	149,267	0,000	149,703	10,778	13,148	370,306	23,924	381,041	167,860	3808,633
20,900	324567	20,928	4,600	309,001	56,526	26197,187	16389,301	0,867	149,271	0,000	149,622	10,882	13,028	367,266	23,908	378,106	167,990	3817,000
21,100	327928	21,129	4,600	309,002	56,526	26326,862	16402,611	0,868	149,274	0,000	149,535	10,986	12,910	364,331	23,895	375,275	168,127	3825,876
21,300	331292	21,330	4,600	309,003	56,526	26455,786	16415,089	0,869	149,276	0,000	149,456	11,090	12,794	361,400	23,883	372,448	168,255	3834,196
21,500	334658	21,531	4,600	309,004	56,526	26584,776	16427,145	0,869	149,278	0,000	149,380	11,194	12,679	358,505	23,872	369,657	168,378	3842,314
21,700	338026	21,733	4,600	309,004	56,526	26713,736	16439,071	0,870	149,278	0,000	149,304	11,298	12,566	355,659	23,863	366,916	168,500	3850,395
21,900	341397	21,934	4,600	309,006	56,526	26843,205	16451,554	0,871	149,278	0,000	149,223	11,402	12,455	352,906	23,856	364,267	168,628	3858,933
22,100	344771	22,135	4,600	309,007	56,526	26972,935	16464,000	0,871	149,277	0,000	149,142	11,506	12,346	350,206	23,851	361,672	168,756	3867,516
22,300	348147	22,336	4,600	309,008	56,526	27103,031	16476,965	0,872	149,276	0,000	149,056	11,610	12,239	347,592	23,848	359,162	168,889	3876,542


Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
KB
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
MTc
Immersion (TPc)
LCF
LCB
30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000 390000 420000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000 39000
Area m^2
117 120 123 126 129 132 135 138 141 144 147 150 153 156
Long. centre from zero pt. (+ve fwd) m
1 2 3 4 5 6 7 8 9 10 11 12 13 14
KB m
20 25 30 35 40 45 50 55 60 65 70 75 80 85
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600 2800
KM long. m
132 135 138 141 144 147 150 153 156 159 162 165 168 171
Immersion tonne/cm
2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800 3900
Moment to trim tonne.m
Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc

10.6 Fixed Trim = -1,15 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

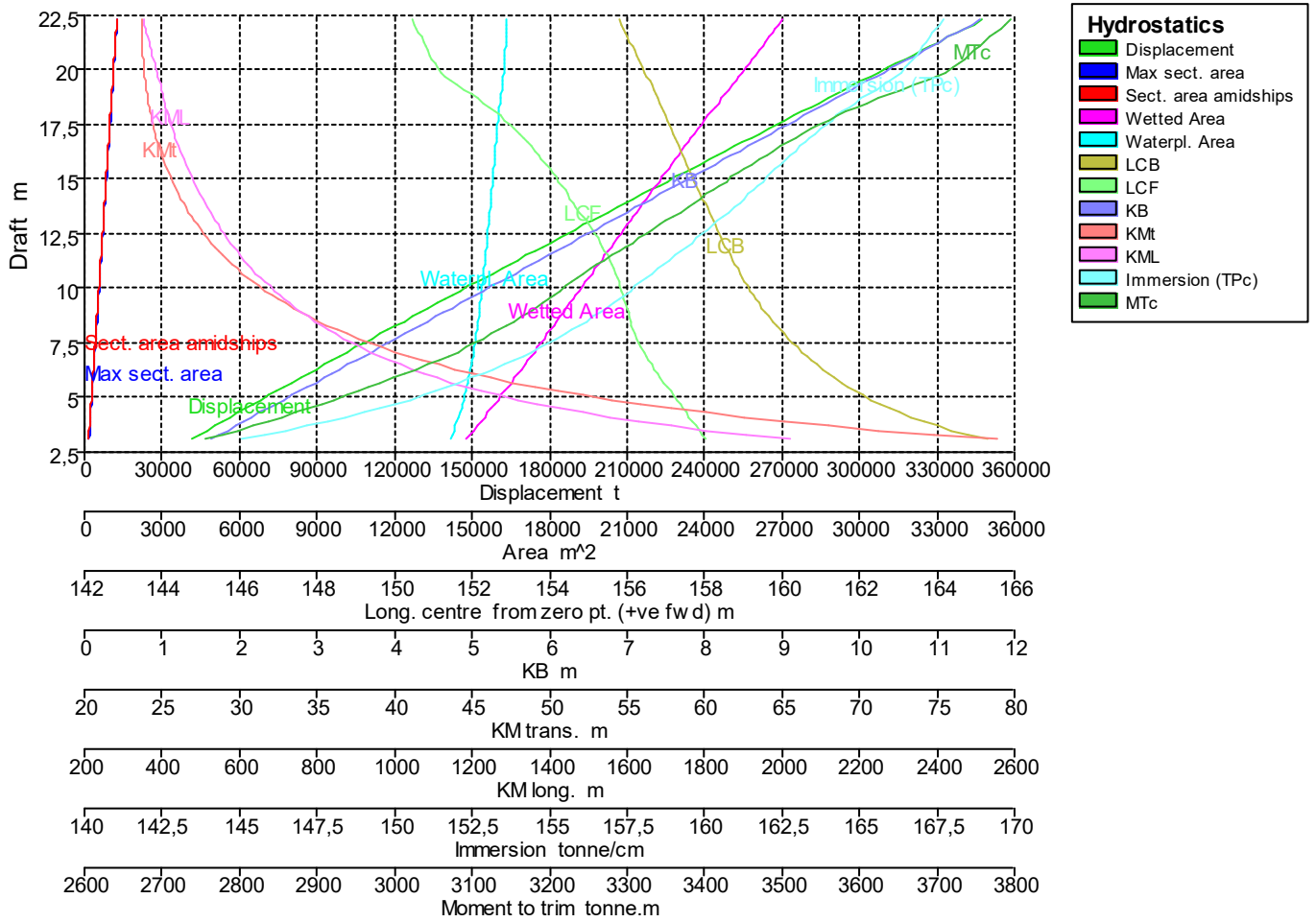
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	41716	3,125	-1,150	290,890	55,736	14801,501	14155,985	0,812	165,284	0,000	158,026	1,640	77,235	2021,720	78,874	2023,345	145,099	2756,429
3,300	44626	3,325	-1,150	291,002	55,872	14940,713	14225,509	0,814	164,808	0,000	157,947	1,743	73,044	1905,513	74,787	1907,242	145,811	2777,602
3,500	47549	3,524	-1,150	291,114	56,009	15078,726	14293,089	0,815	164,384	0,000	157,873	1,846	69,331	1802,575	71,177	1804,408	146,504	2798,116
3,700	50486	3,724	-1,150	291,226	56,146	15215,871	14359,374	0,817	164,003	0,000	157,795	1,950	66,030	1710,668	67,980	1712,606	147,184	2817,931
3,900	53436	3,924	-1,150	291,339	56,256	15351,952	14423,476	0,818	163,657	0,000	157,711	2,053	63,063	1627,959	65,116	1630,001	147,841	2836,879
4,100	56399	4,123	-1,150	291,503	56,336	15486,003	14482,055	0,819	163,342	0,000	157,609	2,157	60,343	1552,757	62,500	1554,903	148,441	2854,341
4,300	59373	4,323	-1,150	291,670	56,415	15619,270	14537,368	0,820	163,052	0,000	157,529	2,260	57,830	1484,947	60,090	1487,196	149,008	2872,173
4,500	62359	4,523	-1,150	291,839	56,489	15748,370	14589,485	0,821	162,786	0,000	157,457	2,364	55,523	1422,858	57,887	1425,212	149,542	2888,988
4,700	65355	4,722	-1,150	292,010	56,506	15879,416	14638,824	0,823	162,539	0,000	157,373	2,467	53,387	1366,118	55,854	1368,575	150,048	2905,583
4,900	68360	4,922	-1,150	292,180	56,522	16009,885	14684,242	0,824	162,310	0,000	157,286	2,571	51,388	1314,055	53,959	1316,617	150,513	2921,945
5,100	71375	5,122	-1,150	292,351	56,526	16139,787	14726,437	0,826	162,096	0,000	157,203	2,675	49,519	1266,066	52,193	1268,731	150,946	2937,961
5,300	74398	5,322	-1,150	292,509	56,526	16268,704	14765,146	0,828	161,895	0,000	157,127	2,778	47,764	1221,580	50,542	1224,350	151,343	2953,381
5,500	77428	5,521	-1,150	292,655	56,526	16395,340	14799,926	0,830	161,707	0,000	157,028	2,882	46,130	1179,670	49,011	1182,543	151,699	2966,821
5,700	80466	5,721	-1,150	293,133	56,526	16524,331	14837,080	0,831	161,529	0,000	156,951	2,985	44,612	1141,555	47,597	1144,532	152,080	2982,241
5,900	83512	5,921	-1,150	293,659	56,526	16653,898	14874,257	0,832	161,360	0,000	156,867	3,088	43,196	1106,257	46,284	1109,338	152,461	2998,078
6,100	86565	6,120	-1,150	294,184	56,526	16783,559	14910,739	0,833	161,200	0,000	156,783	3,192	41,868	1073,353	45,060	1076,537	152,835	3013,940
6,300	89625	6,320	-1,150	294,710	56,526	16912,106	14944,988	0,833	161,048	0,000	156,700	3,295	40,616	1042,306	43,911	1045,593	153,186	3028,928
6,500	92692	6,520	-1,150	294,881	56,526	17039,935	14977,524	0,835	160,903	0,000	156,623	3,399	39,435	1013,012	42,833	1016,404	153,520	3043,255
6,700	95765	6,719	-1,150	294,959	56,526	17167,070	15008,651	0,836	160,764	0,000	156,553	3,502	38,324	985,268	41,825	988,763	153,839	3056,776

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	98845	6,919	-1,150	295,037	56,526	17293,568	15038,407	0,838	160,632	0,000	156,490	3,605	37,276	958,963	40,881	962,561	154,144	3069,577
7,100	101931	7,119	-1,150	295,115	56,526	17419,724	15067,299	0,840	160,505	0,000	156,431	3,709	36,287	934,059	39,996	937,761	154,440	3081,949
7,300	105022	7,319	-1,150	295,193	56,526	17543,213	15092,275	0,841	160,384	0,000	156,346	3,812	35,352	909,838	39,164	913,643	154,696	3091,799
7,500	108119	7,518	-1,150	295,272	56,526	17668,666	15119,294	0,843	160,268	0,000	156,290	3,915	34,465	887,429	38,380	891,338	154,973	3103,348
7,700	111221	7,718	-1,150	295,350	56,526	17794,017	15145,734	0,844	160,156	0,000	156,238	4,019	33,623	866,181	37,642	870,194	155,244	3114,750
7,900	114329	7,918	-1,150	295,358	56,526	17918,927	15170,999	0,846	160,049	0,000	156,188	4,122	32,820	845,927	36,942	850,042	155,503	3125,716
8,100	117441	8,118	-1,150	295,196	56,526	18043,686	15194,094	0,848	159,946	0,000	156,154	4,225	32,051	826,438	36,276	830,657	155,739	3135,648
8,300	120558	8,318	-1,150	295,015	56,526	18168,357	15216,306	0,850	159,848	0,000	156,126	4,328	31,317	807,808	35,645	812,131	155,967	3145,138
8,500	123680	8,518	-1,150	294,833	56,526	18293,302	15238,303	0,852	159,754	0,000	156,101	4,432	30,618	790,078	35,050	794,504	156,193	3154,603
8,700	126806	8,718	-1,150	294,652	56,526	18417,602	15259,650	0,854	159,663	0,000	156,073	4,535	29,951	773,123	34,485	777,652	156,411	3163,788
8,900	129936	8,917	-1,150	294,471	56,526	18541,431	15280,695	0,856	159,576	0,000	156,041	4,638	29,313	756,931	33,951	761,563	156,627	3172,874
9,100	133071	9,117	-1,150	294,289	56,526	18665,179	15301,364	0,858	159,493	0,000	156,007	4,741	28,703	741,448	33,444	746,184	156,839	3181,854
9,300	136210	9,317	-1,150	294,200	56,526	18788,752	15321,648	0,859	159,412	0,000	155,974	4,844	28,119	726,622	32,963	731,461	157,047	3190,703
9,500	139353	9,517	-1,150	294,119	56,526	18911,050	15339,498	0,861	159,334	0,000	155,921	4,947	27,559	712,091	32,506	717,034	157,230	3197,947
9,700	142499	9,717	-1,150	294,037	56,526	19034,084	15357,953	0,862	159,258	0,000	155,886	5,051	27,021	698,318	32,071	703,364	157,419	3205,846
9,900	145649	9,917	-1,150	293,956	56,526	19157,012	15375,491	0,864	159,185	0,000	155,855	5,154	26,502	685,034	31,656	690,183	157,599	3213,335
10,100	148803	10,117	-1,150	293,874	56,526	19279,463	15392,487	0,865	159,114	0,000	155,823	5,257	26,002	672,296	31,258	677,548	157,773	3220,842
10,300	151960	10,316	-1,150	293,793	56,526	19401,512	15409,628	0,867	159,045	0,000	155,787	5,360	25,520	660,110	30,880	665,465	157,949	3228,564
10,500	155121	10,516	-1,150	293,712	56,526	19523,678	15426,867	0,868	158,979	0,000	155,749	5,463	25,058	648,423	30,520	653,881	158,125	3236,393
10,700	158285	10,716	-1,150	293,616	56,526	19646,035	15444,158	0,870	158,914	0,000	155,708	5,566	24,613	637,214	30,178	642,775	158,303	3244,379

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	161453	10,916	-1,150	293,634	56,526	19768,357	15461,683	0,871	158,850	0,000	155,662	5,669	24,182	626,493	29,851	632,158	158,482	3252,718
11,100	164625	11,116	-1,150	293,665	56,526	19890,850	15479,904	0,872	158,788	0,000	155,608	5,772	23,767	616,284	29,539	622,052	158,669	3261,688
11,300	167800	11,316	-1,150	293,695	56,526	20013,364	15497,864	0,873	158,728	0,000	155,553	5,875	23,366	606,432	29,241	612,303	158,853	3270,593
11,500	170979	11,515	-1,150	293,725	56,526	20136,439	15516,258	0,874	158,668	0,000	155,491	5,978	22,978	597,004	28,956	602,978	159,042	3279,919
11,700	174162	11,715	-1,150	293,756	56,526	20259,524	15534,296	0,875	158,610	0,000	155,427	6,081	22,603	587,883	28,684	593,959	159,227	3289,121
11,900	177348	11,915	-1,150	293,786	56,526	20382,450	15551,851	0,876	158,552	0,000	155,364	6,184	22,240	579,034	28,424	585,214	159,406	3298,095
12,100	180538	12,115	-1,150	293,816	56,526	20505,040	15568,728	0,876	158,495	0,000	155,304	6,287	21,888	570,423	28,175	576,706	159,579	3306,710
12,300	183732	12,314	-1,150	293,847	56,526	20627,752	15585,441	0,877	158,439	0,000	155,240	6,390	21,547	562,095	27,937	568,481	159,751	3315,310
12,500	186928	12,514	-1,150	293,877	56,526	20750,387	15601,813	0,878	158,384	0,000	155,176	6,493	21,217	554,014	27,710	560,503	159,919	3323,759
12,700	190129	12,714	-1,150	293,907	56,526	20873,847	15618,755	0,879	158,330	0,000	155,103	6,596	20,897	546,271	27,493	552,863	160,092	3332,712
12,900	193333	12,914	-1,150	293,972	56,526	20997,593	15635,750	0,880	158,276	0,000	155,025	6,699	20,587	538,789	27,286	545,485	160,266	3341,775
13,100	196540	13,113	-1,150	294,184	56,526	21120,950	15652,526	0,880	158,222	0,000	154,942	6,802	20,287	531,524	27,089	538,323	160,438	3350,741
13,300	199750	13,313	-1,150	294,396	56,526	21244,886	15669,451	0,881	158,169	0,000	154,861	6,905	19,996	524,505	26,901	531,407	160,612	3359,868
13,500	202964	13,513	-1,150	294,608	56,526	21369,402	15686,791	0,881	158,116	0,000	154,775	7,008	19,714	517,749	26,722	524,753	160,790	3369,346
13,700	206182	13,712	-1,150	294,819	56,526	21494,348	15704,460	0,881	158,063	0,000	154,684	7,111	19,441	511,230	26,553	518,338	160,971	3379,092
13,900	209403	13,912	-1,150	295,031	56,526	21618,236	15720,857	0,881	158,010	0,000	154,603	7,214	19,176	504,776	26,390	511,987	161,139	3387,979
14,100	212627	14,112	-1,150	295,243	56,526	21740,176	15734,633	0,882	157,958	0,000	154,542	7,317	18,915	498,268	26,232	505,582	161,280	3395,183
14,300	215854	14,312	-1,150	295,455	56,526	21862,104	15747,771	0,882	157,907	0,000	154,484	7,421	18,660	491,911	26,080	499,328	161,415	3402,143
14,500	219084	14,511	-1,150	295,667	56,526	21986,269	15762,713	0,882	157,856	0,000	154,407	7,524	18,412	485,926	25,936	493,446	161,568	3410,509
14,700	222317	14,711	-1,150	295,879	56,526	22110,991	15777,837	0,882	157,805	0,000	154,324	7,627	18,170	480,140	25,796	487,764	161,723	3419,128

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	225553	14,911	-1,150	296,091	56,526	22237,345	15794,260	0,882	157,754	0,000	154,226	7,730	17,932	474,656	25,662	482,383	161,891	3428,834
15,100	228792	15,110	-1,150	296,298	56,526	22358,100	15804,853	0,883	157,704	0,000	154,181	7,833	17,700	468,769	25,533	476,598	162,000	3434,381
15,300	232033	15,310	-1,150	296,500	56,526	22483,444	15820,154	0,883	157,654	0,000	154,090	7,936	17,474	463,497	25,410	471,429	162,157	3443,438
15,500	235278	15,510	-1,150	296,703	56,526	22607,641	15833,871	0,883	157,605	0,000	154,013	8,039	17,255	458,213	25,294	466,249	162,297	3451,350
15,700	238525	15,709	-1,150	296,905	56,526	22732,994	15848,490	0,883	157,555	0,000	153,925	8,142	17,042	453,154	25,184	461,293	162,447	3459,962
15,900	241776	15,909	-1,150	297,338	56,526	22862,569	15867,343	0,883	157,506	0,000	153,797	8,245	16,836	448,610	25,081	456,852	162,640	3471,674
16,100	245030	16,109	-1,150	297,876	56,526	22987,301	15881,277	0,882	157,456	0,000	153,714	8,348	16,633	443,744	24,982	452,089	162,783	3479,867
16,300	248287	16,308	-1,150	298,415	56,526	23112,968	15896,026	0,881	157,406	0,000	153,621	8,451	16,436	439,076	24,887	447,524	162,934	3488,711
16,500	251548	16,508	-1,150	298,953	56,526	23238,978	15910,886	0,880	157,356	0,000	153,527	8,555	16,243	434,537	24,798	443,089	163,087	3497,687
16,700	254811	16,708	-1,150	299,492	56,526	23365,817	15926,421	0,879	157,307	0,000	153,426	8,658	16,055	430,170	24,713	438,825	163,246	3507,195
16,900	258078	16,907	-1,150	300,030	56,526	23492,742	15941,892	0,878	157,257	0,000	153,324	8,761	15,871	425,906	24,632	434,664	163,404	3516,703
17,100	261347	17,107	-1,150	300,568	56,526	23619,927	15957,468	0,878	157,207	0,000	153,221	8,864	15,692	421,755	24,556	430,616	163,564	3526,336
17,300	264621	17,306	-1,150	301,103	56,526	23749,666	15975,535	0,877	157,157	0,000	153,095	8,967	15,518	417,909	24,485	426,873	163,749	3537,798
17,500	267897	17,506	-1,150	301,637	56,526	23878,488	15992,297	0,876	157,107	0,000	152,980	9,070	15,346	414,063	24,417	423,130	163,921	3548,509
17,700	271178	17,705	-1,150	302,171	56,526	24008,170	16009,532	0,875	157,056	0,000	152,857	9,174	15,178	410,356	24,351	419,527	164,098	3559,699
17,900	274461	17,905	-1,150	302,706	56,526	24138,548	16026,931	0,874	157,005	0,000	152,732	9,277	15,012	406,763	24,289	416,037	164,276	3571,184
18,100	277749	18,104	-1,150	303,240	56,526	24269,862	16045,064	0,873	156,954	0,000	152,599	9,380	14,849	403,315	24,230	412,693	164,462	3583,295
18,300	281040	18,304	-1,150	303,774	56,526	24402,907	16064,865	0,873	156,902	0,000	152,451	9,484	14,692	400,078	24,175	409,559	164,665	3596,678
18,500	284336	18,503	-1,150	304,309	56,526	24536,935	16085,463	0,872	156,850	0,000	152,295	9,587	14,538	396,977	24,125	406,561	164,876	3610,715
18,700	287635	18,703	-1,150	304,843	56,526	24670,237	16105,167	0,871	156,797	0,000	152,147	9,690	14,386	393,882	24,076	403,569	165,078	3624,210

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	290939	18,902	-1,150	305,377	56,526	24804,575	16125,901	0,870	156,743	0,000	151,989	9,794	14,238	390,934	24,032	400,725	165,290	3638,520
19,100	294247	19,101	-1,150	305,912	56,526	24941,099	16148,782	0,869	156,689	0,000	151,812	9,897	14,095	388,209	23,992	398,104	165,525	3654,431
19,300	297561	19,301	-1,150	306,447	56,526	25079,788	16173,666	0,868	156,633	0,000	151,616	10,001	13,957	385,687	23,958	395,686	165,780	3671,825
19,500	300878	19,500	-1,150	306,982	56,526	25212,743	16192,625	0,868	156,577	0,000	151,474	10,105	13,818	382,790	23,923	392,892	165,974	3685,019
19,700	304200	19,700	-1,150	307,516	56,526	25346,960	16212,589	0,867	156,521	0,000	151,324	10,208	13,683	380,021	23,891	390,226	166,179	3698,931
19,900	307525	19,899	-1,150	308,051	56,526	25477,344	16228,386	0,866	156,464	0,000	151,212	10,312	13,549	377,005	23,861	387,314	166,341	3709,799
20,100	310854	20,099	-1,150	308,588	56,526	25607,590	16243,533	0,865	156,407	0,000	151,109	10,416	13,418	373,991	23,834	384,404	166,496	3720,097
20,300	314185	20,298	-1,150	308,995	56,526	25734,876	16255,091	0,864	156,351	0,000	151,040	10,520	13,290	370,769	23,809	381,286	166,615	3727,620
20,500	317519	20,498	-1,150	309,004	56,526	25862,392	16266,466	0,865	156,295	0,000	150,973	10,623	13,164	367,593	23,787	378,214	166,731	3734,969
20,700	320855	20,698	-1,150	309,014	56,526	25988,968	16276,670	0,866	156,239	0,000	150,917	10,727	13,040	364,401	23,767	375,125	166,836	3741,495
20,900	324193	20,898	-1,150	309,023	56,526	26116,170	16287,350	0,866	156,184	0,000	150,856	10,831	12,919	361,306	23,749	372,134	166,945	3748,406
21,100	327533	21,098	-1,150	309,039	56,526	26242,662	16297,116	0,867	156,130	0,000	150,804	10,934	12,800	358,211	23,734	369,143	167,045	3754,685
21,300	330875	21,297	-1,150	309,061	56,526	26369,869	16307,695	0,867	156,076	0,000	150,745	11,038	12,683	355,232	23,721	366,268	167,154	3761,589
21,500	334219	21,497	-1,150	309,084	56,526	26496,452	16317,463	0,868	156,022	0,000	150,692	11,142	12,569	352,256	23,711	363,395	167,254	3767,919
21,700	337566	21,697	-1,150	309,106	56,526	26623,650	16327,995	0,869	155,969	0,000	150,631	11,245	12,457	349,388	23,703	360,631	167,362	3774,840
21,900	340914	21,897	-1,150	309,129	56,526	26750,799	16338,357	0,869	155,917	0,000	150,573	11,349	12,348	346,564	23,697	357,910	167,468	3781,662
22,100	344265	22,096	-1,150	309,151	56,526	26878,023	16348,782	0,870	155,864	0,000	150,513	11,453	12,240	343,796	23,693	355,246	167,575	3788,556
22,300	347618	22,296	-1,150	309,182	56,526	27005,313	16359,302	0,870	155,813	0,000	150,453	11,556	12,135	341,088	23,691	352,641	167,683	3795,560


Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
LCF
KB
LCB
MTc
Immersion (TPc)
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
0 30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000
Area m^2
142 144 146 148 150 152 154 156 158 160 162 164 166
Long. centre from zero pt. (+ve fwd) m
0 1 2 3 4 5 6 7 8 9 10 11 12
KB m
20 25 30 35 40 45 50 55 60 65 70 75 80
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600
KM long. m
140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5 170
Immersion tonne/cm
2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800
Moment to trim tonne.m
Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc

10.7 Fixed Trim = -2,3 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

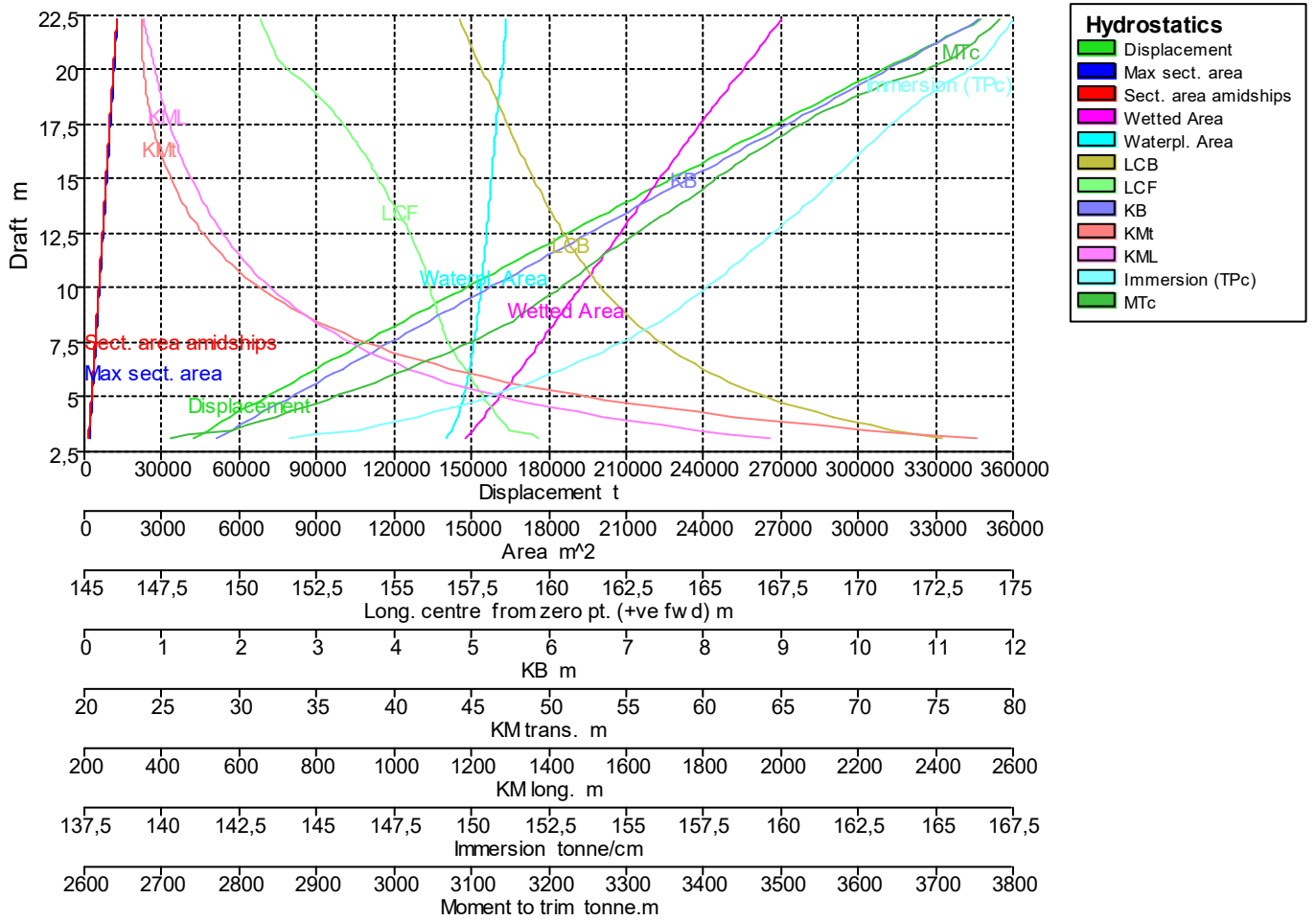
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	42128	3,162	-2,300	291,159	55,912	14792,295	14062,106	0,819	172,738	0,000	159,634	1,697	75,960	1969,447	77,655	1971,088	144,137	2710,831
3,300	45018	3,361	-2,300	291,272	56,049	14935,128	14135,472	0,820	171,891	0,000	159,496	1,798	71,975	1858,955	73,770	1860,699	144,889	2732,749
3,500	47929	3,555	-2,300	291,384	56,185	15074,631	14275,596	0,821	171,116	0,000	158,702	1,898	68,650	1783,318	70,547	1785,165	146,325	2789,937
3,700	50862	3,754	-2,300	291,497	56,277	15212,071	14340,966	0,822	170,397	0,000	158,594	2,000	65,392	1693,413	67,390	1695,364	146,995	2809,892
3,900	53808	3,953	-2,300	291,612	56,357	15347,592	14402,672	0,823	169,747	0,000	158,483	2,101	62,444	1612,257	64,543	1614,312	147,627	2828,673
4,100	56767	4,153	-2,300	291,728	56,436	15482,420	14462,353	0,823	169,157	0,000	158,371	2,203	59,768	1539,070	61,969	1541,228	148,239	2847,238
4,300	59737	4,352	-2,300	291,845	56,494	15616,302	14519,363	0,825	168,618	0,000	158,262	2,305	57,321	1472,591	59,624	1474,853	148,823	2865,329
4,500	62719	4,551	-2,300	291,976	56,510	15748,967	14571,638	0,826	168,122	0,000	158,156	2,407	55,046	1411,758	57,452	1414,125	149,359	2882,609
4,700	65711	4,750	-2,300	292,137	56,526	15880,255	14619,612	0,827	167,666	0,000	158,057	2,509	52,925	1355,919	55,433	1358,389	149,851	2899,214
4,900	68713	4,949	-2,300	292,286	56,526	16010,832	14664,546	0,828	167,243	0,000	157,959	2,611	50,954	1304,541	53,564	1307,115	150,312	2915,334
5,100	71723	5,149	-2,300	292,426	56,526	16136,676	14704,126	0,830	166,850	0,000	157,836	2,714	49,117	1256,405	51,829	1259,083	150,717	2929,312
5,300	74741	5,348	-2,300	292,567	56,526	16266,665	14744,711	0,832	166,484	0,000	157,745	2,816	47,403	1212,777	50,217	1215,558	151,133	2945,195
5,500	77768	5,547	-2,300	292,708	56,526	16395,914	14782,973	0,834	166,143	0,000	157,660	2,918	45,797	1172,253	48,714	1175,138	151,525	2960,683
5,700	80802	5,747	-2,300	292,848	56,526	16524,261	14819,211	0,835	165,822	0,000	157,576	3,021	44,295	1134,425	47,314	1137,414	151,897	2975,563
5,900	83843	5,946	-2,300	292,989	56,526	16652,261	14854,515	0,837	165,521	0,000	157,490	3,123	42,894	1099,102	46,016	1102,193	152,259	2990,077
6,100	86892	6,145	-2,300	293,188	56,526	16780,136	14889,123	0,839	165,238	0,000	157,402	3,226	41,585	1066,095	44,809	1069,290	152,614	3004,413
6,300	89947	6,344	-2,300	293,710	56,526	16908,212	14923,540	0,839	164,970	0,000	157,309	3,328	40,357	1035,317	43,684	1038,615	152,966	3018,979
6,500	93010	6,544	-2,300	294,231	56,526	17036,568	14957,458	0,839	164,716	0,000	157,213	3,431	39,200	1006,528	42,630	1009,930	153,314	3033,693
6,700	96079	6,743	-2,300	294,753	56,526	17162,173	14986,556	0,840	164,474	0,000	157,090	3,534	38,104	978,644	41,636	982,149	153,612	3045,689

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	99155	6,942	-2,300	295,260	56,526	17289,541	15017,704	0,840	164,244	0,000	157,001	3,636	37,067	952,990	40,702	956,599	153,931	3059,542
7,100	102236	7,142	-2,300	295,339	56,526	17416,777	15048,131	0,841	164,024	0,000	156,917	3,739	36,088	928,718	39,826	932,431	154,243	3073,059
7,300	105324	7,341	-2,300	295,417	56,526	17543,228	15077,080	0,843	163,815	0,000	156,841	3,842	35,162	905,567	39,002	909,383	154,540	3085,734
7,500	108418	7,540	-2,300	295,495	56,526	17669,273	15105,061	0,844	163,615	0,000	156,771	3,944	34,284	883,537	38,228	887,456	154,827	3097,888
7,700	111517	7,740	-2,300	295,554	56,526	17795,022	15132,180	0,846	163,424	0,000	156,707	4,047	33,451	862,578	37,497	866,600	155,105	3109,666
7,900	114622	7,939	-2,300	295,612	56,526	17920,652	15158,705	0,847	163,241	0,000	156,649	4,150	32,659	842,662	36,808	846,787	155,377	3121,270
8,100	117732	8,139	-2,300	295,670	56,526	18045,853	15184,191	0,848	163,066	0,000	156,592	4,253	31,903	823,637	36,155	827,866	155,638	3132,418
8,300	120847	8,339	-2,300	295,727	56,526	18170,485	15208,403	0,850	162,898	0,000	156,536	4,355	31,181	805,426	35,535	809,758	155,886	3143,060
8,500	123967	8,538	-2,300	295,658	56,526	18294,677	15231,133	0,851	162,738	0,000	156,488	4,458	30,487	787,939	34,944	792,375	156,119	3153,066
8,700	127092	8,738	-2,300	295,475	56,526	18418,988	15252,467	0,853	162,584	0,000	156,450	4,561	29,824	771,078	34,384	775,616	156,338	3162,226
8,900	130220	8,938	-2,300	295,293	56,526	18542,223	15271,083	0,855	162,436	0,000	156,393	4,664	29,190	754,574	33,853	759,216	156,529	3169,564
9,100	133353	9,137	-2,300	295,111	56,526	18666,093	15290,576	0,857	162,293	0,000	156,353	4,766	28,584	739,002	33,349	743,747	156,728	3177,708
9,300	136489	9,337	-2,300	294,929	56,526	18789,539	15310,112	0,859	162,156	0,000	156,308	4,869	28,003	724,150	32,872	728,998	156,929	3185,993
9,500	139630	9,537	-2,300	294,746	56,526	18912,723	15329,269	0,861	162,024	0,000	156,264	4,972	27,447	709,915	32,418	714,866	157,125	3194,156
9,700	142774	9,736	-2,300	294,583	56,526	19035,933	15348,167	0,862	161,897	0,000	156,220	5,075	26,913	696,273	31,986	701,328	157,319	3202,275
9,900	145922	9,936	-2,300	294,501	56,526	19158,884	15366,722	0,864	161,774	0,000	156,175	5,177	26,400	683,180	31,576	688,338	157,509	3210,308
10,100	149074	10,136	-2,300	294,408	56,526	19281,777	15384,642	0,865	161,655	0,000	156,134	5,280	25,906	670,568	31,185	675,829	157,693	3218,092
10,300	152230	10,335	-2,300	294,303	56,526	19404,613	15401,447	0,867	161,540	0,000	156,099	5,383	25,428	658,370	30,810	663,734	157,865	3225,427
10,500	155389	10,535	-2,300	294,198	56,526	19527,382	15417,544	0,868	161,429	0,000	156,067	5,485	24,967	646,599	30,452	652,066	158,030	3232,501
10,700	158551	10,735	-2,300	294,093	56,526	19649,634	15434,067	0,870	161,322	0,000	156,030	5,588	24,523	635,350	30,111	640,920	158,199	3239,948

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	161717	10,934	-2,300	293,988	56,526	19771,678	15450,577	0,871	161,218	0,000	155,989	5,691	24,097	624,534	29,787	630,207	158,368	3247,442
11,100	164886	11,134	-2,300	293,883	56,526	19893,879	15467,097	0,872	161,117	0,000	155,945	5,794	23,685	614,138	29,478	619,914	158,538	3255,050
11,300	168058	11,334	-2,300	293,805	56,526	20016,010	15483,089	0,874	161,019	0,000	155,900	5,896	23,286	604,086	29,182	609,965	158,702	3262,482
11,500	171234	11,533	-2,300	293,836	56,526	20138,262	15499,974	0,875	160,924	0,000	155,844	5,999	22,900	594,532	28,899	600,513	158,875	3270,704
11,700	174413	11,733	-2,300	293,866	56,526	20260,488	15516,851	0,876	160,831	0,000	155,782	6,102	22,527	585,330	28,628	591,414	159,048	3279,040
11,900	177596	11,932	-2,300	293,896	56,526	20382,896	15533,696	0,876	160,740	0,000	155,716	6,204	22,166	576,457	28,370	582,645	159,220	3287,461
12,100	180782	12,132	-2,300	293,927	56,526	20505,736	15550,757	0,877	160,651	0,000	155,645	6,307	21,816	567,927	28,123	574,218	159,395	3296,151
12,300	183972	12,331	-2,300	293,955	56,526	20628,450	15567,382	0,878	160,564	0,000	155,573	6,410	21,477	559,646	27,886	566,040	159,566	3304,638
12,500	187165	12,531	-2,300	293,967	56,526	20750,262	15583,171	0,879	160,478	0,000	155,500	6,513	21,149	551,554	27,661	558,050	159,728	3312,630
12,700	190361	12,730	-2,300	293,979	56,526	20872,541	15598,895	0,880	160,394	0,000	155,432	6,615	20,830	543,731	27,445	550,330	159,889	3320,682
12,900	193561	12,930	-2,300	293,990	56,526	20994,986	15614,633	0,881	160,311	0,000	155,362	6,718	20,521	536,168	27,239	542,871	160,050	3328,826
13,100	196763	13,129	-2,300	294,002	56,526	21117,407	15630,166	0,882	160,230	0,000	155,292	6,821	20,222	528,830	27,042	535,635	160,209	3336,900
13,300	199969	13,329	-2,300	294,014	56,526	21240,918	15646,587	0,883	160,151	0,000	155,211	6,923	19,932	521,822	26,855	528,730	160,378	3345,685
13,500	203178	13,528	-2,300	294,122	56,526	21364,639	15663,040	0,883	160,072	0,000	155,128	7,026	19,650	515,035	26,676	522,047	160,546	3354,548
13,700	206390	13,727	-2,300	294,333	56,526	21488,387	15679,366	0,883	159,994	0,000	155,043	7,129	19,377	508,443	26,505	515,557	160,714	3363,371
13,900	209606	13,927	-2,300	294,544	56,526	21612,257	15695,657	0,884	159,918	0,000	154,957	7,232	19,112	502,044	26,343	509,261	160,880	3372,211
14,100	212826	14,126	-2,300	294,755	56,526	21736,732	15712,320	0,884	159,842	0,000	154,863	7,335	18,855	495,871	26,189	503,192	161,051	3381,361
14,300	216048	14,325	-2,300	294,967	56,526	21861,575	15729,253	0,884	159,767	0,000	154,766	7,437	18,606	489,903	26,043	497,327	161,225	3390,732
14,500	219274	14,525	-2,300	295,175	56,526	21984,654	15743,789	0,884	159,693	0,000	154,688	7,540	18,361	483,893	25,901	491,419	161,374	3398,598
14,700	222503	14,724	-2,300	295,376	56,526	22105,947	15755,872	0,884	159,620	0,000	154,629	7,643	18,120	477,836	25,763	485,465	161,498	3404,908

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	225734	14,924	-2,300	295,578	56,526	22229,461	15769,806	0,885	159,548	0,000	154,552	7,746	17,886	472,139	25,632	479,871	161,641	3412,664
15,100	228968	15,123	-2,300	295,779	56,526	22352,301	15782,655	0,885	159,477	0,000	154,482	7,849	17,657	466,504	25,505	474,339	161,772	3419,741
15,300	232205	15,322	-2,300	295,981	56,526	22478,820	15798,935	0,885	159,406	0,000	154,379	7,951	17,434	461,356	25,385	469,294	161,939	3429,417
15,500	235445	15,522	-2,300	296,182	56,526	22602,611	15812,215	0,885	159,337	0,000	154,302	8,054	17,214	456,074	25,268	464,115	162,075	3437,017
15,700	238688	15,721	-2,300	296,384	56,526	22723,313	15822,271	0,885	159,268	0,000	154,253	8,157	17,000	450,638	25,157	458,782	162,178	3442,329
15,900	241933	15,920	-2,300	296,585	56,526	22850,334	15838,853	0,885	159,200	0,000	154,143	8,260	16,792	445,944	25,051	454,191	162,348	3452,465
16,100	245181	16,120	-2,300	296,787	56,526	22973,603	15851,224	0,886	159,133	0,000	154,072	8,363	16,590	440,986	24,952	449,336	162,475	3459,515
16,300	248432	16,319	-2,300	296,988	56,526	23099,754	15866,223	0,886	159,066	0,000	153,974	8,465	16,394	436,390	24,858	444,843	162,629	3468,538
16,500	251687	16,518	-2,300	297,496	56,526	23228,504	15884,080	0,885	158,999	0,000	153,851	8,568	16,203	432,154	24,771	440,710	162,812	3479,638
16,700	254944	16,718	-2,300	298,025	56,526	23353,517	15898,084	0,884	158,933	0,000	153,762	8,671	16,016	427,692	24,687	436,351	162,955	3487,997
16,900	258205	16,917	-2,300	298,554	56,526	23479,364	15912,690	0,883	158,867	0,000	153,668	8,774	15,833	423,394	24,607	432,156	163,105	3496,845
17,100	261468	17,116	-2,300	299,083	56,526	23605,195	15927,096	0,882	158,802	0,000	153,573	8,877	15,655	419,183	24,532	428,048	163,253	3505,588
17,300	264735	17,315	-2,300	299,612	56,526	23732,506	15942,883	0,882	158,736	0,000	153,465	8,980	15,481	415,188	24,460	424,156	163,415	3515,373
17,500	268005	17,515	-2,300	300,141	56,526	23859,132	15957,798	0,881	158,672	0,000	153,365	9,083	15,310	411,217	24,393	420,288	163,567	3524,574
17,700	271278	17,714	-2,300	300,670	56,526	23986,357	15973,128	0,880	158,607	0,000	153,260	9,186	15,144	407,376	24,329	416,550	163,725	3534,136
17,900	274554	17,913	-2,300	301,199	56,526	24116,350	15990,903	0,879	158,542	0,000	153,132	9,289	14,981	403,830	24,270	413,107	163,907	3545,617
18,100	277834	18,112	-2,300	301,728	56,526	24245,208	16007,273	0,878	158,478	0,000	153,017	9,392	14,821	400,265	24,212	409,645	164,075	3556,227
18,300	281117	18,311	-2,300	302,257	56,526	24375,077	16024,228	0,877	158,413	0,000	152,894	9,495	14,663	396,838	24,157	406,322	164,248	3567,408
18,500	284404	18,510	-2,300	302,787	56,526	24505,551	16041,452	0,876	158,349	0,000	152,769	9,598	14,508	393,516	24,106	403,103	164,425	3578,895
18,700	287695	18,709	-2,300	303,316	56,526	24637,212	16059,768	0,875	158,284	0,000	152,633	9,701	14,357	390,353	24,058	400,043	164,613	3591,246

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	290989	18,908	-2,300	303,845	56,526	24771,595	16080,772	0,875	158,220	0,000	152,473	9,804	14,211	387,463	24,015	397,255	164,828	3605,591
19,100	294288	19,107	-2,300	304,375	56,526	24904,143	16099,749	0,874	158,155	0,000	152,331	9,907	14,066	384,490	23,973	394,386	165,022	3618,588
19,300	297590	19,306	-2,300	304,904	56,526	25037,649	16119,601	0,873	158,089	0,000	152,182	10,010	13,924	381,647	23,934	391,647	165,226	3632,289
19,500	300897	19,504	-2,300	305,435	56,526	25172,151	16140,482	0,872	158,024	0,000	152,025	10,114	13,786	378,942	23,899	389,045	165,440	3646,805
19,700	304208	19,703	-2,300	305,972	56,526	25309,703	16164,383	0,871	157,957	0,000	151,841	10,217	13,654	376,508	23,870	386,714	165,685	3663,535
19,900	307524	19,902	-2,300	306,509	56,526	25447,165	16188,002	0,870	157,891	0,000	151,660	10,320	13,524	374,104	23,844	384,414	165,927	3680,124
20,100	310845	20,101	-2,300	307,047	56,526	25580,239	16207,038	0,869	157,823	0,000	151,521	10,424	13,394	371,427	23,817	381,840	166,122	3693,451
20,300	314170	20,299	-2,300	307,584	56,526	25714,023	16226,479	0,868	157,756	0,000	151,379	10,527	13,267	368,827	23,794	379,343	166,321	3707,063
20,500	317498	20,499	-2,300	308,127	56,526	25844,905	16242,708	0,868	157,689	0,000	151,266	10,631	13,142	366,050	23,772	376,670	166,488	3718,317
20,700	320830	20,698	-2,300	308,677	56,526	25974,503	16257,134	0,867	157,621	0,000	151,170	10,734	13,019	363,191	23,753	373,915	166,636	3728,161
20,900	324164	20,897	-2,300	309,089	56,526	26101,989	16268,896	0,866	157,555	0,000	151,099	10,838	12,898	360,191	23,736	371,019	166,756	3735,910
21,100	327500	21,097	-2,300	309,111	56,526	26229,206	16279,825	0,867	157,489	0,000	151,036	10,941	12,780	357,190	23,721	368,121	166,868	3743,032
21,300	330839	21,296	-2,300	309,134	56,526	26355,915	16290,053	0,867	157,423	0,000	150,978	11,045	12,663	354,203	23,708	365,237	166,973	3749,698
21,500	334179	21,496	-2,300	309,156	56,526	26483,033	16300,486	0,868	157,359	0,000	150,918	11,148	12,549	351,287	23,697	362,425	167,080	3756,544
21,700	337522	21,696	-2,300	309,186	56,526	26609,584	16310,238	0,868	157,295	0,000	150,864	11,252	12,437	348,382	23,688	359,623	167,180	3762,903
21,900	340867	21,895	-2,300	309,219	56,526	26736,847	16320,738	0,869	157,232	0,000	150,804	11,355	12,327	345,581	23,682	356,926	167,288	3769,840
22,100	344214	22,095	-2,300	309,251	56,526	26863,502	16330,282	0,869	157,169	0,000	150,750	11,458	12,219	342,775	23,677	354,223	167,385	3776,148
22,300	347563	22,294	-2,300	309,283	56,526	26990,862	16340,463	0,870	157,107	0,000	150,685	11,562	12,113	340,068	23,675	351,620	167,490	3783,021


Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc
Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
LCF
KB
LCB
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
MTc
Immersion (TPc)
0 30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000
Area m^2
145 147,5 150 152,5 155 157,5 160 162,5 165 167,5 170 172,5 175
Long. centre from zero pt. (+ve fwd) m
0 1 2 3 4 5 6 7 8 9 10 11 12
KB m
20 25 30 35 40 45 50 55 60 65 70 75 80
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600
KM long. m
137,5 140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5
Immersion tonne/cm
2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800
Moment to trim tonne.m

10.8 Fixed Trim = -3,45 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

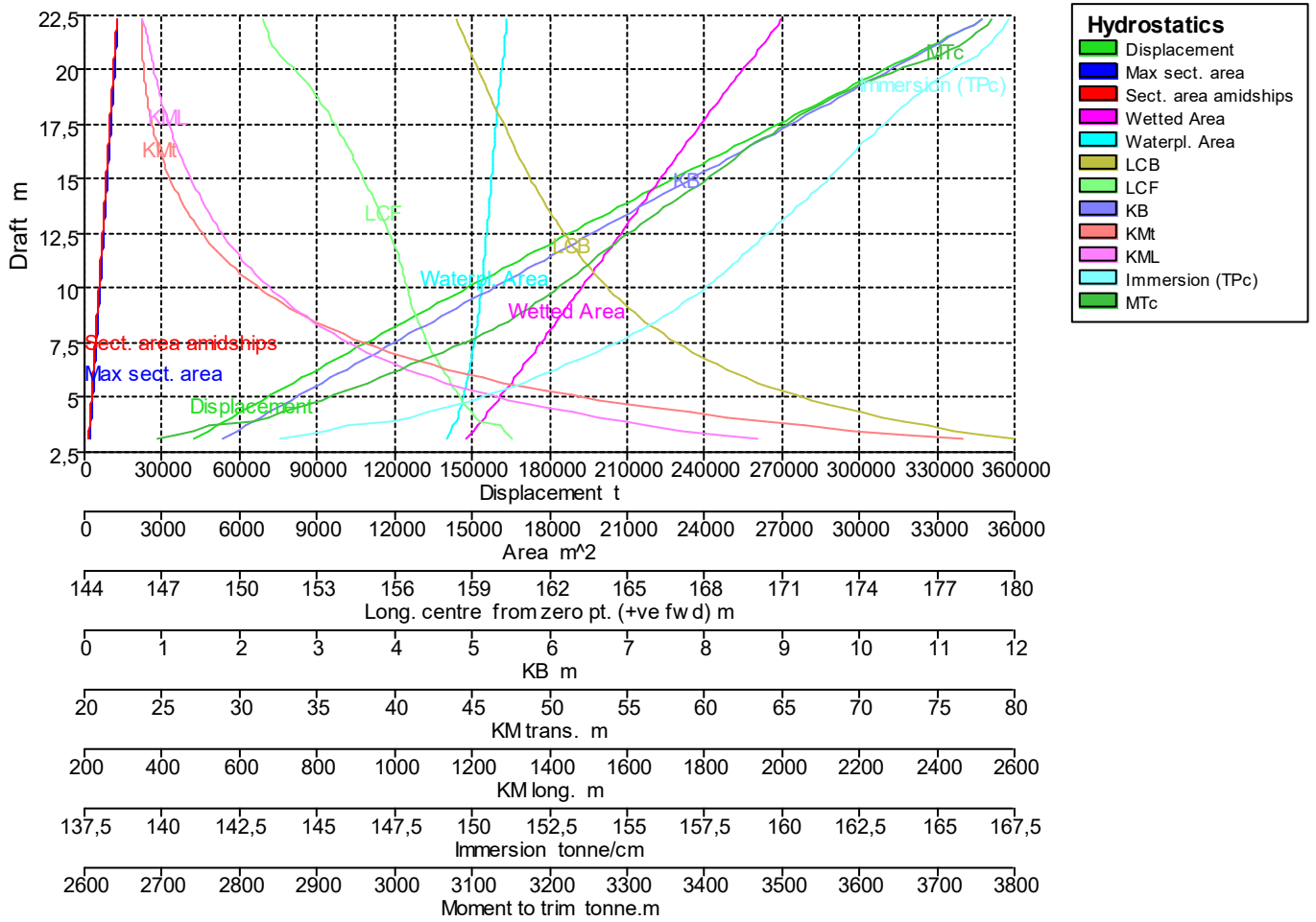
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	42600	3,204	-3,450	291,442	56,090	14775,626	14030,200	0,828	179,963	0,000	160,577	1,784	74,867	1936,733	76,645	1938,391	143,810	2695,120
3,300	45484	3,402	-3,450	291,549	56,221	14919,931	14105,613	0,828	178,728	0,000	160,399	1,880	71,010	1830,363	72,885	1832,124	144,583	2717,999
3,500	48383	3,600	-3,450	291,666	56,301	15062,137	14176,354	0,828	177,624	0,000	160,229	1,977	67,537	1735,538	69,510	1737,403	145,308	2739,927
3,700	51296	3,798	-3,450	291,783	56,381	15202,340	14242,806	0,828	176,631	0,000	160,071	2,075	64,395	1650,363	66,466	1652,330	145,989	2760,817
3,900	54224	3,989	-3,450	291,900	56,461	15340,596	14378,221	0,828	175,727	0,000	159,278	2,173	61,768	1594,355	63,938	1596,425	147,377	2818,348
4,100	57177	4,188	-3,450	292,011	56,498	15476,555	14438,345	0,829	174,873	0,000	159,139	2,272	59,141	1523,136	61,410	1525,310	147,993	2837,626
4,300	60142	4,386	-3,450	292,107	56,514	15610,639	14493,974	0,830	174,093	0,000	159,008	2,371	56,721	1458,019	59,089	1460,296	148,563	2855,708
4,500	63118	4,584	-3,450	292,194	56,526	15742,296	14543,629	0,830	173,378	0,000	158,846	2,471	54,489	1397,599	56,957	1399,979	149,072	2871,335
4,700	66105	4,783	-3,450	292,281	56,526	15875,253	14593,524	0,831	172,718	0,000	158,721	2,571	52,417	1343,306	54,985	1345,790	149,584	2888,936
4,900	69101	4,982	-3,450	292,368	56,526	16006,701	14639,473	0,833	172,108	0,000	158,606	2,671	50,482	1293,175	53,150	1295,762	150,055	2905,757
5,100	72106	5,180	-3,450	292,484	56,526	16137,322	14682,394	0,834	171,543	0,000	158,497	2,772	48,678	1246,749	51,446	1249,440	150,495	2921,870
5,300	75120	5,379	-3,450	292,624	56,526	16267,216	14722,949	0,836	171,017	0,000	158,388	2,872	46,996	1203,663	49,865	1206,457	150,910	2937,404
5,500	78142	5,578	-3,450	292,765	56,526	16396,589	14761,581	0,838	170,526	0,000	158,283	2,973	45,425	1163,601	48,395	1166,499	151,306	2952,494
5,700	81172	5,777	-3,450	292,906	56,526	16522,797	14798,654	0,839	170,067	0,000	158,180	3,074	43,955	1126,317	47,026	1129,318	151,686	2967,331
5,900	84209	5,976	-3,450	293,047	56,526	16650,729	14833,802	0,841	169,636	0,000	158,084	3,175	42,573	1091,445	45,746	1094,549	152,046	2981,699
6,100	87253	6,174	-3,450	293,187	56,526	16776,165	14864,483	0,842	169,231	0,000	157,954	3,276	41,279	1057,967	44,553	1061,175	152,361	2993,355
6,300	90303	6,373	-3,450	293,328	56,526	16903,682	14897,991	0,843	168,848	0,000	157,856	3,378	40,067	1027,413	43,441	1030,724	152,704	3007,230
6,500	93361	6,572	-3,450	293,469	56,526	17031,175	14930,974	0,845	168,487	0,000	157,761	3,479	38,927	998,749	42,404	1002,163	153,042	3021,020
6,700	96425	6,771	-3,450	293,771	56,526	17158,497	14963,280	0,846	168,144	0,000	157,665	3,580	37,854	971,783	41,432	975,300	153,374	3034,661

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	99495	6,970	-3,450	294,289	56,526	17285,980	14995,354	0,846	167,819	0,000	157,565	3,682	36,839	946,500	40,519	950,120	153,702	3048,594
7,100	102572	7,169	-3,450	294,791	56,526	17413,310	15026,322	0,846	167,510	0,000	157,471	3,783	35,873	922,629	39,654	926,353	154,020	3062,400
7,300	105656	7,368	-3,450	295,289	56,526	17540,748	15056,886	0,846	167,216	0,000	157,379	3,885	34,957	900,102	38,840	903,929	154,333	3076,245
7,500	108745	7,567	-3,450	295,666	56,526	17668,087	15086,914	0,846	166,935	0,000	157,288	3,987	34,089	878,738	38,074	882,668	154,641	3089,877
7,700	111841	7,765	-3,450	295,724	56,526	17794,686	15115,409	0,848	166,667	0,000	157,199	4,089	33,264	858,273	37,351	862,306	154,933	3102,653
7,900	114942	7,965	-3,450	295,782	56,526	17920,683	15142,698	0,849	166,410	0,000	157,119	4,191	32,481	838,674	36,669	842,810	155,213	3114,712
8,100	118049	8,164	-3,450	295,840	56,526	18046,190	15168,812	0,850	166,165	0,000	157,045	4,293	31,734	819,910	36,024	824,149	155,480	3126,178
8,300	121161	8,363	-3,450	295,898	56,526	18170,323	15191,780	0,851	165,929	0,000	156,955	4,395	31,021	801,572	35,414	805,915	155,716	3135,655
8,500	124277	8,562	-3,450	295,955	56,526	18294,795	15215,406	0,853	165,703	0,000	156,883	4,497	30,339	784,306	34,834	788,752	155,958	3145,898
8,700	127399	8,761	-3,450	296,013	56,526	18418,840	15237,941	0,854	165,486	0,000	156,816	4,599	29,685	767,754	34,282	772,303	156,189	3155,732
8,900	130524	8,960	-3,450	296,071	56,526	18542,476	15259,427	0,855	165,278	0,000	156,753	4,701	29,057	751,863	33,756	756,515	156,409	3165,131
9,100	133655	9,160	-3,450	295,943	56,526	18666,072	15280,023	0,857	165,078	0,000	156,696	4,803	28,456	736,576	33,257	741,331	156,620	3174,042
9,300	136789	9,359	-3,450	295,760	56,526	18789,842	15299,480	0,858	164,885	0,000	156,648	4,905	27,879	721,802	32,783	726,661	156,820	3182,227
9,500	139927	9,559	-3,450	295,568	56,526	18913,557	15318,402	0,860	164,700	0,000	156,602	5,007	27,327	707,618	32,332	712,579	157,014	3190,186
9,700	143069	9,758	-3,450	295,361	56,526	19037,341	15337,008	0,862	164,522	0,000	156,556	5,109	26,797	694,003	31,905	699,067	157,204	3198,006
9,900	146215	9,958	-3,450	295,154	56,526	19160,522	15355,615	0,864	164,350	0,000	156,508	5,211	26,288	680,986	31,498	686,153	157,395	3205,992
10,100	149365	10,157	-3,450	294,948	56,526	19283,681	15373,927	0,865	164,184	0,000	156,460	5,314	25,799	668,483	31,111	673,754	157,583	3213,913
10,300	152518	10,357	-3,450	294,787	56,526	19406,866	15391,681	0,867	164,024	0,000	156,414	5,416	25,327	656,433	30,742	661,806	157,765	3221,610
10,500	155675	10,556	-3,450	294,682	56,526	19529,534	15409,081	0,868	163,869	0,000	156,366	5,518	24,872	644,854	30,389	650,330	157,943	3229,318
10,700	158835	10,756	-3,450	294,577	56,526	19652,211	15425,122	0,870	163,719	0,000	156,325	5,620	24,430	633,606	30,049	639,186	158,107	3236,444

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	161999	10,955	-3,450	294,471	56,526	19774,859	15440,468	0,871	163,575	0,000	156,286	5,723	24,004	622,710	29,725	628,392	158,265	3243,187
11,100	165166	11,155	-3,450	294,366	56,526	19897,444	15455,540	0,872	163,435	0,000	156,246	5,825	23,594	612,190	29,417	617,975	158,419	3249,787
11,300	168336	11,354	-3,450	294,260	56,526	20019,260	15471,028	0,874	163,299	0,000	156,196	5,927	23,198	602,116	29,124	608,004	158,578	3256,751
11,500	171509	11,554	-3,450	294,155	56,526	20140,996	15486,251	0,875	163,167	0,000	156,148	6,029	22,816	592,385	28,844	598,376	158,734	3263,626
11,700	174685	11,753	-3,450	294,050	56,526	20262,859	15501,291	0,876	163,040	0,000	156,095	6,132	22,445	583,002	28,575	589,096	158,888	3270,553
11,900	177864	11,952	-3,450	293,993	56,526	20384,017	15515,742	0,877	162,915	0,000	156,036	6,234	22,086	573,891	28,319	580,088	159,036	3277,186
12,100	181047	12,151	-3,450	294,005	56,526	20505,913	15531,567	0,878	162,794	0,000	155,969	6,336	21,739	565,272	28,074	571,572	159,199	3284,920
12,300	184232	12,351	-3,450	294,017	56,526	20627,789	15547,321	0,879	162,675	0,000	155,902	6,438	21,402	556,947	27,839	563,349	159,360	3292,711
12,500	187421	12,550	-3,450	294,028	56,526	20750,132	15563,478	0,880	162,559	0,000	155,829	6,541	21,076	548,956	27,615	555,461	159,526	3300,893
12,700	190613	12,749	-3,450	294,040	56,526	20872,712	15579,617	0,881	162,446	0,000	155,752	6,643	20,760	541,234	27,402	547,842	159,691	3309,170
12,900	193808	12,948	-3,450	294,052	56,526	20995,193	15595,397	0,882	162,335	0,000	155,677	6,745	20,453	533,729	27,197	540,440	159,853	3317,285
13,100	197006	13,147	-3,450	294,063	56,526	21117,299	15610,519	0,883	162,226	0,000	155,605	6,848	20,155	526,399	27,001	533,213	160,008	3325,030
13,300	200208	13,346	-3,450	294,075	56,526	21239,528	15625,575	0,883	162,120	0,000	155,531	6,950	19,866	519,299	26,815	526,215	160,162	3332,816
13,500	203412	13,546	-3,450	294,087	56,526	21361,777	15640,417	0,884	162,015	0,000	155,456	7,052	19,585	512,398	26,636	519,417	160,314	3340,517
13,700	206620	13,745	-3,450	294,099	56,526	21484,337	15655,389	0,885	161,913	0,000	155,377	7,155	19,313	505,725	26,466	512,847	160,468	3348,381
13,900	209831	13,944	-3,450	294,108	56,526	21607,706	15670,996	0,886	161,812	0,000	155,290	7,257	19,048	499,321	26,304	506,545	160,628	3356,764
14,100	213045	14,143	-3,450	294,264	56,526	21731,482	15686,893	0,886	161,713	0,000	155,200	7,359	18,792	493,136	26,150	500,463	160,791	3365,404
14,300	216262	14,342	-3,450	294,465	56,526	21855,107	15702,493	0,886	161,616	0,000	155,110	7,462	18,542	487,100	26,003	494,530	160,951	3373,868
14,500	219482	14,541	-3,450	294,666	56,526	21979,116	15718,311	0,887	161,519	0,000	155,017	7,564	18,300	481,257	25,863	488,790	161,113	3382,527
14,700	222706	14,740	-3,450	294,867	56,526	22103,631	15734,522	0,887	161,425	0,000	154,918	7,667	18,065	475,617	25,731	483,253	161,279	3391,498

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	225933	14,938	-3,450	295,068	56,526	22227,914	15749,960	0,887	161,331	0,000	154,824	7,769	17,835	470,080	25,603	477,819	161,437	3400,113
15,100	229163	15,138	-3,450	295,268	56,526	22350,380	15762,995	0,887	161,239	0,000	154,751	7,871	17,608	464,488	25,479	472,330	161,571	3407,200
15,300	232395	15,337	-3,450	295,469	56,526	22471,352	15774,096	0,887	161,148	0,000	154,694	7,974	17,386	458,881	25,359	466,825	161,684	3413,028
15,500	235630	15,536	-3,450	295,670	56,526	22595,433	15788,026	0,887	161,059	0,000	154,609	8,076	17,171	453,690	25,246	461,737	161,827	3420,967
15,700	238868	15,735	-3,450	295,871	56,526	22718,898	15801,034	0,888	160,971	0,000	154,531	8,179	16,960	448,559	25,137	456,709	161,961	3428,324
15,900	242109	15,934	-3,450	296,072	56,526	22846,391	15817,865	0,888	160,884	0,000	154,417	8,281	16,753	443,921	25,033	452,173	162,133	3438,584
16,100	245352	16,133	-3,450	296,269	56,526	22967,675	15828,313	0,888	160,798	0,000	154,361	8,384	16,550	438,830	24,933	447,186	162,240	3444,258
16,300	248598	16,333	-3,450	296,466	56,526	23088,391	15838,127	0,888	160,714	0,000	154,311	8,486	16,353	433,815	24,838	442,273	162,341	3449,509
16,500	251847	16,531	-3,450	296,662	56,526	23215,670	15854,693	0,888	160,631	0,000	154,196	8,589	16,160	429,520	24,748	438,081	162,511	3459,737
16,700	255098	16,730	-3,450	296,859	56,526	23339,586	15867,406	0,888	160,548	0,000	154,117	8,691	15,974	424,992	24,665	433,656	162,641	3467,135
16,900	258352	16,929	-3,450	297,108	56,526	23467,171	15883,516	0,888	160,467	0,000	154,005	8,794	15,793	420,867	24,586	429,633	162,806	3477,062
17,100	261610	17,128	-3,450	297,632	56,526	23594,505	15899,851	0,887	160,385	0,000	153,892	8,896	15,616	416,855	24,512	425,724	162,973	3487,156
17,300	264871	17,327	-3,450	298,156	56,526	23719,618	15913,715	0,886	160,305	0,000	153,801	8,999	15,443	412,737	24,441	421,709	163,116	3495,514
17,500	268135	17,526	-3,450	298,679	56,526	23845,752	15928,385	0,885	160,225	0,000	153,703	9,102	15,274	408,784	24,374	417,859	163,266	3504,511
17,700	271401	17,725	-3,450	299,203	56,526	23971,613	15942,582	0,885	160,146	0,000	153,608	9,204	15,108	404,885	24,311	414,063	163,411	3513,196
17,900	274671	17,923	-3,450	299,727	56,526	24098,993	15958,269	0,884	160,068	0,000	153,500	9,307	14,946	401,196	24,252	410,477	163,572	3523,008
18,100	277944	18,122	-3,450	300,251	56,526	24225,682	15973,011	0,883	159,990	0,000	153,399	9,409	14,787	397,520	24,196	406,904	163,723	3532,207
18,300	281220	18,321	-3,450	300,776	56,526	24353,207	15988,203	0,882	159,913	0,000	153,294	9,512	14,631	393,977	24,142	403,464	163,879	3541,907
18,500	284500	18,520	-3,450	301,300	56,526	24483,344	16005,791	0,881	159,836	0,000	153,167	9,615	14,480	390,703	24,094	400,292	164,059	3553,428
18,700	287782	18,718	-3,450	301,824	56,526	24612,258	16021,954	0,880	159,759	0,000	153,052	9,718	14,330	387,401	24,046	397,094	164,225	3564,048

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	291069	18,917	-3,450	302,348	56,526	24742,304	16038,857	0,879	159,683	0,000	152,932	9,820	14,182	384,238	24,001	394,033	164,398	3575,342
19,100	294358	19,115	-3,450	302,880	56,526	24873,058	16056,308	0,878	159,607	0,000	152,807	9,923	14,037	381,186	23,960	391,085	164,577	3587,106
19,300	297652	19,314	-3,450	303,413	56,526	25005,201	16075,074	0,877	159,531	0,000	152,670	10,026	13,897	378,298	23,922	388,300	164,770	3599,880
19,500	300949	19,512	-3,450	303,945	56,526	25139,423	16095,854	0,876	159,455	0,000	152,515	10,129	13,760	375,618	23,888	385,723	164,982	3614,163
19,700	304251	19,711	-3,450	304,477	56,526	25272,164	16114,964	0,875	159,379	0,000	152,375	10,232	13,625	372,880	23,855	383,087	165,178	3627,349
19,900	307556	19,909	-3,450	305,013	56,526	25406,061	16135,200	0,875	159,303	0,000	152,225	10,335	13,492	370,281	23,826	380,591	165,386	3641,421
20,100	310866	20,107	-3,450	305,558	56,526	25540,948	16156,444	0,874	159,227	0,000	152,066	10,438	13,363	367,807	23,800	378,220	165,604	3656,284
20,300	314181	20,305	-3,450	306,103	56,526	25678,115	16179,960	0,873	159,150	0,000	151,886	10,541	13,239	365,539	23,779	376,056	165,845	3672,828
20,500	317500	20,503	-3,450	306,649	56,526	25815,014	16202,952	0,872	159,073	0,000	151,711	10,644	13,117	363,281	23,760	373,902	166,080	3689,057
20,700	320824	20,701	-3,450	307,194	56,526	25950,279	16224,090	0,871	158,997	0,000	151,552	10,747	12,997	360,941	23,743	371,665	166,297	3703,991
20,900	324152	20,900	-3,450	307,739	56,526	26081,306	16240,666	0,870	158,920	0,000	151,434	10,850	12,876	358,334	23,726	369,161	166,467	3715,623
21,100	327483	21,098	-3,450	308,291	56,526	26213,292	16257,845	0,869	158,843	0,000	151,311	10,953	12,759	355,811	23,712	366,741	166,643	3727,647
21,300	330817	21,297	-3,450	308,847	56,526	26341,420	16270,670	0,868	158,767	0,000	151,229	11,057	12,643	353,033	23,699	364,067	166,774	3736,405
21,500	334154	21,497	-3,450	309,259	56,526	26469,608	16282,967	0,867	158,691	0,000	151,152	11,160	12,530	350,260	23,689	361,397	166,900	3744,640
21,700	337493	21,696	-3,450	309,292	56,526	26596,243	16292,808	0,868	158,616	0,000	151,093	11,263	12,417	347,382	23,679	358,623	167,001	3751,159
21,900	340834	21,895	-3,450	309,324	56,526	26723,063	16302,538	0,868	158,542	0,000	151,032	11,366	12,306	344,558	23,672	355,902	167,101	3757,683
22,100	344177	22,095	-3,450	309,357	56,526	26850,139	16312,253	0,869	158,469	0,000	150,969	11,470	12,197	341,786	23,666	353,233	167,201	3764,225
22,300	347522	22,294	-3,450	309,389	56,526	26976,773	16321,397	0,869	158,397	0,000	150,909	11,573	12,090	339,030	23,662	350,581	167,294	3770,379


Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc
Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
LCF
LCB
KB
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
MTc
Immersion (TPc)
0 30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000
Area m^2
144 147 150 153 156 159 162 165 168 171 174 177 180
Long. centre from zero pt. (+ve fwd) m
0 1 2 3 4 5 6 7 8 9 10 11 12
KB m
20 25 30 35 40 45 50 55 60 65 70 75 80
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600
KM long. m
137,5 140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5
Immersion tonne/cm
2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800
Moment to trim tonne.m

10.9 Fixed Trim = -4,6 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)

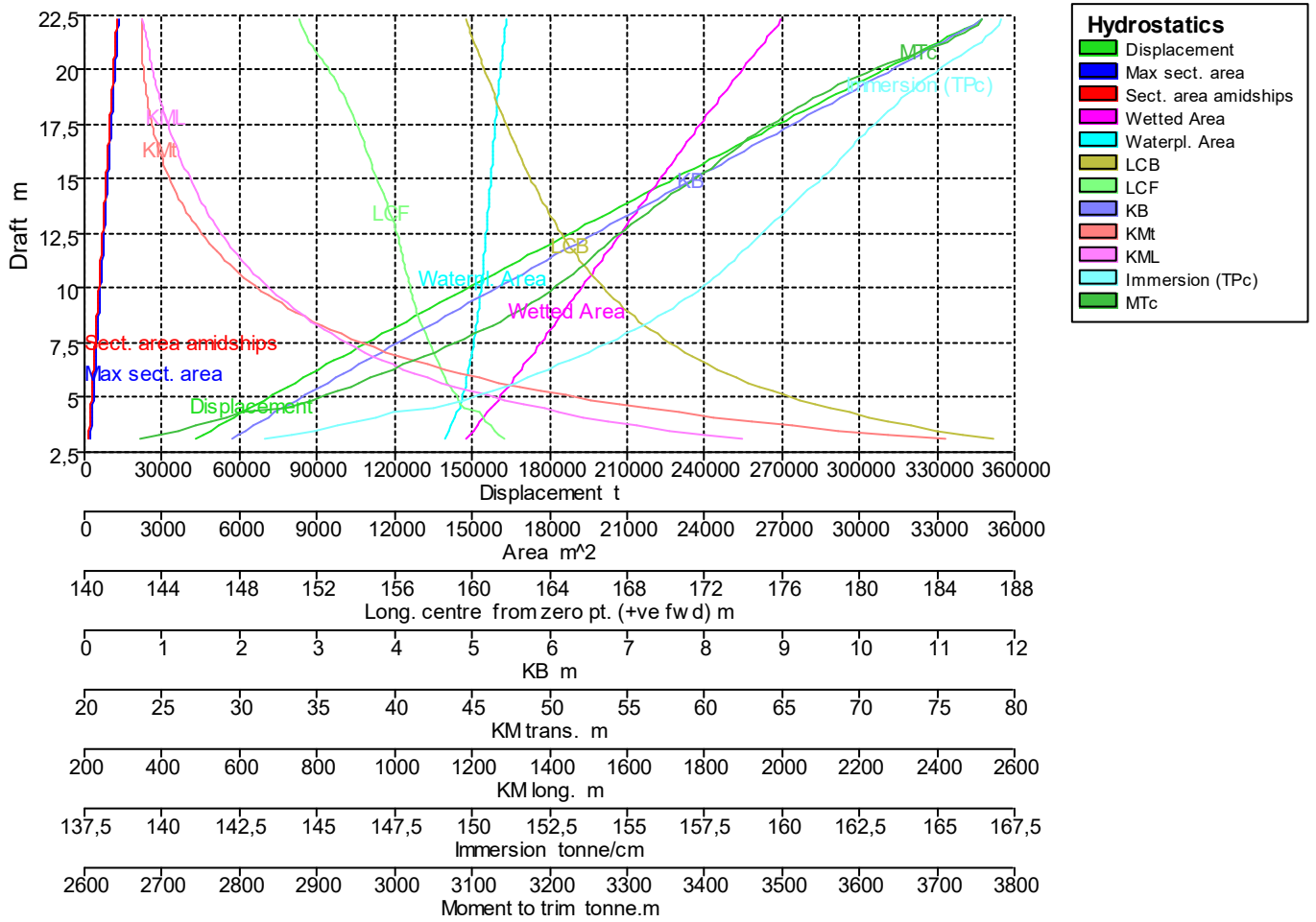
Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
3,100	43126	3,255	-4,600	291,752	56,246	14746,612	13984,725	0,837	186,958	0,000	161,628	1,897	73,636	1896,777	75,524	1898,456	143,343	2671,328
3,300	46000	3,451	-4,600	291,862	56,325	14895,942	14064,374	0,837	185,366	0,000	161,378	1,988	69,911	1796,543	71,891	1798,324	144,160	2697,340
3,500	48891	3,647	-4,600	291,969	56,405	15043,093	14140,039	0,836	183,940	0,000	161,144	2,080	66,569	1706,810	68,642	1708,694	144,935	2722,175
3,700	51796	3,844	-4,600	292,059	56,484	15185,640	14209,293	0,835	182,655	0,000	160,947	2,174	63,531	1625,209	65,698	1627,196	145,645	2744,594
3,900	54715	4,041	-4,600	292,142	56,502	15324,209	14270,108	0,835	181,490	0,000	160,724	2,268	60,752	1549,928	63,013	1552,017	146,269	2763,468
4,100	57646	4,238	-4,600	292,229	56,519	15463,316	14331,001	0,835	180,429	0,000	160,551	2,363	58,205	1482,845	60,561	1485,037	146,893	2784,065
4,300	60589	4,436	-4,600	292,315	56,526	15600,650	14387,989	0,835	179,459	0,000	160,389	2,459	55,860	1421,450	58,313	1423,745	147,477	2803,629
4,500	63557	4,624	-4,600	292,402	56,526	15736,119	14514,694	0,836	178,539	0,000	159,584	2,556	53,879	1382,995	56,429	1385,392	148,776	2860,492
4,700	66537	4,821	-4,600	292,489	56,526	15869,030	14564,212	0,836	177,686	0,000	159,437	2,653	51,849	1329,745	54,495	1332,245	149,283	2877,887
4,900	69527	5,019	-4,600	292,576	56,526	16001,276	14611,199	0,837	176,897	0,000	159,293	2,750	49,962	1280,716	52,707	1283,319	149,765	2894,922
5,100	72527	5,217	-4,600	292,663	56,526	16132,739	14655,622	0,839	176,166	0,000	159,154	2,848	48,203	1235,400	51,045	1238,106	150,220	2911,562
5,300	75535	5,415	-4,600	292,750	56,526	16263,001	14697,075	0,840	175,485	0,000	159,026	2,946	46,556	1193,240	49,497	1196,049	150,645	2927,459
5,500	78551	5,613	-4,600	292,837	56,526	16392,688	14736,654	0,842	174,850	0,000	158,905	3,045	45,017	1153,995	48,057	1156,907	151,051	2942,872
5,700	81575	5,811	-4,600	292,969	56,526	16519,701	14770,335	0,843	174,255	0,000	158,747	3,144	43,578	1116,302	46,717	1119,317	151,396	2954,938
5,900	84607	6,009	-4,600	293,110	56,526	16648,545	14806,549	0,844	173,698	0,000	158,635	3,243	42,228	1082,058	45,466	1085,177	151,767	2969,398
6,100	87645	6,207	-4,600	293,250	56,526	16774,233	14841,405	0,846	173,173	0,000	158,526	3,342	40,958	1049,998	44,295	1053,220	152,124	2983,590
6,300	90691	6,406	-4,600	293,391	56,526	16901,630	14874,737	0,847	172,680	0,000	158,423	3,442	39,761	1019,864	43,198	1023,189	152,466	2997,362
6,500	93743	6,604	-4,600	293,519	56,526	17029,065	14907,742	0,848	172,214	0,000	158,322	3,542	38,636	991,612	42,173	995,039	152,804	3011,137
6,700	96803	6,803	-4,600	293,639	56,526	17156,583	14940,436	0,849	171,773	0,000	158,222	3,642	37,577	965,083	41,215	968,613	153,139	3024,957

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
6,900	99868	7,001	-4,600	293,759	56,526	17284,022	14972,561	0,850	171,356	0,000	158,125	3,742	36,578	940,077	40,316	943,710	153,469	3038,661
7,100	102941	7,200	-4,600	293,879	56,526	17410,969	15003,611	0,852	170,959	0,000	158,024	3,842	35,634	916,360	39,471	920,096	153,787	3051,898
7,300	106019	7,398	-4,600	294,263	56,526	17537,609	15033,851	0,852	170,582	0,000	157,924	3,942	34,735	893,929	38,674	897,768	154,097	3065,029
7,500	109104	7,597	-4,600	294,757	56,526	17664,168	15063,101	0,852	170,223	0,000	157,827	4,043	33,878	872,669	37,917	876,611	154,397	3078,008
7,700	112194	7,795	-4,600	295,251	56,526	17789,939	15089,911	0,852	169,880	0,000	157,704	4,143	33,063	852,150	37,203	856,196	154,672	3089,586
7,900	115290	7,993	-4,600	295,745	56,526	17916,439	15118,052	0,852	169,551	0,000	157,597	4,244	32,288	832,982	36,528	837,130	154,960	3102,286
8,100	118392	8,192	-4,600	296,015	56,526	18042,725	15145,349	0,852	169,237	0,000	157,492	4,345	31,549	814,675	35,891	818,926	155,240	3114,606
8,300	121499	8,390	-4,600	296,072	56,526	18168,515	15171,539	0,853	168,935	0,000	157,394	4,446	30,845	797,105	35,287	801,459	155,508	3126,294
8,500	124611	8,589	-4,600	296,130	56,526	18293,669	15196,328	0,854	168,646	0,000	157,305	4,547	30,172	780,184	34,715	784,641	155,762	3137,197
8,700	127729	8,788	-4,600	296,188	56,526	18418,401	15220,135	0,856	168,368	0,000	157,223	4,648	29,528	763,938	34,173	768,498	156,006	3147,615
8,900	130851	8,987	-4,600	296,241	56,526	18542,762	15242,929	0,857	168,101	0,000	157,146	4,749	28,911	748,339	33,657	753,002	156,240	3157,626
9,100	133978	9,185	-4,600	296,275	56,526	18666,784	15264,855	0,858	167,844	0,000	157,073	4,850	28,318	733,358	33,165	738,124	156,465	3167,277
9,300	137109	9,384	-4,600	296,310	56,526	18790,424	15285,830	0,859	167,598	0,000	157,006	4,952	27,748	718,940	32,696	723,808	156,680	3176,508
9,500	140244	9,583	-4,600	296,341	56,526	18913,881	15306,272	0,860	167,360	0,000	156,942	5,053	27,200	705,095	32,250	710,066	156,889	3185,531
9,700	143384	9,783	-4,600	296,134	56,526	19037,539	15325,710	0,862	167,132	0,000	156,884	5,154	26,675	691,697	31,826	696,771	157,089	3193,916
9,900	146527	9,982	-4,600	295,926	56,526	19161,156	15344,150	0,863	166,911	0,000	156,833	5,256	26,170	678,731	31,423	683,909	157,278	3201,722
10,100	149674	10,181	-4,600	295,718	56,526	19284,783	15362,018	0,865	166,699	0,000	156,782	5,357	25,684	666,233	31,039	671,513	157,461	3209,248
10,300	152825	10,380	-4,600	295,510	56,526	19408,267	15379,569	0,867	166,494	0,000	156,730	5,459	25,217	654,213	30,673	659,597	157,641	3216,688
10,500	155979	10,579	-4,600	295,302	56,526	19531,189	15396,797	0,868	166,296	0,000	156,677	5,560	24,766	642,655	30,323	648,141	157,817	3224,101
10,700	159137	10,779	-4,600	295,094	56,526	19654,031	15413,591	0,870	166,105	0,000	156,622	5,662	24,330	631,517	29,989	637,106	157,989	3231,404

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
10,900	162298	10,978	-4,600	294,961	56,526	19776,656	15429,526	0,871	165,920	0,000	156,570	5,764	23,908	620,742	29,669	626,434	158,153	3238,424
11,100	165463	11,177	-4,600	294,855	56,526	19898,908	15444,713	0,873	165,741	0,000	156,519	5,865	23,499	610,315	29,361	616,110	158,308	3245,175
11,300	168630	11,376	-4,600	294,734	56,526	20020,629	15458,779	0,874	165,567	0,000	156,463	5,967	23,105	600,128	29,069	606,026	158,452	3251,168
11,500	171801	11,575	-4,600	294,609	56,526	20142,920	15472,923	0,875	165,399	0,000	156,416	6,068	22,724	590,322	28,790	596,322	158,597	3257,257
11,700	174974	11,775	-4,600	294,485	56,526	20265,001	15487,249	0,876	165,235	0,000	156,365	6,170	22,357	580,887	28,525	586,991	158,744	3263,519
11,900	178150	11,974	-4,600	294,360	56,526	20386,525	15501,783	0,878	165,077	0,000	156,311	6,272	22,002	571,819	28,272	578,025	158,893	3270,033
12,100	181329	12,173	-4,600	294,236	56,526	20507,989	15515,897	0,879	164,923	0,000	156,257	6,374	21,658	563,035	28,029	569,344	159,038	3276,422
12,300	184510	12,372	-4,600	294,111	56,526	20629,577	15529,940	0,880	164,773	0,000	156,200	6,475	21,324	554,554	27,797	560,965	159,182	3282,887
12,500	187695	12,571	-4,600	294,094	56,526	20751,176	15544,293	0,881	164,627	0,000	156,138	6,577	21,000	546,401	27,575	552,915	159,329	3289,674
12,700	190883	12,770	-4,600	294,105	56,526	20872,944	15559,506	0,882	164,484	0,000	156,066	6,679	20,686	538,626	27,363	545,243	159,485	3297,203
12,900	194074	12,969	-4,600	294,117	56,526	20994,683	15574,410	0,883	164,345	0,000	155,992	6,781	20,382	531,077	27,160	537,796	159,638	3304,615
13,100	197268	13,168	-4,600	294,129	56,526	21116,988	15589,768	0,884	164,209	0,000	155,912	6,882	20,086	523,827	26,966	530,649	159,795	3312,460
13,300	200465	13,367	-4,600	294,140	56,526	21239,365	15604,949	0,884	164,076	0,000	155,831	6,984	19,799	516,792	26,781	523,717	159,951	3320,278
13,500	203665	13,565	-4,600	294,142	56,526	21361,601	15619,737	0,885	163,946	0,000	155,752	7,086	19,519	509,941	26,603	516,968	160,102	3327,913
13,700	206868	13,764	-4,600	294,144	56,526	21483,554	15633,999	0,886	163,819	0,000	155,676	7,188	19,248	503,250	26,434	510,380	160,248	3335,262
13,900	210074	13,963	-4,600	294,146	56,526	21605,752	15648,351	0,887	163,694	0,000	155,597	7,290	18,984	496,771	26,272	504,004	160,396	3342,743
14,100	213283	14,162	-4,600	294,148	56,526	21727,919	15662,527	0,888	163,572	0,000	155,518	7,392	18,728	490,468	26,118	497,804	160,541	3350,154
14,300	216495	14,360	-4,600	294,150	56,526	21850,771	15677,252	0,888	163,451	0,000	155,432	7,494	18,479	484,406	25,971	491,844	160,692	3358,015
14,500	219710	14,559	-4,600	294,166	56,526	21974,121	15692,349	0,889	163,333	0,000	155,342	7,596	18,237	478,554	25,831	486,095	160,847	3366,191
14,700	222929	14,758	-4,600	294,366	56,526	22097,864	15707,781	0,889	163,217	0,000	155,248	7,698	18,002	472,900	25,698	480,543	161,005	3374,643

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
14,900	226150	14,956	-4,600	294,566	56,526	22221,508	15722,984	0,889	163,103	0,000	155,154	7,800	17,774	467,378	25,572	475,124	161,161	3382,957
15,100	229374	15,155	-4,600	294,766	56,526	22345,689	15738,615	0,889	162,991	0,000	155,056	7,902	17,552	462,047	25,452	469,895	161,321	3391,607
15,300	232602	15,353	-4,600	294,966	56,526	22470,296	15754,152	0,890	162,880	0,000	154,957	8,004	17,335	456,873	25,337	464,824	161,480	3400,394
15,500	235833	15,552	-4,600	295,163	56,526	22593,864	15768,162	0,890	162,771	0,000	154,870	8,106	17,122	451,713	25,226	459,767	161,624	3408,261
15,700	239066	15,751	-4,600	295,359	56,526	22715,663	15780,011	0,890	162,664	0,000	154,803	8,208	16,913	446,504	25,118	454,660	161,745	3414,690
15,900	242302	15,950	-4,600	295,555	56,526	22836,753	15790,806	0,890	162,558	0,000	154,743	8,310	16,707	441,343	25,015	449,602	161,856	3420,456
16,100	245540	16,149	-4,600	295,751	56,526	22961,132	15804,604	0,890	162,455	0,000	154,654	8,412	16,509	436,586	24,919	444,947	161,997	3428,446
16,300	248781	16,348	-4,600	295,947	56,526	23084,395	15817,097	0,890	162,353	0,000	154,577	8,514	16,314	431,839	24,826	440,303	162,125	3435,563
16,500	252025	16,546	-4,600	296,143	56,526	23212,023	15833,728	0,890	162,252	0,000	154,461	8,616	16,122	427,583	24,737	436,150	162,296	3445,812
16,700	255272	16,745	-4,600	296,339	56,526	23332,693	15843,298	0,890	162,152	0,000	154,409	8,718	15,935	422,822	24,651	431,492	162,394	3450,953
16,900	258521	16,944	-4,600	296,535	56,526	23453,832	15853,547	0,890	162,055	0,000	154,352	8,820	15,752	418,238	24,571	427,010	162,499	3456,625
17,100	261772	17,142	-4,600	296,731	56,526	23581,647	15870,203	0,890	161,958	0,000	154,234	8,922	15,575	414,305	24,496	423,180	162,670	3467,011
17,300	265027	17,341	-4,600	296,927	56,526	23706,249	15883,348	0,890	161,863	0,000	154,149	9,025	15,403	410,169	24,425	419,146	162,804	3474,833
17,500	268284	17,539	-4,600	297,252	56,526	23836,668	15902,060	0,890	161,769	0,000	154,012	9,127	15,235	406,587	24,360	415,667	162,996	3486,734
17,700	271546	17,738	-4,600	297,771	56,526	23960,795	15915,183	0,889	161,675	0,000	153,927	9,229	15,071	402,634	24,298	411,816	163,131	3494,604
17,900	274809	17,936	-4,600	298,290	56,526	24086,171	15929,184	0,888	161,583	0,000	153,835	9,331	14,910	398,844	24,239	408,129	163,274	3503,166
18,100	278076	18,135	-4,600	298,809	56,526	24212,263	15943,710	0,887	161,491	0,000	153,737	9,434	14,752	395,183	24,184	404,571	163,423	3512,156
18,300	281346	18,333	-4,600	299,328	56,526	24338,637	15958,316	0,886	161,400	0,000	153,640	9,536	14,598	391,611	24,132	401,102	163,573	3521,235
18,500	284619	18,532	-4,600	299,854	56,526	24465,820	15973,643	0,886	161,311	0,000	153,537	9,638	14,447	388,179	24,084	397,773	163,730	3530,925
18,700	287895	18,730	-4,600	300,381	56,526	24592,839	15988,370	0,885	161,222	0,000	153,439	9,741	14,298	384,790	24,037	394,486	163,881	3540,336

Draft Amidships m	Displacement t	Draft at LCF m	Trim (+ve by stern) m	WL Length m	Beam max extents on WL m	Wetted Area m^2	Waterpl. Area m^2	Block coeff. (Cb)	LCB from zero pt. (+ve fwd) m	TCB m	LCF from zero pt. (+ve fwd) m	KB m	BMt m	BML m	KMt m	KML m	Immersion (TPc) tonne/cm	MTc tonne.m
18,900	291174	18,928	-4,600	300,908	56,526	24722,341	16005,369	0,884	161,134	0,000	153,320	9,843	14,154	381,651	23,995	391,450	164,055	3551,478
19,100	294456	19,127	-4,600	301,435	56,526	24851,027	16021,321	0,883	161,046	0,000	153,210	9,945	14,011	378,507	23,955	388,409	164,219	3561,964
19,300	297742	19,325	-4,600	301,964	56,526	24980,282	16037,541	0,882	160,959	0,000	153,097	10,048	13,870	375,460	23,916	385,464	164,385	3572,779
19,500	301032	19,523	-4,600	302,504	56,526	25110,484	16054,540	0,881	160,873	0,000	152,978	10,150	13,732	372,538	23,881	382,645	164,559	3584,240
19,700	304324	19,721	-4,600	303,045	56,526	25241,342	16072,081	0,880	160,787	0,000	152,852	10,253	13,597	369,719	23,848	379,929	164,739	3596,167
19,900	307621	19,919	-4,600	303,585	56,526	25373,746	16091,096	0,879	160,701	0,000	152,713	10,355	13,466	367,064	23,819	377,377	164,934	3609,218
20,100	310922	20,117	-4,600	304,125	56,526	25507,752	16111,592	0,878	160,615	0,000	152,561	10,458	13,338	364,570	23,794	374,986	165,144	3623,410
20,300	314226	20,315	-4,600	304,665	56,526	25640,506	16130,620	0,877	160,530	0,000	152,420	10,560	13,211	362,030	23,769	372,549	165,339	3636,645
20,500	317535	20,512	-4,600	305,211	56,526	25774,527	16150,901	0,876	160,445	0,000	152,268	10,663	13,086	359,628	23,748	370,250	165,547	3650,851
20,700	320848	20,710	-4,600	305,761	56,526	25909,881	16172,493	0,875	160,360	0,000	152,104	10,766	12,966	357,364	23,730	368,089	165,768	3666,057
20,900	324166	20,907	-4,600	306,312	56,526	26047,490	16196,307	0,874	160,274	0,000	151,921	10,869	12,850	355,292	23,717	366,120	166,012	3682,907
21,100	327488	21,105	-4,600	306,862	56,526	26182,903	16217,634	0,873	160,189	0,000	151,759	10,971	12,734	353,097	23,704	364,028	166,231	3698,045
21,300	330815	21,302	-4,600	307,412	56,526	26317,921	16238,056	0,872	160,103	0,000	151,601	11,074	12,620	350,889	23,693	361,922	166,440	3712,628
21,500	334145	21,500	-4,600	307,962	56,526	26448,824	16253,867	0,871	160,018	0,000	151,481	11,177	12,506	348,418	23,681	359,555	166,602	3723,898
21,700	337479	21,699	-4,600	308,513	56,526	26580,543	16270,069	0,870	159,933	0,000	151,356	11,280	12,394	346,013	23,673	357,253	166,768	3735,414
21,900	340815	21,897	-4,600	309,063	56,526	26708,703	16282,159	0,869	159,849	0,000	151,268	11,383	12,283	343,377	23,665	354,721	166,892	3743,862
22,100	344154	22,096	-4,600	309,467	56,526	26837,067	16293,799	0,869	159,765	0,000	151,186	11,486	12,175	340,748	23,660	352,194	167,011	3751,845
22,300	347495	22,295	-4,600	309,499	56,526	26959,669	16301,872	0,869	159,683	0,000	151,117	11,589	12,068	337,931	23,656	349,481	167,094	3757,148


Hydrostatics
Displacement
Max sect. area
Sect. area amidships
Wetted Area
Waterpl. Area
LCB
LCF
KB
KMt
KML
Immersion (TPc)
MTc
Draft m
22,5
20
17,5
15
12,5
10
7,5
5
2,5
KML
KMt
LCF
LCB
KB
MTc
Immersion (TPc)
Waterpl. Area
Wetted Area
Sect. area amidships
Max sect. area
Displacement
0 30000 60000 90000 120000 150000 180000 210000 240000 270000 300000 330000 360000
Displacement t
0 3000 6000 9000 12000 15000 18000 21000 24000 27000 30000 33000 36000
Area m^2
140 144 148 152 156 160 164 168 172 176 180 184 188
Long. centre from zero pt. (+ve fwd) m
0 1 2 3 4 5 6 7 8 9 10 11 12
KB m
20 25 30 35 40 45 50 55 60 65 70 75 80
KM trans. m
200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400 2600
KM long. m
137,5 140 142,5 145 147,5 150 152,5 155 157,5 160 162,5 165 167,5
Immersion tonne/cm
2600 2700 2800 2900 3000 3100 3200 3300 3400 3500 3600 3700 3800
Moment to trim tonne.m

11 CURVA DE KN

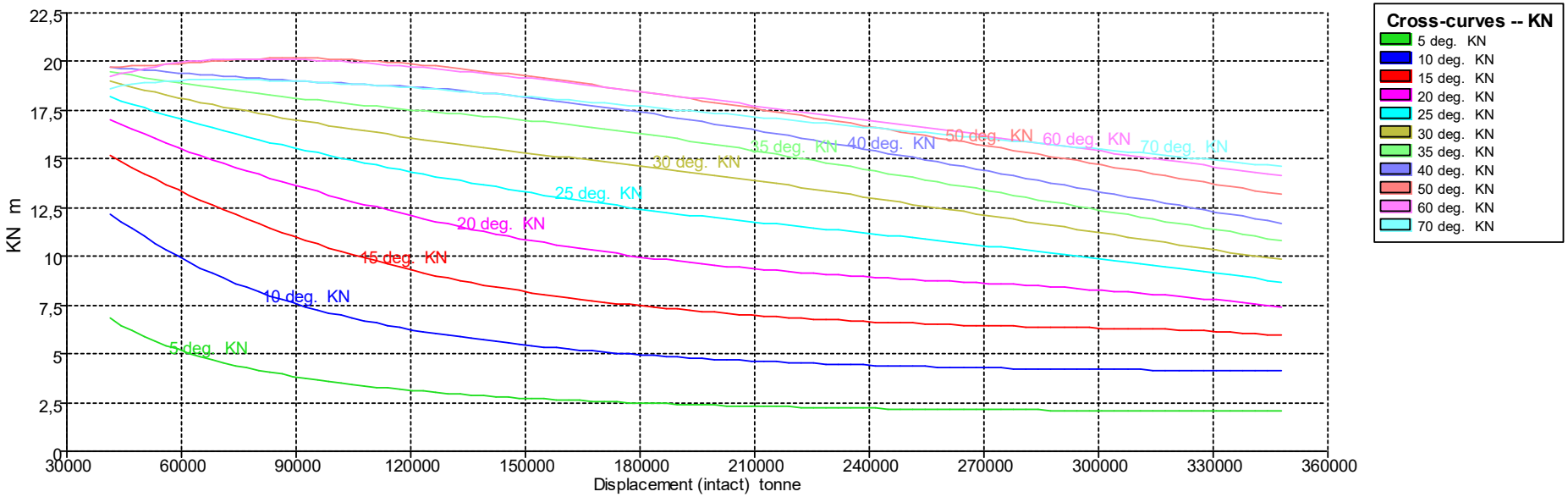
Lo primero que se hace antes de la obtención de estas curvas es llevar a cabo la comprobación de la simetría del buque; para ello, se confirma mediante el programa de Maxsurf Stability, que TCB es igual a 0.

11.1 Initial Trim = 0 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
41380	3,100	0,000	0,000	6,801	12,187	15,167	17,001	18,207	18,995	19,477	19,721	19,682	19,232	18,625
44290	3,300	0,000	0,000	6,467	11,791	14,851	16,747	18,007	18,847	19,378	19,669	19,722	19,369	18,738
47215	3,500	0,000	0,000	6,167	11,411	14,545	16,501	17,813	18,703	19,281	19,618	19,760	19,501	18,828
50154	3,700	0,000	0,000	5,896	11,044	14,248	16,262	17,626	18,564	19,187	19,569	19,798	19,631	18,900
53107	3,900	0,000	0,000	5,650	10,690	13,960	16,031	17,444	18,428	19,096	19,520	19,835	19,748	18,956
56072	4,100	0,000	0,000	5,425	10,350	13,680	15,806	17,267	18,295	19,007	19,473	19,872	19,850	19,000
59050	4,300	0,000	0,000	5,218	10,025	13,408	15,587	17,094	18,166	18,920	19,428	19,908	19,933	19,033
62038	4,500	0,000	0,000	5,029	9,715	13,143	15,373	16,927	18,040	18,835	19,383	19,944	20,000	19,056
65037	4,700	0,000	0,000	4,855	9,418	12,885	15,165	16,763	17,917	18,752	19,339	19,979	20,052	19,071
68046	4,900	0,000	0,000	4,694	9,136	12,634	14,962	16,603	17,797	18,671	19,297	20,013	20,092	19,079
71064	5,100	0,000	0,000	4,546	8,872	12,389	14,764	16,446	17,680	18,592	19,255	20,048	20,120	19,080
74090	5,300	0,000	0,000	4,407	8,625	12,150	14,570	16,294	17,566	18,515	19,215	20,082	20,138	19,077
77124	5,500	0,000	0,000	4,279	8,393	11,916	14,380	16,144	17,454	18,439	19,175	20,114	20,148	19,069
80167	5,700	0,000	0,000	4,158	8,175	11,689	14,194	15,998	17,345	18,365	19,137	20,141	20,150	19,056
83216	5,900	0,000	0,000	4,046	7,971	11,466	14,013	15,854	17,237	18,292	19,099	20,161	20,145	19,040
86273	6,100	0,000	0,000	3,941	7,778	11,250	13,834	15,714	17,132	18,221	19,062	20,174	20,134	19,021
89337	6,300	0,000	0,000	3,843	7,597	11,039	13,660	15,576	17,029	18,152	19,026	20,178	20,117	18,998
92406	6,500	0,000	0,000	3,750	7,425	10,835	13,489	15,441	16,928	18,084	18,990	20,174	20,096	18,972
95483	6,700	0,000	0,000	3,663	7,263	10,637	13,321	15,308	16,828	18,017	18,956	20,163	20,070	18,945
98565	6,900	0,000	0,000	3,581	7,110	10,444	13,155	15,177	16,730	17,951	18,922	20,145	20,039	18,914
101653	7,100	0,000	0,000	3,504	6,965	10,258	12,993	15,049	16,634	17,887	18,889	20,121	20,005	18,882
104747	7,300	0,000	0,000	3,431	6,828	10,077	12,834	14,923	16,540	17,824	18,856	20,092	19,968	18,848
107847	7,500	0,000	0,000	3,362	6,698	9,905	12,678	14,799	16,448	17,762	18,825	20,057	19,927	18,812
110952	7,700	0,000	0,000	3,297	6,575	9,741	12,525	14,676	16,356	17,701	18,794	20,017	19,883	18,774
114061	7,900	0,000	0,000	3,235	6,458	9,583	12,375	14,557	16,267	17,641	18,763	19,974	19,836	18,735
117175	8,100	0,000	0,000	3,177	6,346	9,432	12,227	14,439	16,179	17,582	18,730	19,926	19,787	18,694
120293	8,300	0,000	0,000	3,122	6,241	9,288	12,082	14,322	16,092	17,524	18,694	19,875	19,736	18,653
123415	8,500	0,000	0,000	3,070	6,140	9,151	11,941	14,208	16,007	17,467	18,655	19,820	19,682	18,610
126543	8,700	0,000	0,000	3,020	6,044	9,019	11,802	14,095	15,923	17,411	18,612	19,762	19,627	18,566
129674	8,900	0,000	0,000	2,973	5,953	8,893	11,667	13,984	15,840	17,356	18,566	19,701	19,570	18,520
132810	9,100	0,000	0,000	2,929	5,866	8,772	11,535	13,875	15,758	17,302	18,515	19,637	19,510	18,474
135951	9,300	0,000	0,000	2,886	5,783	8,656	11,405	13,767	15,678	17,248	18,460	19,571	19,450	18,427
139095	9,500	0,000	0,000	2,846	5,703	8,544	11,279	13,661	15,598	17,195	18,401	19,503	19,388	18,379
142243	9,700	0,000	0,000	2,808	5,628	8,438	11,156	13,557	15,520	17,141	18,339	19,432	19,324	18,330
145395	9,900	0,000	0,000	2,771	5,555	8,336	11,037	13,454	15,443	17,084	18,273	19,360	19,259	18,281
148551	10,100	0,000	0,000	2,737	5,486	8,239	10,922	13,353	15,367	17,026	18,204	19,285	19,193	18,231
151710	10,300	0,000	0,000	2,703	5,420	8,145	10,811	13,254	15,292	16,966	18,133	19,209	19,126	18,179

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
154873	10,500	0,000	0,000	2,672	5,358	8,055	10,704	13,156	15,218	16,903	18,059	19,131	19,058	18,128
158040	10,700	0,000	0,000	2,642	5,298	7,969	10,601	13,059	15,145	16,836	17,982	19,051	18,988	18,076
161210	10,900	0,000	0,000	2,613	5,240	7,886	10,501	12,965	15,073	16,767	17,903	18,970	18,918	18,023
164385	11,100	0,000	0,000	2,586	5,186	7,807	10,406	12,872	15,002	16,695	17,822	18,888	18,846	17,970
167563	11,300	0,000	0,000	2,560	5,134	7,731	10,313	12,781	14,932	16,620	17,739	18,804	18,774	17,916
170746	11,500	0,000	0,000	2,535	5,084	7,658	10,224	12,692	14,862	16,543	17,653	18,719	18,700	17,861
173932	11,700	0,000	0,000	2,511	5,036	7,588	10,138	12,604	14,792	16,462	17,566	18,632	18,626	17,807
177121	11,900	0,000	0,000	2,488	4,991	7,520	10,054	12,518	14,721	16,380	17,477	18,545	18,551	17,752
180315	12,100	0,000	0,000	2,466	4,947	7,456	9,974	12,434	14,648	16,295	17,386	18,456	18,475	17,696
183512	12,300	0,000	0,000	2,446	4,905	7,394	9,897	12,352	14,574	16,208	17,293	18,366	18,399	17,640
186712	12,500	0,000	0,000	2,426	4,866	7,334	9,823	12,272	14,499	16,119	17,199	18,275	18,322	17,583
189917	12,700	0,000	0,000	2,407	4,827	7,277	9,751	12,194	14,422	16,029	17,103	18,184	18,245	17,527
193125	12,900	0,000	0,000	2,388	4,791	7,223	9,683	12,119	14,343	15,936	17,006	18,091	18,167	17,470
196337	13,100	0,000	0,000	2,371	4,756	7,170	9,616	12,046	14,261	15,842	16,908	17,998	18,088	17,412
199553	13,300	0,000	0,000	2,354	4,723	7,120	9,552	11,976	14,178	15,746	16,808	17,903	18,009	17,355
202772	13,500	0,000	0,000	2,338	4,691	7,072	9,491	11,907	14,093	15,648	16,707	17,808	17,930	17,297
205994	13,700	0,000	0,000	2,323	4,660	7,026	9,432	11,841	14,006	15,549	16,604	17,712	17,850	17,239
209219	13,900	0,000	0,000	2,308	4,631	6,982	9,375	11,778	13,918	15,449	16,501	17,616	17,769	17,181
212447	14,100	0,000	0,000	2,295	4,603	6,940	9,320	11,715	13,828	15,347	16,397	17,518	17,688	17,122
215678	14,300	0,000	0,000	2,281	4,576	6,900	9,268	11,653	13,737	15,244	16,291	17,420	17,607	17,064
218913	14,500	0,000	0,000	2,268	4,551	6,861	9,217	11,591	13,644	15,140	16,184	17,321	17,526	17,005
222150	14,700	0,000	0,000	2,256	4,526	6,825	9,169	11,529	13,550	15,034	16,077	17,222	17,444	16,946
225390	14,900	0,000	0,000	2,245	4,503	6,790	9,122	11,468	13,455	14,928	15,969	17,122	17,362	16,887
228634	15,100	0,000	0,000	2,234	4,480	6,756	9,077	11,406	13,360	14,820	15,859	17,021	17,279	16,828
231880	15,300	0,000	0,000	2,223	4,459	6,724	9,034	11,344	13,264	14,712	15,749	16,920	17,197	16,769
235131	15,500	0,000	0,000	2,213	4,439	6,693	8,993	11,281	13,167	14,603	15,638	16,818	17,113	16,710
238384	15,700	0,000	0,000	2,203	4,419	6,664	8,954	11,217	13,070	14,493	15,526	16,715	17,030	16,650
241641	15,900	0,000	0,000	2,194	4,401	6,636	8,917	11,152	12,973	14,382	15,414	16,612	16,946	16,591
244901	16,100	0,000	0,000	2,185	4,383	6,610	8,881	11,086	12,876	14,271	15,300	16,509	16,862	16,531
248164	16,300	0,000	0,000	2,177	4,366	6,584	8,847	11,019	12,778	14,159	15,186	16,405	16,778	16,471
251430	16,500	0,000	0,000	2,169	4,351	6,560	8,814	10,952	12,681	14,046	15,072	16,300	16,693	16,412
254699	16,700	0,000	0,000	2,161	4,335	6,537	8,783	10,883	12,583	13,933	14,956	16,196	16,608	16,352
257973	16,900	0,000	0,000	2,154	4,321	6,516	8,752	10,814	12,484	13,819	14,841	16,090	16,523	16,292
261250	17,100	0,000	0,000	2,147	4,308	6,495	8,721	10,744	12,386	13,705	14,724	15,985	16,437	16,231
264530	17,300	0,000	0,000	2,141	4,295	6,475	8,689	10,673	12,287	13,591	14,608	15,879	16,351	16,171
267815	17,500	0,000	0,000	2,135	4,283	6,457	8,657	10,602	12,188	13,478	14,491	15,773	16,265	16,110
271103	17,700	0,000	0,000	2,129	4,271	6,439	8,624	10,530	12,090	13,364	14,373	15,666	16,179	16,049
274395	17,900	0,000	0,000	2,124	4,260	6,422	8,590	10,457	11,991	13,250	14,256	15,559	16,092	15,988
277692	18,100	0,000	0,000	2,119	4,250	6,406	8,555	10,384	11,893	13,137	14,138	15,451	16,006	15,927
280993	18,300	0,000	0,000	2,114	4,240	6,391	8,518	10,309	11,794	13,024	14,019	15,344	15,919	15,866
284298	18,500	0,000	0,000	2,110	4,231	6,377	8,479	10,235	11,695	12,911	13,901	15,236	15,831	15,804

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
287608	18,700	0,000	0,000	2,106	4,223	6,364	8,439	10,160	11,597	12,798	13,782	15,127	15,744	15,743
290923	18,900	0,000	0,000	2,102	4,215	6,352	8,397	10,084	11,498	12,685	13,663	15,018	15,656	15,681
294242	19,100	0,000	0,000	2,098	4,207	6,340	8,353	10,007	11,399	12,573	13,545	14,909	15,568	15,619
297565	19,300	0,000	0,000	2,095	4,201	6,330	8,307	9,930	11,300	12,461	13,427	14,800	15,479	15,557
300891	19,500	0,000	0,000	2,092	4,194	6,319	8,259	9,852	11,201	12,349	13,309	14,691	15,391	15,494
304219	19,700	0,000	0,000	2,089	4,188	6,306	8,210	9,774	11,103	12,237	13,192	14,580	15,302	15,432
307550	19,900	0,000	0,000	2,086	4,183	6,293	8,160	9,695	11,004	12,126	13,075	14,471	15,213	15,370
310883	20,100	0,000	0,000	2,084	4,178	6,277	8,107	9,616	10,905	12,015	12,959	14,361	15,123	15,307
314219	20,300	0,000	0,000	2,081	4,173	6,261	8,053	9,535	10,806	11,905	12,843	14,251	15,034	15,245
317556	20,500	0,000	0,000	2,079	4,169	6,242	7,997	9,455	10,708	11,795	12,728	14,141	14,944	15,182
320895	20,700	0,000	0,000	2,078	4,165	6,222	7,940	9,374	10,609	11,685	12,613	14,031	14,855	15,120
324237	20,900	0,000	0,000	2,076	4,162	6,198	7,881	9,291	10,511	11,576	12,499	13,921	14,765	15,057
327581	21,100	0,000	0,000	2,075	4,159	6,171	7,821	9,209	10,413	11,467	12,385	13,811	14,676	14,994
330927	21,300	0,000	0,000	2,073	4,156	6,141	7,758	9,125	10,314	11,359	12,272	13,702	14,586	14,931
334275	21,500	0,000	0,000	2,073	4,154	6,109	7,695	9,041	10,216	11,251	12,159	13,593	14,497	14,868
337625	21,700	0,000	0,000	2,072	4,152	6,074	7,629	8,956	10,118	11,144	12,047	13,485	14,407	14,805
340977	21,900	0,000	0,000	2,071	4,151	6,035	7,562	8,870	10,019	11,037	11,936	13,377	14,318	14,743
344332	22,100	0,000	0,000	2,071	4,148	5,994	7,493	8,784	9,921	10,931	11,826	13,270	14,229	14,680
347688	22,300	0,000	0,000	2,071	4,143	5,950	7,423	8,696	9,822	10,825	11,716	13,164	14,140	14,618



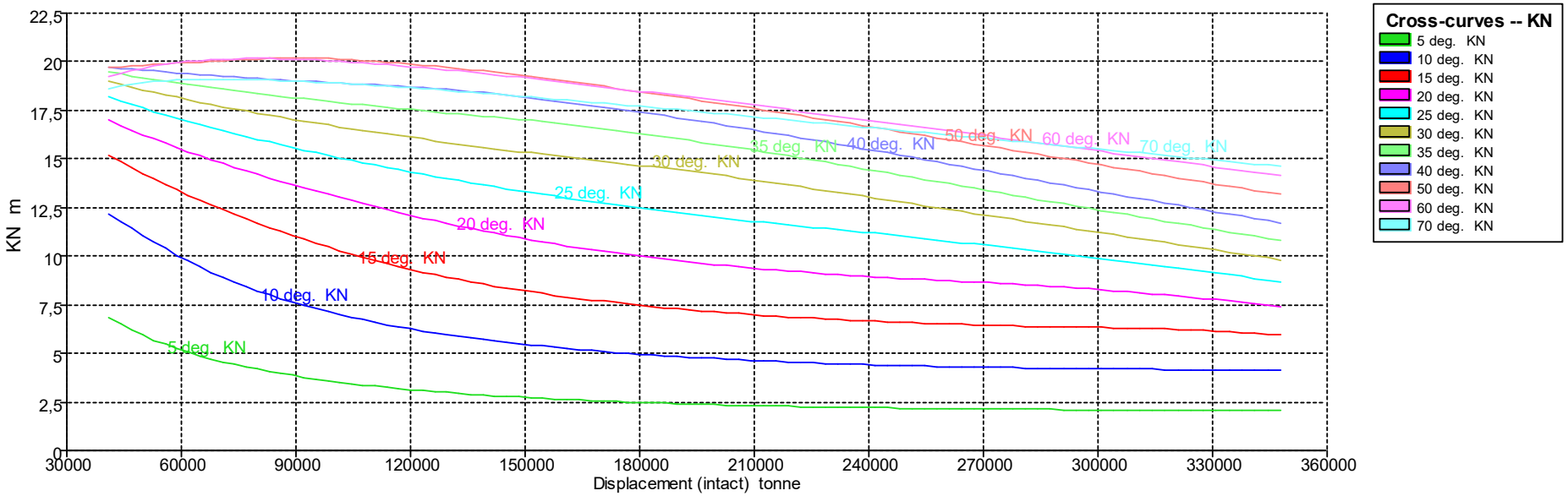
11.2 Initial Trim = 1,15 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
41095	3,100	1,150	0,000	6,841	12,182	15,150	16,982	18,188	18,982	19,469	19,717	19,685	19,251	18,640
44005	3,300	1,150	0,000	6,505	11,795	14,839	16,733	17,994	18,838	19,372	19,667	19,726	19,388	18,752
46930	3,500	1,150	0,000	6,202	11,421	14,538	16,491	17,805	18,697	19,278	19,618	19,766	19,519	18,842
49870	3,700	1,150	0,000	5,929	11,061	14,245	16,257	17,620	18,560	19,186	19,570	19,805	19,644	18,914
52823	3,900	1,150	0,000	5,681	10,712	13,961	16,028	17,441	18,426	19,097	19,523	19,844	19,759	18,970
55789	4,100	1,150	0,000	5,455	10,376	13,684	15,806	17,267	18,295	19,009	19,478	19,882	19,859	19,014
58767	4,300	1,150	0,000	5,247	10,053	13,415	15,590	17,096	18,168	18,924	19,433	19,919	19,943	19,047
61758	4,500	1,150	0,000	5,056	9,745	13,153	15,378	16,930	18,044	18,840	19,389	19,956	20,011	19,070
64759	4,700	1,150	0,000	4,880	9,451	12,898	15,172	16,768	17,922	18,758	19,347	19,992	20,064	19,085
67770	4,900	1,150	0,000	4,719	9,171	12,648	14,970	16,609	17,804	18,678	19,305	20,027	20,105	19,093
70791	5,100	1,150	0,000	4,569	8,906	12,405	14,773	16,454	17,688	18,599	19,264	20,062	20,134	19,095
73821	5,300	1,150	0,000	4,429	8,658	12,167	14,581	16,302	17,574	18,523	19,224	20,096	20,153	19,092

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
76858	5,500	1,150	0,000	4,300	8,425	11,935	14,392	16,153	17,463	18,448	19,185	20,127	20,163	19,083
79904	5,700	1,150	0,000	4,178	8,206	11,709	14,207	16,008	17,354	18,374	19,147	20,154	20,166	19,071
82956	5,900	1,150	0,000	4,065	8,001	11,488	14,026	15,865	17,247	18,302	19,110	20,175	20,161	19,054
86015	6,100	1,150	0,000	3,959	7,807	11,272	13,848	15,725	17,143	18,232	19,073	20,189	20,150	19,034
89081	6,300	1,150	0,000	3,859	7,625	11,062	13,674	15,588	17,040	18,163	19,038	20,193	20,134	19,011
92153	6,500	1,150	0,000	3,766	7,453	10,859	13,504	15,453	16,939	18,095	19,003	20,190	20,112	18,986
95231	6,700	1,150	0,000	3,678	7,290	10,662	13,336	15,321	16,840	18,029	18,969	20,179	20,086	18,957
98315	6,900	1,150	0,000	3,595	7,136	10,470	13,172	15,191	16,743	17,964	18,935	20,162	20,056	18,927
101405	7,100	1,150	0,000	3,517	6,990	10,284	13,010	15,063	16,647	17,900	18,903	20,138	20,021	18,894
104500	7,300	1,150	0,000	3,443	6,852	10,104	12,852	14,937	16,554	17,837	18,871	20,109	19,983	18,859
107601	7,500	1,150	0,000	3,374	6,721	9,932	12,697	14,813	16,461	17,775	18,839	20,074	19,942	18,823
110706	7,700	1,150	0,000	3,308	6,597	9,767	12,544	14,692	16,371	17,715	18,809	20,035	19,898	18,785
113816	7,900	1,150	0,000	3,246	6,479	9,609	12,394	14,572	16,281	17,655	18,778	19,991	19,851	18,746
116931	8,100	1,150	0,000	3,187	6,367	9,458	12,247	14,454	16,194	17,597	18,745	19,943	19,802	18,705
120051	8,300	1,150	0,000	3,132	6,260	9,314	12,103	14,338	16,107	17,539	18,710	19,891	19,750	18,663
123175	8,500	1,150	0,000	3,079	6,159	9,176	11,962	14,224	16,022	17,482	18,672	19,836	19,696	18,619
126303	8,700	1,150	0,000	3,029	6,062	9,043	11,824	14,112	15,938	17,427	18,630	19,778	19,640	18,574
129435	8,900	1,150	0,000	2,982	5,971	8,917	11,689	14,001	15,856	17,372	18,583	19,717	19,583	18,529
132572	9,100	1,150	0,000	2,937	5,883	8,795	11,558	13,892	15,774	17,318	18,533	19,653	19,523	18,482
135713	9,300	1,150	0,000	2,894	5,799	8,679	11,429	13,785	15,694	17,264	18,478	19,587	19,462	18,435
138858	9,500	1,150	0,000	2,854	5,719	8,567	11,303	13,680	15,615	17,212	18,419	19,519	19,399	18,386
142008	9,700	1,150	0,000	2,815	5,643	8,460	11,180	13,576	15,537	17,158	18,357	19,448	19,335	18,337
145161	9,900	1,150	0,000	2,778	5,570	8,358	11,061	13,473	15,460	17,102	18,292	19,375	19,270	18,288
148319	10,100	1,150	0,000	2,744	5,501	8,260	10,946	13,373	15,384	17,044	18,223	19,300	19,203	18,237
151481	10,300	1,150	0,000	2,710	5,434	8,166	10,835	13,273	15,309	16,985	18,152	19,223	19,136	18,186
154647	10,500	1,150	0,000	2,678	5,371	8,075	10,728	13,176	15,235	16,922	18,078	19,145	19,067	18,134
157816	10,700	1,150	0,000	2,648	5,311	7,989	10,624	13,080	15,163	16,856	18,001	19,065	18,997	18,082
160990	10,900	1,150	0,000	2,619	5,253	7,905	10,524	12,985	15,091	16,787	17,922	18,983	18,926	18,029
164168	11,100	1,150	0,000	2,592	5,198	7,826	10,428	12,893	15,020	16,715	17,841	18,901	18,854	17,975
167349	11,300	1,150	0,000	2,566	5,146	7,749	10,335	12,802	14,950	16,640	17,757	18,816	18,782	17,921
170535	11,500	1,150	0,000	2,541	5,095	7,675	10,246	12,713	14,881	16,562	17,672	18,731	18,708	17,867
173724	11,700	1,150	0,000	2,517	5,047	7,605	10,159	12,626	14,811	16,482	17,584	18,644	18,634	17,812
176917	11,900	1,150	0,000	2,494	5,002	7,537	10,076	12,540	14,740	16,399	17,495	18,556	18,559	17,756
180114	12,100	1,150	0,000	2,472	4,958	7,472	9,995	12,456	14,668	16,314	17,403	18,467	18,483	17,700
183315	12,300	1,150	0,000	2,451	4,916	7,410	9,918	12,374	14,595	16,227	17,310	18,377	18,407	17,644
186519	12,500	1,150	0,000	2,431	4,876	7,350	9,843	12,294	14,520	16,138	17,216	18,286	18,330	17,588
189728	12,700	1,150	0,000	2,411	4,837	7,292	9,771	12,216	14,444	16,047	17,120	18,194	18,253	17,531
192941	12,900	1,150	0,000	2,393	4,800	7,237	9,702	12,141	14,364	15,954	17,022	18,101	18,174	17,474
196157	13,100	1,150	0,000	2,376	4,765	7,184	9,635	12,068	14,283	15,860	16,923	18,008	18,096	17,417
199376	13,300	1,150	0,000	2,359	4,732	7,134	9,571	11,997	14,200	15,764	16,823	17,913	18,017	17,359
202599	13,500	1,150	0,000	2,343	4,700	7,085	9,509	11,928	14,115	15,666	16,721	17,818	17,937	17,301

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
205825	13,700	1,150	0,000	2,327	4,669	7,039	9,450	11,862	14,028	15,566	16,619	17,722	17,857	17,243
209055	13,900	1,150	0,000	2,313	4,639	6,995	9,393	11,798	13,939	15,466	16,515	17,625	17,777	17,185
212287	14,100	1,150	0,000	2,299	4,611	6,953	9,338	11,736	13,849	15,364	16,410	17,527	17,696	17,127
215522	14,300	1,150	0,000	2,285	4,584	6,912	9,285	11,674	13,758	15,260	16,304	17,429	17,615	17,068
218761	14,500	1,150	0,000	2,272	4,558	6,873	9,234	11,612	13,665	15,156	16,197	17,330	17,533	17,010
222003	14,700	1,150	0,000	2,260	4,534	6,836	9,185	11,550	13,571	15,050	16,089	17,230	17,451	16,951
225248	14,900	1,150	0,000	2,248	4,510	6,801	9,138	11,488	13,476	14,943	15,981	17,130	17,369	16,892
228498	15,100	1,150	0,000	2,237	4,488	6,767	9,093	11,427	13,380	14,835	15,871	17,029	17,286	16,833
231750	15,300	1,150	0,000	2,226	4,466	6,735	9,050	11,364	13,283	14,726	15,760	16,927	17,203	16,774
235005	15,500	1,150	0,000	2,216	4,446	6,704	9,008	11,301	13,186	14,617	15,649	16,825	17,120	16,714
238264	15,700	1,150	0,000	2,206	4,426	6,675	8,969	11,236	13,089	14,506	15,537	16,723	17,037	16,655
241527	15,900	1,150	0,000	2,197	4,408	6,647	8,931	11,171	12,991	14,395	15,424	16,620	16,953	16,596
244793	16,100	1,150	0,000	2,188	4,390	6,620	8,895	11,104	12,893	14,283	15,311	16,517	16,868	16,536
248062	16,300	1,150	0,000	2,180	4,373	6,595	8,860	11,036	12,795	14,171	15,196	16,412	16,784	16,476
251335	16,500	1,150	0,000	2,172	4,357	6,570	8,827	10,968	12,695	14,058	15,081	16,307	16,699	16,416
254612	16,700	1,150	0,000	2,164	4,342	6,547	8,796	10,899	12,597	13,945	14,966	16,202	16,614	16,356
257893	16,900	1,150	0,000	2,157	4,327	6,525	8,764	10,829	12,498	13,831	14,850	16,097	16,528	16,295
261178	17,100	1,150	0,000	2,150	4,314	6,504	8,733	10,759	12,399	13,716	14,733	15,991	16,442	16,235
264467	17,300	1,150	0,000	2,144	4,301	6,485	8,701	10,687	12,299	13,602	14,616	15,885	16,356	16,174
267761	17,500	1,150	0,000	2,138	4,289	6,466	8,669	10,615	12,200	13,487	14,499	15,779	16,270	16,113
271058	17,700	1,150	0,000	2,132	4,277	6,448	8,636	10,542	12,101	13,373	14,381	15,671	16,183	16,052
274360	17,900	1,150	0,000	2,127	4,266	6,431	8,602	10,468	12,001	13,259	14,263	15,564	16,096	15,990
277667	18,100	1,150	0,000	2,122	4,256	6,415	8,566	10,394	11,902	13,145	14,145	15,456	16,009	15,929
280979	18,300	1,150	0,000	2,117	4,246	6,400	8,529	10,319	11,802	13,031	14,026	15,348	15,921	15,867
284295	18,500	1,150	0,000	2,112	4,237	6,386	8,489	10,243	11,702	12,917	13,907	15,239	15,833	15,805
287615	18,700	1,150	0,000	2,108	4,228	6,372	8,448	10,167	11,603	12,804	13,788	15,131	15,745	15,743
290938	18,900	1,150	0,000	2,104	4,220	6,360	8,405	10,090	11,503	12,691	13,668	15,022	15,657	15,681
294264	19,100	1,150	0,000	2,101	4,213	6,348	8,361	10,013	11,403	12,578	13,550	14,912	15,568	15,619
297592	19,300	1,150	0,000	2,097	4,206	6,337	8,314	9,935	11,304	12,465	13,431	14,802	15,479	15,556
300923	19,500	1,150	0,000	2,094	4,199	6,325	8,266	9,856	11,204	12,352	13,313	14,692	15,390	15,494
304256	19,700	1,150	0,000	2,091	4,193	6,313	8,216	9,777	11,105	12,240	13,196	14,582	15,301	15,432
307591	19,900	1,150	0,000	2,088	4,187	6,299	8,164	9,697	11,005	12,128	13,079	14,472	15,212	15,369
310928	20,100	1,150	0,000	2,086	4,182	6,283	8,111	9,617	10,906	12,017	12,962	14,362	15,123	15,307
314267	20,300	1,150	0,000	2,084	4,178	6,266	8,056	9,536	10,807	11,906	12,845	14,252	15,033	15,243
317608	20,500	1,150	0,000	2,082	4,173	6,247	8,000	9,455	10,707	11,795	12,730	14,142	14,944	15,181
320951	20,700	1,150	0,000	2,080	4,170	6,226	7,941	9,372	10,608	11,685	12,614	14,032	14,854	15,118
324296	20,900	1,150	0,000	2,078	4,166	6,201	7,882	9,290	10,509	11,575	12,499	13,922	14,765	15,055
327644	21,100	1,150	0,000	2,077	4,163	6,174	7,820	9,206	10,410	11,466	12,385	13,812	14,675	14,993
330993	21,300	1,150	0,000	2,076	4,161	6,144	7,757	9,122	10,312	11,357	12,271	13,702	14,586	14,930
334345	21,500	1,150	0,000	2,075	4,158	6,111	7,692	9,037	10,213	11,249	12,158	13,593	14,497	14,867
337699	21,700	1,150	0,000	2,074	4,156	6,075	7,626	8,951	10,114	11,141	12,046	13,485	14,407	14,805

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
341055	21,900	1,150	0,000	2,073	4,154	6,036	7,558	8,865	10,015	11,034	11,934	13,377	14,318	14,742
344414	22,100	1,150	0,000	2,073	4,150	5,993	7,488	8,778	9,916	10,927	11,823	13,270	14,229	14,680
347775	22,300	1,150	0,000	2,073	4,145	5,948	7,417	8,690	9,815	10,820	11,712	13,163	14,140	14,617



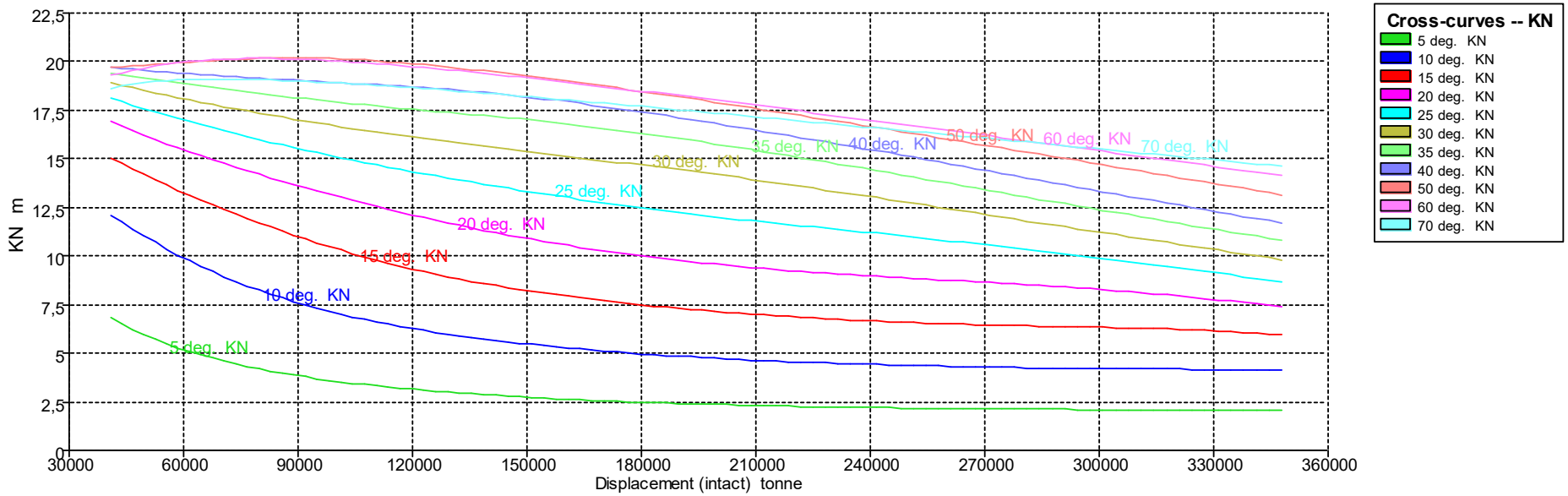
11.3 Initial Trim = 2,3 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
40866	3,100	2,300	0,000	6,858	12,107	15,062	16,900	18,117	18,925	19,429	19,694	19,697	19,307	18,640
43772	3,300	2,300	0,000	6,523	11,738	14,765	16,664	17,934	18,789	19,339	19,648	19,739	19,435	18,749
46695	3,500	2,300	0,000	6,222	11,379	14,476	16,433	17,754	18,655	19,250	19,603	19,780	19,555	18,839

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
49633	3,700	2,300	0,000	5,950	11,031	14,194	16,207	17,577	18,525	19,163	19,558	19,820	19,667	18,912
52585	3,900	2,300	0,000	5,702	10,695	13,918	15,986	17,405	18,396	19,077	19,515	19,860	19,768	18,970
55551	4,100	2,300	0,000	5,476	10,369	13,649	15,770	17,236	18,271	18,993	19,471	19,898	19,860	19,015
58530	4,300	2,300	0,000	5,269	10,055	13,387	15,559	17,070	18,147	18,910	19,429	19,936	19,940	19,048
61521	4,500	2,300	0,000	5,079	9,753	13,130	15,353	16,907	18,027	18,829	19,387	19,973	20,006	19,072
64523	4,700	2,300	0,000	4,902	9,464	12,879	15,150	16,749	17,908	18,749	19,346	20,010	20,060	19,088
67536	4,900	2,300	0,000	4,739	9,189	12,635	14,952	16,593	17,792	18,671	19,306	20,045	20,102	19,097
70558	5,100	2,300	0,000	4,589	8,928	12,396	14,758	16,441	17,678	18,595	19,266	20,079	20,133	19,099
73590	5,300	2,300	0,000	4,448	8,681	12,162	14,568	16,291	17,567	18,520	19,227	20,110	20,153	19,096
76629	5,500	2,300	0,000	4,318	8,448	11,934	14,382	16,145	17,457	18,446	19,189	20,138	20,165	19,088
79676	5,700	2,300	0,000	4,196	8,230	11,711	14,200	16,001	17,350	18,374	19,152	20,161	20,168	19,076
82729	5,900	2,300	0,000	4,082	8,025	11,493	14,021	15,860	17,245	18,304	19,116	20,179	20,164	19,059
85789	6,100	2,300	0,000	3,975	7,832	11,281	13,846	15,722	17,141	18,234	19,081	20,190	20,154	19,039
88856	6,300	2,300	0,000	3,875	7,649	11,074	13,674	15,586	17,040	18,167	19,046	20,194	20,138	19,016
91929	6,500	2,300	0,000	3,781	7,476	10,873	13,505	15,453	16,940	18,100	19,012	20,191	20,117	18,990
95009	6,700	2,300	0,000	3,692	7,313	10,677	13,339	15,322	16,843	18,035	18,979	20,181	20,091	18,962
98093	6,900	2,300	0,000	3,609	7,159	10,487	13,176	15,193	16,747	17,970	18,946	20,164	20,060	18,931
101184	7,100	2,300	0,000	3,530	7,013	10,303	13,017	15,066	16,652	17,907	18,914	20,141	20,026	18,899
104279	7,300	2,300	0,000	3,456	6,874	10,126	12,860	14,941	16,559	17,845	18,882	20,112	19,988	18,864
107380	7,500	2,300	0,000	3,386	6,743	9,954	12,706	14,819	16,468	17,784	18,851	20,078	19,947	18,827
110485	7,700	2,300	0,000	3,319	6,618	9,790	12,555	14,698	16,378	17,724	18,820	20,039	19,903	18,789
113596	7,900	2,300	0,000	3,257	6,500	9,632	12,407	14,580	16,290	17,666	18,787	19,995	19,856	18,749
116711	8,100	2,300	0,000	3,198	6,387	9,482	12,261	14,463	16,203	17,608	18,753	19,948	19,806	18,708
119831	8,300	2,300	0,000	3,142	6,280	9,337	12,118	14,348	16,117	17,551	18,717	19,897	19,755	18,665
122956	8,500	2,300	0,000	3,089	6,178	9,199	11,978	14,235	16,032	17,494	18,678	19,842	19,701	18,622
126085	8,700	2,300	0,000	3,039	6,081	9,067	11,841	14,123	15,949	17,439	18,636	19,784	19,645	18,577
129219	8,900	2,300	0,000	2,991	5,988	8,940	11,707	14,013	15,867	17,385	18,589	19,723	19,587	18,531
132357	9,100	2,300	0,000	2,946	5,900	8,818	11,576	13,905	15,786	17,331	18,539	19,659	19,527	18,484
135499	9,300	2,300	0,000	2,903	5,816	8,702	11,449	13,799	15,707	17,277	18,484	19,593	19,465	18,436
138645	9,500	2,300	0,000	2,862	5,735	8,590	11,324	13,694	15,628	17,223	18,426	19,524	19,402	18,388
141796	9,700	2,300	0,000	2,823	5,659	8,483	11,202	13,591	15,551	17,168	18,364	19,453	19,338	18,339
144951	9,900	2,300	0,000	2,786	5,585	8,380	11,083	13,489	15,474	17,113	18,299	19,380	19,272	18,289
148111	10,100	2,300	0,000	2,751	5,515	8,281	10,968	13,389	15,399	17,055	18,231	19,305	19,205	18,238
151275	10,300	2,300	0,000	2,717	5,449	8,187	10,858	13,290	15,324	16,994	18,160	19,229	19,138	18,187
154444	10,500	2,300	0,000	2,685	5,385	8,096	10,750	13,193	15,251	16,931	18,086	19,150	19,069	18,135
157616	10,700	2,300	0,000	2,655	5,324	8,009	10,647	13,098	15,178	16,865	18,010	19,070	18,999	18,082
160793	10,900	2,300	0,000	2,626	5,266	7,925	10,547	13,004	15,107	16,796	17,931	18,988	18,928	18,029
163974	11,100	2,300	0,000	2,598	5,211	7,844	10,451	12,912	15,036	16,724	17,850	18,905	18,856	17,975
167158	11,300	2,300	0,000	2,572	5,158	7,767	10,357	12,822	14,966	16,649	17,766	18,821	18,783	17,921
170347	11,500	2,300	0,000	2,547	5,107	7,693	10,268	12,733	14,896	16,572	17,680	18,735	18,709	17,867
173540	11,700	2,300	0,000	2,522	5,059	7,622	10,181	12,646	14,825	16,492	17,592	18,648	18,635	17,812

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
176736	11,900	2,300	0,000	2,499	5,013	7,554	10,097	12,561	14,754	16,409	17,503	18,560	18,560	17,756
179937	12,100	2,300	0,000	2,477	4,969	7,489	10,017	12,478	14,682	16,325	17,411	18,471	18,484	17,700
183142	12,300	2,300	0,000	2,456	4,927	7,426	9,939	12,396	14,609	16,238	17,318	18,380	18,408	17,644
186351	12,500	2,300	0,000	2,436	4,886	7,366	9,864	12,316	14,534	16,149	17,223	18,289	18,331	17,587
189562	12,700	2,300	0,000	2,417	4,848	7,308	9,792	12,238	14,457	16,058	17,127	18,197	18,254	17,531
192778	12,900	2,300	0,000	2,398	4,811	7,252	9,722	12,163	14,377	15,965	17,029	18,105	18,175	17,474
195997	13,100	2,300	0,000	2,380	4,775	7,199	9,655	12,090	14,296	15,870	16,930	18,011	18,097	17,417
199221	13,300	2,300	0,000	2,364	4,741	7,148	9,591	12,019	14,213	15,774	16,829	17,916	18,018	17,359
202447	13,500	2,300	0,000	2,347	4,709	7,100	9,529	11,950	14,128	15,676	16,728	17,821	17,938	17,302
205677	13,700	2,300	0,000	2,332	4,678	7,053	9,469	11,884	14,041	15,576	16,625	17,724	17,858	17,244
208910	13,900	2,300	0,000	2,317	4,648	7,009	9,411	11,819	13,953	15,475	16,521	17,627	17,778	17,186
212146	14,100	2,300	0,000	2,303	4,620	6,966	9,356	11,755	13,863	15,373	16,415	17,529	17,697	17,127
215387	14,300	2,300	0,000	2,289	4,593	6,925	9,303	11,692	13,771	15,269	16,309	17,431	17,616	17,069
218631	14,500	2,300	0,000	2,277	4,567	6,887	9,251	11,630	13,678	15,164	16,202	17,332	17,534	17,010
221879	14,700	2,300	0,000	2,264	4,542	6,849	9,202	11,567	13,584	15,058	16,094	17,232	17,452	16,951
225130	14,900	2,300	0,000	2,252	4,518	6,814	9,155	11,505	13,489	14,951	15,985	17,131	17,370	16,893
228384	15,100	2,300	0,000	2,241	4,496	6,780	9,110	11,442	13,392	14,843	15,875	17,030	17,287	16,833
231642	15,300	2,300	0,000	2,230	4,474	6,747	9,066	11,379	13,295	14,734	15,764	16,929	17,204	16,774
234903	15,500	2,300	0,000	2,220	4,453	6,716	9,025	11,314	13,198	14,624	15,652	16,827	17,120	16,715
238168	15,700	2,300	0,000	2,210	4,434	6,687	8,985	11,249	13,100	14,513	15,540	16,724	17,037	16,656
241437	15,900	2,300	0,000	2,201	4,415	6,659	8,947	11,183	13,002	14,402	15,427	16,621	16,953	16,596
244710	16,100	2,300	0,000	2,192	4,397	6,632	8,910	11,116	12,903	14,290	15,313	16,517	16,868	16,536
247987	16,300	2,300	0,000	2,183	4,381	6,606	8,875	11,048	12,804	14,177	15,199	16,413	16,783	16,476
251268	16,500	2,300	0,000	2,175	4,364	6,582	8,841	10,979	12,705	14,064	15,084	16,308	16,698	16,416
254553	16,700	2,300	0,000	2,168	4,349	6,558	8,808	10,909	12,605	13,950	14,968	16,203	16,613	16,355
257843	16,900	2,300	0,000	2,161	4,335	6,536	8,776	10,839	12,506	13,835	14,852	16,097	16,527	16,295
261137	17,100	2,300	0,000	2,154	4,321	6,515	8,743	10,767	12,406	13,721	14,735	15,991	16,441	16,234
264435	17,300	2,300	0,000	2,147	4,308	6,495	8,711	10,695	12,306	13,606	14,617	15,884	16,355	16,173
267739	17,500	2,300	0,000	2,141	4,296	6,476	8,678	10,622	12,205	13,491	14,500	15,777	16,268	16,111
271047	17,700	2,300	0,000	2,136	4,284	6,458	8,643	10,548	12,105	13,376	14,382	15,670	16,181	16,050
274360	17,900	2,300	0,000	2,130	4,273	6,441	8,608	10,473	12,005	13,261	14,263	15,561	16,093	15,988
277677	18,100	2,300	0,000	2,125	4,262	6,425	8,571	10,398	11,904	13,146	14,145	15,453	16,005	15,926
280997	18,300	2,300	0,000	2,120	4,252	6,410	8,533	10,322	11,803	13,032	14,026	15,345	15,917	15,864
284320	18,500	2,300	0,000	2,115	4,243	6,395	8,493	10,245	11,703	12,918	13,906	15,236	15,829	15,802
287646	18,700	2,300	0,000	2,111	4,234	6,382	8,451	10,168	11,602	12,803	13,787	15,127	15,741	15,740
290974	18,900	2,300	0,000	2,107	4,226	6,369	8,407	10,090	11,502	12,690	13,667	15,017	15,652	15,678
294304	19,100	2,300	0,000	2,103	4,219	6,356	8,362	10,012	11,401	12,576	13,548	14,908	15,563	15,615
297636	19,300	2,300	0,000	2,100	4,211	6,343	8,315	9,933	11,301	12,463	13,430	14,798	15,474	15,552
300971	19,500	2,300	0,000	2,097	4,205	6,330	8,266	9,854	11,201	12,350	13,311	14,688	15,385	15,490
304307	19,700	2,300	0,000	2,094	4,199	6,316	8,215	9,774	11,101	12,237	13,193	14,578	15,296	15,427
307646	19,900	2,300	0,000	2,091	4,193	6,301	8,162	9,693	11,001	12,125	13,075	14,468	15,207	15,365

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
310986	20,100	2,300	0,000	2,088	4,188	6,285	8,108	9,612	10,901	12,013	12,958	14,358	15,118	15,302
314329	20,300	2,300	0,000	2,086	4,183	6,267	8,052	9,530	10,800	11,900	12,841	14,247	15,028	15,239
317674	20,500	2,300	0,000	2,084	4,179	6,246	7,995	9,448	10,700	11,789	12,725	14,137	14,939	15,177
321021	20,700	2,300	0,000	2,082	4,175	6,223	7,936	9,364	10,600	11,678	12,608	14,026	14,849	15,114
324370	20,900	2,300	0,000	2,081	4,172	6,198	7,875	9,280	10,500	11,568	12,493	13,916	14,760	15,051
327722	21,100	2,300	0,000	2,080	4,169	6,169	7,813	9,196	10,400	11,457	12,378	13,806	14,671	14,989
331075	21,300	2,300	0,000	2,078	4,166	6,138	7,748	9,111	10,301	11,348	12,263	13,696	14,580	14,926
334431	21,500	2,300	0,000	2,077	4,163	6,104	7,682	9,025	10,201	11,239	12,150	13,587	14,491	14,864
337790	21,700	2,300	0,000	2,077	4,159	6,067	7,614	8,938	10,101	11,130	12,036	13,478	14,402	14,801
341151	21,900	2,300	0,000	2,076	4,154	6,026	7,545	8,851	10,001	11,022	11,924	13,370	14,313	14,739
344514	22,100	2,300	0,000	2,076	4,149	5,983	7,474	8,762	9,901	10,914	11,812	13,262	14,224	14,677
347880	22,300	2,300	0,000	2,075	4,142	5,936	7,402	8,673	9,801	10,807	11,701	13,155	14,135	14,615

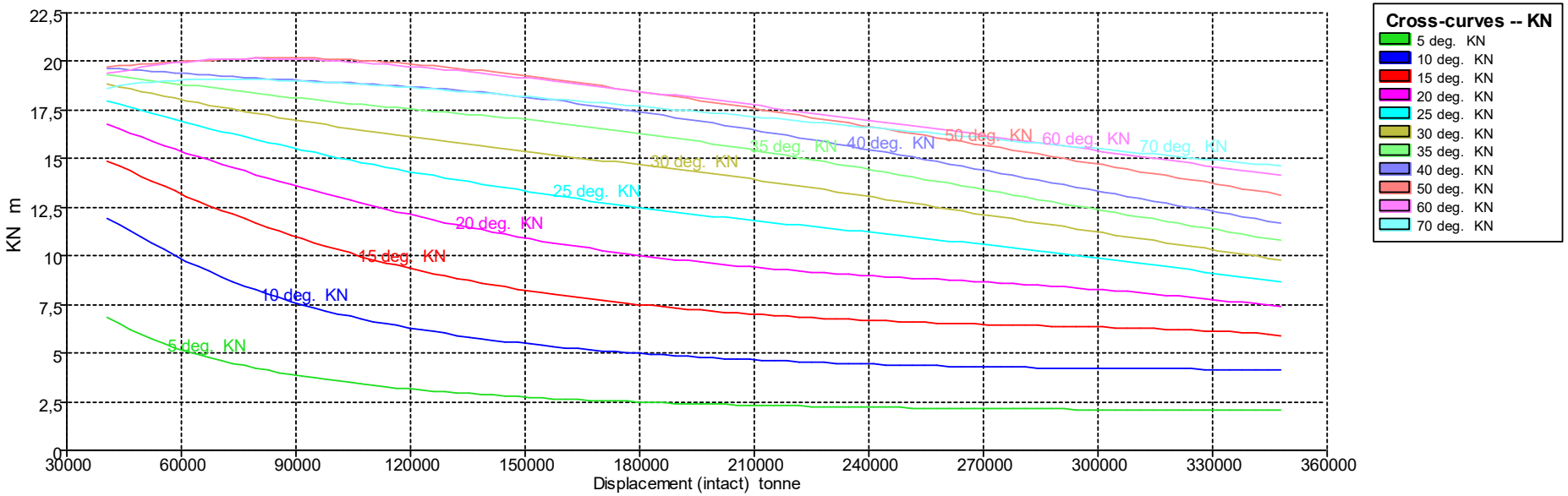


11.4 Initial Trim = 3,45 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
40699	3,100	3,450	0,000	6,841	11,958	14,902	16,755	17,994	18,826	19,359	19,653	19,720	19,383	18,641
43598	3,300	3,450	0,000	6,519	11,617	14,627	16,538	17,826	18,703	19,278	19,614	19,762	19,492	18,741
46515	3,500	3,450	0,000	6,225	11,281	14,357	16,324	17,660	18,581	19,197	19,574	19,803	19,595	18,826
49449	3,700	3,450	0,000	5,957	10,954	14,092	16,112	17,496	18,459	19,116	19,534	19,844	19,691	18,897
52398	3,900	3,450	0,000	5,713	10,635	13,830	15,903	17,333	18,339	19,037	19,494	19,883	19,779	18,956
55362	4,100	3,450	0,000	5,488	10,325	13,573	15,697	17,172	18,221	18,958	19,454	19,922	19,859	19,002
58340	4,300	3,450	0,000	5,283	10,024	13,321	15,495	17,014	18,104	18,880	19,414	19,959	19,931	19,037
61330	4,500	3,450	0,000	5,093	9,734	13,074	15,296	16,859	17,989	18,803	19,375	19,996	19,993	19,063
64332	4,700	3,450	0,000	4,918	9,456	12,831	15,100	16,706	17,875	18,727	19,337	20,031	20,044	19,080
67344	4,900	3,450	0,000	4,756	9,189	12,594	14,908	16,555	17,763	18,652	19,299	20,063	20,085	19,090
70366	5,100	3,450	0,000	4,605	8,935	12,362	14,720	16,407	17,653	18,579	19,261	20,093	20,117	19,093
73396	5,300	3,450	0,000	4,464	8,693	12,135	14,535	16,262	17,544	18,506	19,225	20,120	20,139	19,090
76435	5,500	3,450	0,000	4,333	8,464	11,912	14,353	16,119	17,438	18,435	19,189	20,142	20,152	19,083
79482	5,700	3,450	0,000	4,211	8,247	11,695	14,174	15,979	17,333	18,366	19,153	20,160	20,157	19,070
82536	5,900	3,450	0,000	4,097	8,043	11,482	13,999	15,841	17,230	18,297	19,119	20,173	20,154	19,054
85596	6,100	3,450	0,000	3,990	7,850	11,275	13,827	15,705	17,129	18,230	19,084	20,181	20,145	19,035
88663	6,300	3,450	0,000	3,889	7,668	11,072	13,658	15,572	17,030	18,163	19,051	20,183	20,130	19,012
91736	6,500	3,450	0,000	3,794	7,496	10,875	13,492	15,440	16,933	18,098	19,018	20,179	20,109	18,986
94815	6,700	3,450	0,000	3,705	7,333	10,683	13,329	15,311	16,837	18,034	18,985	20,169	20,083	18,958
97899	6,900	3,450	0,000	3,621	7,179	10,496	13,169	15,184	16,742	17,971	18,953	20,152	20,053	18,927
100989	7,100	3,450	0,000	3,542	7,033	10,315	13,012	15,060	16,649	17,909	18,922	20,130	20,019	18,895
104085	7,300	3,450	0,000	3,467	6,894	10,140	12,858	14,936	16,558	17,848	18,890	20,102	19,982	18,860
107185	7,500	3,450	0,000	3,397	6,763	9,971	12,706	14,816	16,468	17,789	18,858	20,068	19,941	18,823
110291	7,700	3,450	0,000	3,330	6,638	9,809	12,558	14,697	16,379	17,730	18,825	20,030	19,897	18,785
113401	7,900	3,450	0,000	3,267	6,519	9,652	12,411	14,580	16,292	17,672	18,790	19,987	19,850	18,745
116516	8,100	3,450	0,000	3,208	6,406	9,502	12,268	14,464	16,206	17,615	18,754	19,940	19,801	18,704
119636	8,300	3,450	0,000	3,152	6,299	9,359	12,127	14,351	16,121	17,558	18,716	19,890	19,749	18,661
122761	8,500	3,450	0,000	3,098	6,196	9,221	11,989	14,239	16,037	17,503	18,675	19,835	19,695	18,617
125891	8,700	3,450	0,000	3,048	6,099	9,088	11,854	14,129	15,955	17,448	18,631	19,778	19,639	18,572
129025	8,900	3,450	0,000	3,000	6,006	8,962	11,721	14,020	15,874	17,394	18,584	19,717	19,581	18,526
132165	9,100	3,450	0,000	2,954	5,917	8,840	11,592	13,913	15,794	17,339	18,534	19,654	19,521	18,479
135309	9,300	3,450	0,000	2,911	5,832	8,724	11,465	13,808	15,715	17,285	18,479	19,588	19,460	18,431
138457	9,500	3,450	0,000	2,870	5,751	8,612	11,341	13,704	15,637	17,229	18,422	19,519	19,397	18,383
141610	9,700	3,450	0,000	2,831	5,674	8,504	11,220	13,602	15,560	17,173	18,361	19,449	19,332	18,333
144767	9,900	3,450	0,000	2,794	5,600	8,401	11,103	13,501	15,485	17,116	18,296	19,376	19,266	18,283
147929	10,100	3,450	0,000	2,758	5,530	8,302	10,990	13,402	15,410	17,056	18,229	19,301	19,200	18,232
151095	10,300	3,450	0,000	2,725	5,463	8,207	10,879	13,304	15,336	16,995	18,158	19,224	19,132	18,181
154265	10,500	3,450	0,000	2,693	5,399	8,116	10,772	13,208	15,263	16,931	18,084	19,146	19,062	18,129

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
157440	10,700	3,450	0,000	2,662	5,338	8,029	10,669	13,114	15,191	16,865	18,008	19,065	18,992	18,076
160619	10,900	3,450	0,000	2,633	5,280	7,944	10,569	13,021	15,119	16,796	17,929	18,984	18,921	18,023
163803	11,100	3,450	0,000	2,605	5,224	7,864	10,473	12,929	15,048	16,724	17,848	18,900	18,849	17,969
166991	11,300	3,450	0,000	2,578	5,171	7,786	10,380	12,840	14,977	16,649	17,764	18,816	18,776	17,915
170184	11,500	3,450	0,000	2,553	5,120	7,712	10,290	12,752	14,907	16,572	17,679	18,730	18,702	17,860
173380	11,700	3,450	0,000	2,528	5,071	7,640	10,203	12,666	14,835	16,492	17,591	18,643	18,628	17,805
176581	11,900	3,450	0,000	2,505	5,025	7,572	10,119	12,581	14,763	16,410	17,501	18,555	18,553	17,750
179785	12,100	3,450	0,000	2,483	4,980	7,506	10,039	12,498	14,690	16,325	17,410	18,465	18,477	17,694
182992	12,300	3,450	0,000	2,462	4,938	7,443	9,961	12,417	14,616	16,239	17,316	18,375	18,401	17,639
186204	12,500	3,450	0,000	2,441	4,897	7,382	9,886	12,337	14,540	16,150	17,222	18,284	18,324	17,582
189420	12,700	3,450	0,000	2,422	4,858	7,324	9,813	12,260	14,463	16,059	17,125	18,192	18,247	17,526
192639	12,900	3,450	0,000	2,403	4,821	7,268	9,744	12,185	14,383	15,966	17,027	18,099	18,169	17,469
195861	13,100	3,450	0,000	2,386	4,786	7,215	9,676	12,112	14,302	15,871	16,928	18,005	18,091	17,412
199088	13,300	3,450	0,000	2,369	4,751	7,164	9,612	12,041	14,219	15,775	16,827	17,910	18,012	17,355
202317	13,500	3,450	0,000	2,352	4,719	7,115	9,549	11,972	14,134	15,677	16,725	17,814	17,932	17,297
205551	13,700	3,450	0,000	2,337	4,688	7,068	9,489	11,904	14,047	15,577	16,622	17,718	17,852	17,240
208789	13,900	3,450	0,000	2,322	4,658	7,024	9,431	11,838	13,959	15,476	16,518	17,621	17,772	17,182
212031	14,100	3,450	0,000	2,308	4,629	6,981	9,375	11,773	13,869	15,374	16,412	17,523	17,691	17,124
215276	14,300	3,450	0,000	2,294	4,602	6,940	9,322	11,708	13,778	15,270	16,306	17,424	17,610	17,065
218525	14,500	3,450	0,000	2,281	4,576	6,901	9,270	11,645	13,685	15,165	16,198	17,325	17,529	17,007
221777	14,700	3,450	0,000	2,269	4,551	6,863	9,221	11,581	13,591	15,059	16,090	17,225	17,447	16,948
225034	14,900	3,450	0,000	2,257	4,527	6,828	9,174	11,517	13,495	14,951	15,981	17,124	17,364	16,889
228294	15,100	3,450	0,000	2,245	4,504	6,794	9,128	11,453	13,399	14,843	15,871	17,023	17,281	16,830
231558	15,300	3,450	0,000	2,234	4,483	6,761	9,084	11,388	13,302	14,734	15,760	16,922	17,198	16,771
234826	15,500	3,450	0,000	2,224	4,462	6,730	9,042	11,323	13,204	14,624	15,648	16,819	17,114	16,711
238098	15,700	3,450	0,000	2,214	4,442	6,700	9,002	11,257	13,106	14,513	15,535	16,717	17,030	16,652
241375	15,900	3,450	0,000	2,205	4,424	6,672	8,964	11,189	13,007	14,401	15,422	16,613	16,946	16,592
244655	16,100	3,450	0,000	2,196	4,406	6,644	8,926	11,122	12,908	14,289	15,308	16,509	16,862	16,532
247941	16,300	3,450	0,000	2,188	4,389	6,618	8,890	11,053	12,808	14,176	15,193	16,405	16,777	16,471
251231	16,500	3,450	0,000	2,180	4,373	6,594	8,855	10,983	12,708	14,062	15,078	16,300	16,691	16,411
254526	16,700	3,450	0,000	2,172	4,357	6,570	8,820	10,913	12,607	13,948	14,962	16,194	16,606	16,350
257825	16,900	3,450	0,000	2,165	4,343	6,548	8,786	10,841	12,507	13,833	14,845	16,088	16,520	16,289
261129	17,100	3,450	0,000	2,158	4,329	6,527	8,751	10,769	12,406	13,718	14,728	15,981	16,433	16,228
264439	17,300	3,450	0,000	2,151	4,316	6,507	8,717	10,696	12,305	13,602	14,610	15,875	16,346	16,166
267752	17,500	3,450	0,000	2,145	4,303	6,487	8,682	10,622	12,204	13,487	14,492	15,767	16,259	16,105
271069	17,700	3,450	0,000	2,139	4,291	6,469	8,646	10,547	12,103	13,371	14,374	15,659	16,172	16,043
274390	17,900	3,450	0,000	2,134	4,280	6,452	8,609	10,472	12,001	13,256	14,255	15,551	16,084	15,981
277712	18,100	3,450	0,000	2,128	4,269	6,436	8,571	10,395	11,900	13,140	14,136	15,443	15,996	15,919
281037	18,300	3,450	0,000	2,124	4,259	6,420	8,531	10,319	11,799	13,025	14,017	15,334	15,908	15,857
284364	18,500	3,450	0,000	2,119	4,250	6,406	8,490	10,241	11,696	12,910	13,898	15,225	15,819	15,795
287694	18,700	3,450	0,000	2,115	4,241	6,391	8,447	10,163	11,595	12,795	13,778	15,116	15,731	15,732

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
291025	18,900	3,450	0,000	2,110	4,233	6,377	8,402	10,084	11,494	12,681	13,658	15,007	15,642	15,670
294359	19,100	3,450	0,000	2,107	4,225	6,362	8,356	10,005	11,392	12,567	13,539	14,897	15,553	15,607
297695	19,300	3,450	0,000	2,103	4,218	6,348	8,308	9,925	11,291	12,453	13,420	14,787	15,464	15,545
301033	19,500	3,450	0,000	2,100	4,211	6,333	8,258	9,844	11,190	12,339	13,301	14,677	15,375	15,482
304373	19,700	3,450	0,000	2,097	4,205	6,317	8,207	9,763	11,089	12,226	13,183	14,566	15,286	15,420
307716	19,900	3,450	0,000	2,094	4,200	6,300	8,153	9,682	10,988	12,113	13,065	14,456	15,197	15,357
311060	20,100	3,450	0,000	2,092	4,194	6,281	8,098	9,600	10,887	12,000	12,947	14,346	15,108	15,295
314407	20,300	3,450	0,000	2,089	4,190	6,261	8,041	9,517	10,786	11,888	12,829	14,235	15,018	15,232
317756	20,500	3,450	0,000	2,087	4,185	6,238	7,982	9,433	10,686	11,776	12,712	14,125	14,928	15,169
321107	20,700	3,450	0,000	2,086	4,181	6,214	7,922	9,349	10,585	11,665	12,596	14,015	14,839	15,107
324460	20,900	3,450	0,000	2,084	4,177	6,186	7,860	9,265	10,485	11,553	12,480	13,905	14,750	15,044
327816	21,100	3,450	0,000	2,083	4,173	6,156	7,796	9,179	10,384	11,443	12,364	13,795	14,660	14,982
331174	21,300	3,450	0,000	2,082	4,169	6,123	7,731	9,093	10,284	11,332	12,250	13,685	14,571	14,920
334535	21,500	3,450	0,000	2,081	4,164	6,087	7,664	9,006	10,183	11,223	12,135	13,576	14,482	14,858
337899	21,700	3,450	0,000	2,080	4,159	6,049	7,595	8,918	10,082	11,113	12,022	13,467	14,393	14,795
341265	21,900	3,450	0,000	2,079	4,152	6,007	7,525	8,829	9,982	11,004	11,909	13,359	14,304	14,733
344633	22,100	3,450	0,000	2,079	4,144	5,963	7,452	8,740	9,881	10,896	11,796	13,251	14,215	14,671
348004	22,300	3,450	0,000	2,079	4,133	5,915	7,378	8,650	9,780	10,788	11,685	13,144	14,126	14,609



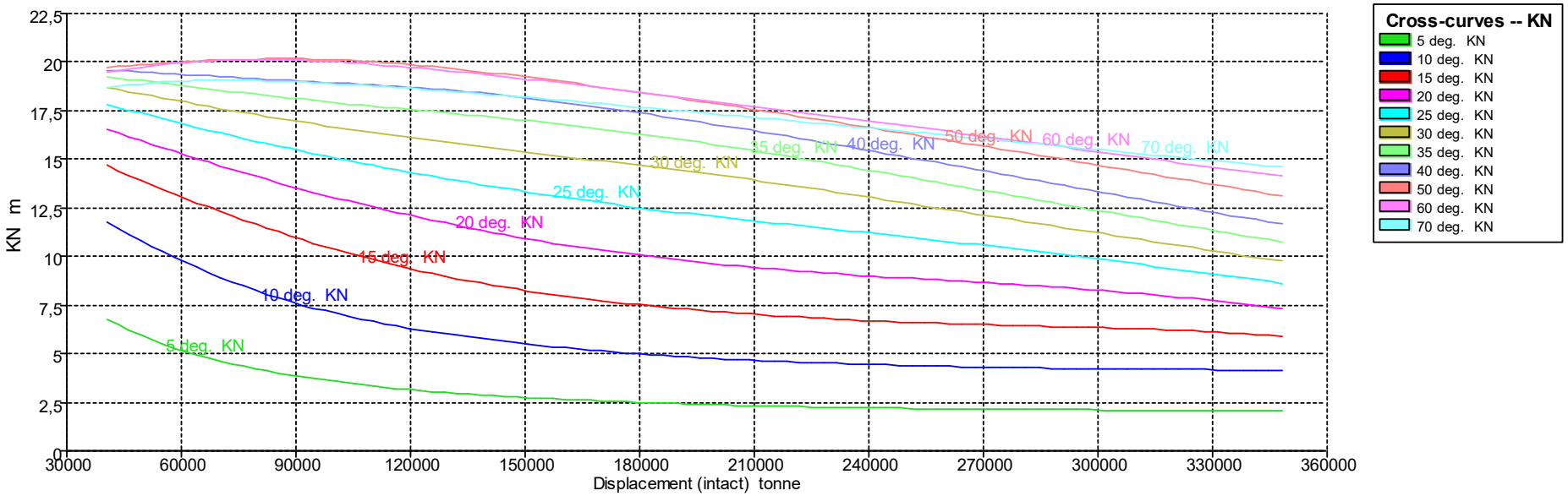
11.5 Initial Trim = 4,6 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
40602	3,100	4,600	0,000	6,777	11,737	14,671	16,547	17,819	18,687	19,259	19,597	19,757	19,465	18,655
43490	3,300	4,600	0,000	6,480	11,431	14,427	16,356	17,673	18,581	19,190	19,564	19,797	19,554	18,738
46398	3,500	4,600	0,000	6,204	11,127	14,183	16,164	17,525	18,473	19,120	19,531	19,837	19,638	18,813
49324	3,700	4,600	0,000	5,946	10,825	13,939	15,971	17,376	18,364	19,048	19,496	19,876	19,717	18,878
52267	3,900	4,600	0,000	5,708	10,531	13,696	15,778	17,226	18,255	18,976	19,461	19,914	19,791	18,933
55227	4,100	4,600	0,000	5,489	10,241	13,454	15,585	17,077	18,146	18,905	19,426	19,950	19,859	18,978
58200	4,300	4,600	0,000	5,287	9,960	13,217	15,396	16,930	18,037	18,833	19,391	19,985	19,920	19,014
61187	4,500	4,600	0,000	5,099	9,686	12,984	15,208	16,783	17,929	18,762	19,355	20,018	19,974	19,041
64185	4,700	4,600	0,000	4,926	9,422	12,753	15,022	16,638	17,822	18,691	19,320	20,049	20,021	19,059
67194	4,900	4,600	0,000	4,765	9,167	12,526	14,838	16,495	17,715	18,621	19,286	20,077	20,060	19,070
70213	5,100	4,600	0,000	4,616	8,923	12,303	14,657	16,353	17,610	18,551	19,251	20,101	20,090	19,075
73241	5,300	4,600	0,000	4,476	8,690	12,085	14,479	16,213	17,507	18,483	19,217	20,122	20,111	19,073

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
76278	5,500	4,600	0,000	4,345	8,467	11,870	14,303	16,075	17,404	18,415	19,183	20,138	20,125	19,066
79323	5,700	4,600	0,000	4,223	8,256	11,660	14,130	15,940	17,304	18,348	19,150	20,151	20,131	19,055
82375	5,900	4,600	0,000	4,109	8,054	11,454	13,960	15,806	17,204	18,282	19,117	20,159	20,130	19,040
85434	6,100	4,600	0,000	4,002	7,863	11,253	13,793	15,674	17,106	18,217	19,084	20,163	20,122	19,021
88500	6,300	4,600	0,000	3,901	7,683	11,056	13,628	15,544	17,010	18,153	19,052	20,162	20,108	18,999
91572	6,500	4,600	0,000	3,806	7,512	10,865	13,466	15,416	16,915	18,090	19,020	20,156	20,088	18,973
94650	6,700	4,600	0,000	3,717	7,350	10,678	13,307	15,290	16,822	18,028	18,988	20,145	20,063	18,946
97734	6,900	4,600	0,000	3,633	7,196	10,496	13,151	15,166	16,729	17,967	18,956	20,128	20,034	18,915
100823	7,100	4,600	0,000	3,553	7,050	10,319	12,997	15,043	16,639	17,906	18,924	20,105	20,001	18,882
103917	7,300	4,600	0,000	3,478	6,912	10,148	12,846	14,923	16,549	17,847	18,891	20,078	19,964	18,848
107017	7,500	4,600	0,000	3,408	6,781	9,983	12,697	14,804	16,461	17,788	18,858	20,045	19,924	18,811
110122	7,700	4,600	0,000	3,341	6,656	9,823	12,551	14,687	16,374	17,731	18,822	20,008	19,880	18,773
113232	7,900	4,600	0,000	3,278	6,537	9,668	12,408	14,572	16,288	17,674	18,786	19,966	19,834	18,733
116347	8,100	4,600	0,000	3,218	6,424	9,520	12,267	14,459	16,203	17,618	18,747	19,921	19,785	18,692
119467	8,300	4,600	0,000	3,161	6,316	9,377	12,129	14,347	16,120	17,562	18,706	19,870	19,733	18,649
122593	8,500	4,600	0,000	3,107	6,213	9,239	11,994	14,237	16,038	17,507	18,663	19,817	19,679	18,606
125723	8,700	4,600	0,000	3,057	6,115	9,108	11,861	14,128	15,956	17,452	18,618	19,760	19,623	18,561
128859	8,900	4,600	0,000	3,008	6,022	8,981	11,730	14,021	15,876	17,397	18,570	19,700	19,565	18,515
131999	9,100	4,600	0,000	2,963	5,933	8,861	11,603	13,916	15,797	17,342	18,519	19,637	19,506	18,468
135145	9,300	4,600	0,000	2,919	5,848	8,744	11,478	13,812	15,719	17,286	18,464	19,572	19,445	18,420
138295	9,500	4,600	0,000	2,878	5,767	8,632	11,356	13,709	15,642	17,229	18,407	19,504	19,382	18,372
141450	9,700	4,600	0,000	2,839	5,690	8,525	11,237	13,609	15,567	17,171	18,346	19,433	19,318	18,322
144609	9,900	4,600	0,000	2,802	5,616	8,422	11,121	13,509	15,492	17,111	18,282	19,361	19,252	18,272
147773	10,100	4,600	0,000	2,766	5,545	8,323	11,008	13,412	15,417	17,050	18,215	19,286	19,185	18,221
150941	10,300	4,600	0,000	2,732	5,478	8,227	10,899	13,315	15,344	16,987	18,144	19,209	19,117	18,169
154114	10,500	4,600	0,000	2,700	5,414	8,136	10,792	13,220	15,272	16,923	18,071	19,131	19,048	18,117
157291	10,700	4,600	0,000	2,669	5,352	8,048	10,690	13,127	15,200	16,855	17,995	19,051	18,978	18,064
160473	10,900	4,600	0,000	2,640	5,294	7,964	10,590	13,035	15,128	16,786	17,917	18,969	18,907	18,011
163660	11,100	4,600	0,000	2,612	5,237	7,883	10,494	12,945	15,056	16,714	17,836	18,886	18,835	17,958
166851	11,300	4,600	0,000	2,585	5,184	7,805	10,401	12,856	14,985	16,639	17,752	18,802	18,762	17,904
170046	11,500	4,600	0,000	2,559	5,133	7,731	10,312	12,769	14,913	16,562	17,667	18,716	18,689	17,849
173244	11,700	4,600	0,000	2,535	5,084	7,658	10,225	12,684	14,840	16,483	17,579	18,629	18,615	17,795
176448	11,900	4,600	0,000	2,511	5,037	7,590	10,141	12,600	14,766	16,401	17,490	18,541	18,540	17,740
179655	12,100	4,600	0,000	2,489	4,993	7,523	10,061	12,518	14,692	16,316	17,398	18,452	18,464	17,684
182867	12,300	4,600	0,000	2,468	4,950	7,460	9,983	12,437	14,616	16,230	17,305	18,362	18,388	17,628
186081	12,500	4,600	0,000	2,447	4,909	7,399	9,908	12,359	14,540	16,141	17,210	18,270	18,311	17,572
189300	12,700	4,600	0,000	2,428	4,870	7,341	9,835	12,282	14,462	16,050	17,114	18,178	18,234	17,516
192522	12,900	4,600	0,000	2,409	4,832	7,285	9,765	12,207	14,382	15,957	17,015	18,085	18,156	17,460
195748	13,100	4,600	0,000	2,391	4,796	7,232	9,698	12,134	14,300	15,863	16,916	17,991	18,078	17,403
198979	13,300	4,600	0,000	2,374	4,762	7,181	9,633	12,062	14,217	15,767	16,815	17,896	17,999	17,346
202213	13,500	4,600	0,000	2,358	4,729	7,131	9,570	11,992	14,132	15,669	16,713	17,800	17,920	17,288

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
205452	13,700	4,600	0,000	2,342	4,698	7,085	9,510	11,923	14,046	15,569	16,610	17,704	17,841	17,231
208694	13,900	4,600	0,000	2,327	4,668	7,040	9,452	11,855	13,957	15,468	16,505	17,607	17,760	17,173
211940	14,100	4,600	0,000	2,313	4,639	6,997	9,396	11,789	13,868	15,366	16,400	17,509	17,680	17,115
215190	14,300	4,600	0,000	2,299	4,612	6,956	9,342	11,722	13,776	15,261	16,293	17,410	17,599	17,057
218443	14,500	4,600	0,000	2,286	4,586	6,916	9,291	11,656	13,684	15,156	16,186	17,311	17,517	16,999
221702	14,700	4,600	0,000	2,273	4,561	6,879	9,241	11,590	13,589	15,050	16,077	17,211	17,435	16,940
224964	14,900	4,600	0,000	2,261	4,537	6,843	9,193	11,525	13,494	14,943	15,968	17,110	17,353	16,881
228231	15,100	4,600	0,000	2,250	4,514	6,808	9,148	11,459	13,398	14,834	15,857	17,009	17,270	16,822
231502	15,300	4,600	0,000	2,239	4,492	6,775	9,103	11,393	13,300	14,725	15,746	16,907	17,186	16,763
234778	15,500	4,600	0,000	2,229	4,472	6,744	9,061	11,326	13,202	14,614	15,634	16,805	17,103	16,703
238059	15,700	4,600	0,000	2,219	4,452	6,714	9,020	11,258	13,103	14,503	15,521	16,702	17,019	16,643
241344	15,900	4,600	0,000	2,210	4,433	6,685	8,980	11,190	13,004	14,391	15,408	16,598	16,934	16,583
244634	16,100	4,600	0,000	2,201	4,415	6,658	8,941	11,121	12,904	14,279	15,293	16,494	16,849	16,523
247929	16,300	4,600	0,000	2,192	4,398	6,632	8,904	11,052	12,804	14,165	15,178	16,390	16,764	16,462
251229	16,500	4,600	0,000	2,184	4,382	6,607	8,867	10,981	12,703	14,051	15,063	16,284	16,678	16,401
254534	16,700	4,600	0,000	2,176	4,366	6,583	8,830	10,910	12,601	13,936	14,947	16,178	16,592	16,340
257843	16,900	4,600	0,000	2,169	4,351	6,561	8,793	10,837	12,500	13,821	14,830	16,072	16,506	16,279
261157	17,100	4,600	0,000	2,162	4,337	6,540	8,757	10,764	12,398	13,706	14,713	15,965	16,419	16,217
264473	17,300	4,600	0,000	2,156	4,324	6,519	8,720	10,690	12,297	13,590	14,595	15,858	16,332	16,156
267793	17,500	4,600	0,000	2,149	4,311	6,500	8,682	10,615	12,195	13,474	14,477	15,751	16,245	16,094
271114	17,700	4,600	0,000	2,143	4,299	6,482	8,644	10,539	12,093	13,358	14,358	15,643	16,157	16,032
274438	17,900	4,600	0,000	2,138	4,288	6,464	8,605	10,462	11,991	13,243	14,240	15,534	16,069	15,970
277765	18,100	4,600	0,000	2,132	4,277	6,447	8,565	10,385	11,888	13,127	14,121	15,426	15,981	15,908
281093	18,300	4,600	0,000	2,127	4,267	6,431	8,524	10,308	11,786	13,011	14,001	15,317	15,893	15,846
284424	18,500	4,600	0,000	2,123	4,258	6,415	8,481	10,229	11,684	12,896	13,882	15,208	15,804	15,784
287757	18,700	4,600	0,000	2,118	4,249	6,399	8,437	10,150	11,582	12,781	13,762	15,099	15,716	15,721
291092	18,900	4,600	0,000	2,114	4,241	6,383	8,391	10,071	11,480	12,666	13,643	14,990	15,627	15,659
294429	19,100	4,600	0,000	2,110	4,233	6,367	8,343	9,991	11,378	12,552	13,523	14,879	15,538	15,597
297769	19,300	4,600	0,000	2,107	4,226	6,350	8,294	9,910	11,276	12,437	13,404	14,769	15,449	15,534
301110	19,500	4,600	0,000	2,104	4,219	6,332	8,243	9,829	11,174	12,323	13,285	14,659	15,360	15,472
304454	19,700	4,600	0,000	2,101	4,213	6,314	8,190	9,747	11,072	12,209	13,166	14,549	15,270	15,409
307801	19,900	4,600	0,000	2,098	4,207	6,294	8,136	9,664	10,970	12,095	13,048	14,439	15,181	15,347
311149	20,100	4,600	0,000	2,095	4,202	6,272	8,080	9,581	10,868	11,982	12,929	14,329	15,092	15,284
314500	20,300	4,600	0,000	2,093	4,197	6,249	8,022	9,497	10,767	11,869	12,812	14,218	15,003	15,222
317853	20,500	4,600	0,000	2,091	4,192	6,224	7,962	9,413	10,665	11,757	12,694	14,108	14,914	15,159
321209	20,700	4,600	0,000	2,089	4,187	6,197	7,901	9,327	10,564	11,644	12,577	13,998	14,824	15,096
324567	20,900	4,600	0,000	2,088	4,182	6,167	7,837	9,241	10,462	11,533	12,461	13,888	14,735	15,034
327928	21,100	4,600	0,000	2,086	4,176	6,135	7,773	9,155	10,361	11,421	12,345	13,778	14,646	14,972
331292	21,300	4,600	0,000	2,085	4,170	6,100	7,706	9,067	10,259	11,310	12,230	13,668	14,557	14,910
334658	21,500	4,600	0,000	2,084	4,163	6,063	7,638	8,979	10,158	11,200	12,115	13,559	14,468	14,848
338026	21,700	4,600	0,000	2,084	4,155	6,022	7,568	8,890	10,056	11,090	12,001	13,450	14,379	14,786

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
341397	21,900	4,600	0,000	2,083	4,144	5,979	7,496	8,801	9,954	10,980	11,887	13,342	14,290	14,724
344771	22,100	4,600	0,000	2,082	4,132	5,933	7,422	8,710	9,853	10,871	11,775	13,234	14,201	14,662
348147	22,300	4,600	0,000	2,082	4,118	5,884	7,346	8,618	9,751	10,763	11,663	13,127	14,113	14,601



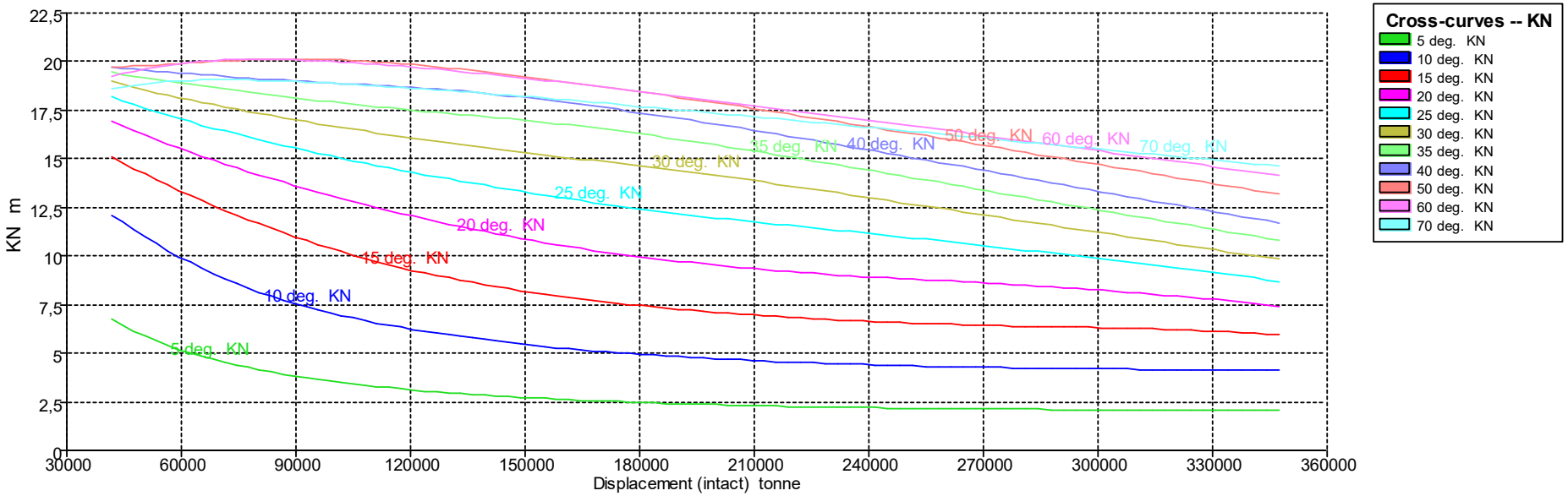
11.6 Initial Trim = -1,15 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
41716	3,100	-1,150	0,000	6,744	12,123	15,116	16,959	18,171	18,966	19,455	19,708	19,686	19,248	18,590
44626	3,300	-1,150	0,000	6,414	11,730	14,801	16,706	17,973	18,818	19,356	19,654	19,724	19,382	18,704
47549	3,500	-1,150	0,000	6,117	11,350	14,497	16,461	17,781	18,675	19,260	19,603	19,760	19,511	18,796
50486	3,700	-1,150	0,000	5,850	10,984	14,201	16,224	17,594	18,536	19,166	19,553	19,797	19,630	18,869
53436	3,900	-1,150	0,000	5,608	10,632	13,915	15,994	17,413	18,401	19,075	19,505	19,832	19,737	18,927

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
56399	4,100	-1,150	0,000	5,386	10,293	13,636	15,770	17,236	18,270	18,986	19,458	19,868	19,830	18,972
59373	4,300	-1,150	0,000	5,184	9,970	13,366	15,551	17,065	18,141	18,899	19,412	19,902	19,908	19,005
62359	4,500	-1,150	0,000	4,997	9,662	13,102	15,339	16,897	18,016	18,815	19,367	19,937	19,973	19,029
65355	4,700	-1,150	0,000	4,825	9,368	12,845	15,131	16,734	17,894	18,732	19,324	19,971	20,024	19,045
68360	4,900	-1,150	0,000	4,666	9,090	12,594	14,929	16,575	17,774	18,652	19,281	20,005	20,063	19,054
71375	5,100	-1,150	0,000	4,519	8,828	12,349	14,731	16,419	17,657	18,573	19,240	20,038	20,092	19,056
74398	5,300	-1,150	0,000	4,382	8,584	12,111	14,538	16,267	17,543	18,496	19,199	20,070	20,110	19,053
77428	5,500	-1,150	0,000	4,255	8,354	11,878	14,349	16,118	17,432	18,420	19,160	20,097	20,120	19,045
80466	5,700	-1,150	0,000	4,136	8,138	11,651	14,164	15,972	17,323	18,347	19,121	20,120	20,122	19,033
83512	5,900	-1,150	0,000	4,026	7,936	11,429	13,983	15,829	17,216	18,274	19,083	20,136	20,117	19,017
86565	6,100	-1,150	0,000	3,922	7,745	11,213	13,805	15,688	17,111	18,203	19,046	20,146	20,106	18,998
89625	6,300	-1,150	0,000	3,825	7,565	11,003	13,631	15,551	17,008	18,134	19,010	20,148	20,089	18,976
92692	6,500	-1,150	0,000	3,733	7,395	10,800	13,460	15,416	16,907	18,066	18,974	20,144	20,068	18,951
95765	6,700	-1,150	0,000	3,647	7,234	10,602	13,292	15,284	16,807	17,999	18,939	20,132	20,042	18,923
98845	6,900	-1,150	0,000	3,566	7,083	10,410	13,127	15,153	16,710	17,933	18,905	20,114	20,012	18,894
101931	7,100	-1,150	0,000	3,489	6,939	10,225	12,965	15,025	16,614	17,869	18,872	20,091	19,978	18,862
105022	7,300	-1,150	0,000	3,417	6,803	10,046	12,807	14,899	16,520	17,806	18,840	20,061	19,941	18,828
108119	7,500	-1,150	0,000	3,349	6,674	9,875	12,651	14,776	16,427	17,744	18,808	20,027	19,901	18,793
111221	7,700	-1,150	0,000	3,285	6,552	9,711	12,497	14,654	16,336	17,683	18,776	19,988	19,858	18,755
114329	7,900	-1,150	0,000	3,224	6,436	9,554	12,347	14,534	16,247	17,623	18,742	19,944	19,812	18,717
117441	8,100	-1,150	0,000	3,166	6,325	9,405	12,200	14,416	16,159	17,564	18,707	19,897	19,763	18,677
120558	8,300	-1,150	0,000	3,112	6,220	9,261	12,055	14,300	16,072	17,506	18,669	19,846	19,712	18,636
123680	8,500	-1,150	0,000	3,060	6,121	9,124	11,914	14,185	15,987	17,449	18,629	19,792	19,659	18,593
126806	8,700	-1,150	0,000	3,011	6,025	8,993	11,775	14,072	15,903	17,393	18,584	19,734	19,604	18,550
129936	8,900	-1,150	0,000	2,965	5,935	8,868	11,640	13,961	15,820	17,338	18,537	19,674	19,548	18,505
133071	9,100	-1,150	0,000	2,920	5,848	8,747	11,508	13,852	15,738	17,283	18,485	19,611	19,489	18,460
136210	9,300	-1,150	0,000	2,878	5,766	8,632	11,379	13,744	15,658	17,229	18,430	19,545	19,429	18,413
139353	9,500	-1,150	0,000	2,838	5,687	8,521	11,253	13,639	15,578	17,174	18,372	19,477	19,368	18,366
142499	9,700	-1,150	0,000	2,800	5,612	8,416	11,131	13,534	15,500	17,118	18,310	19,407	19,305	18,317
145649	9,900	-1,150	0,000	2,764	5,541	8,314	11,012	13,431	15,423	17,060	18,244	19,335	19,240	18,268
148803	10,100	-1,150	0,000	2,730	5,472	8,217	10,898	13,330	15,347	17,000	18,176	19,261	19,175	18,218
151960	10,300	-1,150	0,000	2,697	5,407	8,124	10,787	13,231	15,272	16,939	18,105	19,185	19,108	18,167
155121	10,500	-1,150	0,000	2,666	5,344	8,035	10,681	13,133	15,198	16,874	18,031	19,108	19,040	18,116
158285	10,700	-1,150	0,000	2,636	5,285	7,950	10,578	13,036	15,125	16,808	17,954	19,029	18,971	18,064
161453	10,900	-1,150	0,000	2,607	5,228	7,868	10,479	12,942	15,053	16,738	17,875	18,948	18,901	18,012
164625	11,100	-1,150	0,000	2,580	5,174	7,789	10,383	12,849	14,982	16,666	17,794	18,866	18,830	17,959
167800	11,300	-1,150	0,000	2,554	5,122	7,713	10,291	12,758	14,911	16,591	17,711	18,783	18,758	17,905
170979	11,500	-1,150	0,000	2,529	5,073	7,641	10,202	12,669	14,840	16,514	17,626	18,698	18,685	17,851
174162	11,700	-1,150	0,000	2,506	5,025	7,571	10,116	12,581	14,768	16,434	17,539	18,612	18,611	17,797
177348	11,900	-1,150	0,000	2,483	4,980	7,505	10,034	12,496	14,696	16,351	17,451	18,525	18,537	17,742
180538	12,100	-1,150	0,000	2,461	4,937	7,440	9,954	12,412	14,622	16,267	17,360	18,436	18,461	17,686

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
183732	12,300	-1,150	0,000	2,441	4,896	7,379	9,877	12,330	14,547	16,180	17,268	18,347	18,385	17,630
186928	12,500	-1,150	0,000	2,421	4,856	7,320	9,804	12,250	14,471	16,091	17,174	18,256	18,309	17,574
190129	12,700	-1,150	0,000	2,402	4,818	7,263	9,733	12,173	14,393	16,001	17,079	18,165	18,231	17,518
193333	12,900	-1,150	0,000	2,384	4,782	7,209	9,664	12,098	14,313	15,908	16,983	18,073	18,154	17,461
196540	13,100	-1,150	0,000	2,367	4,747	7,157	9,598	12,025	14,232	15,814	16,885	17,979	18,075	17,403
199750	13,300	-1,150	0,000	2,350	4,714	7,107	9,535	11,955	14,149	15,719	16,785	17,885	17,996	17,346
202964	13,500	-1,150	0,000	2,334	4,683	7,060	9,474	11,887	14,064	15,622	16,685	17,790	17,917	17,288
206182	13,700	-1,150	0,000	2,319	4,652	7,014	9,415	11,821	13,977	15,523	16,583	17,695	17,837	17,230
209403	13,900	-1,150	0,000	2,305	4,623	6,971	9,358	11,756	13,889	15,423	16,480	17,598	17,757	17,172
212627	14,100	-1,150	0,000	2,291	4,595	6,929	9,304	11,693	13,799	15,322	16,376	17,501	17,676	17,114
215854	14,300	-1,150	0,000	2,278	4,569	6,889	9,252	11,630	13,708	15,219	16,271	17,403	17,595	17,055
219084	14,500	-1,150	0,000	2,265	4,544	6,851	9,202	11,568	13,616	15,116	16,165	17,305	17,514	16,997
222317	14,700	-1,150	0,000	2,253	4,519	6,814	9,154	11,506	13,523	15,011	16,058	17,206	17,432	16,938
225553	14,900	-1,150	0,000	2,241	4,496	6,779	9,107	11,444	13,428	14,905	15,949	17,106	17,350	16,879
228792	15,100	-1,150	0,000	2,230	4,474	6,746	9,063	11,382	13,333	14,798	15,841	17,005	17,268	16,820
232033	15,300	-1,150	0,000	2,220	4,453	6,714	9,020	11,319	13,238	14,690	15,731	16,905	17,185	16,761
235278	15,500	-1,150	0,000	2,210	4,433	6,684	8,980	11,256	13,142	14,581	15,620	16,803	17,102	16,702
238525	15,700	-1,150	0,000	2,200	4,413	6,655	8,941	11,192	13,046	14,472	15,509	16,701	17,019	16,642
241776	15,900	-1,150	0,000	2,191	4,395	6,627	8,904	11,128	12,950	14,362	15,396	16,599	16,935	16,583
245030	16,100	-1,150	0,000	2,182	4,377	6,600	8,868	11,063	12,853	14,251	15,283	16,495	16,851	16,523
248287	16,300	-1,150	0,000	2,174	4,361	6,575	8,834	10,996	12,756	14,139	15,170	16,392	16,767	16,464
251548	16,500	-1,150	0,000	2,166	4,345	6,551	8,801	10,929	12,659	14,027	15,055	16,288	16,682	16,404
254811	16,700	-1,150	0,000	2,159	4,330	6,529	8,769	10,862	12,562	13,915	14,940	16,183	16,597	16,344
258078	16,900	-1,150	0,000	2,152	4,316	6,507	8,738	10,793	12,464	13,802	14,824	16,078	16,512	16,284
261347	17,100	-1,150	0,000	2,145	4,302	6,486	8,706	10,724	12,366	13,688	14,708	15,973	16,427	16,224
264621	17,300	-1,150	0,000	2,138	4,289	6,467	8,674	10,654	12,269	13,574	14,592	15,867	16,341	16,164
267897	17,500	-1,150	0,000	2,132	4,277	6,448	8,642	10,583	12,171	13,461	14,476	15,761	16,256	16,103
271178	17,700	-1,150	0,000	2,127	4,266	6,431	8,608	10,512	12,073	13,348	14,358	15,654	16,170	16,043
274461	17,900	-1,150	0,000	2,121	4,255	6,414	8,574	10,440	11,976	13,235	14,241	15,547	16,084	15,982
277749	18,100	-1,150	0,000	2,116	4,245	6,399	8,539	10,367	11,878	13,122	14,124	15,441	15,997	15,922
281040	18,300	-1,150	0,000	2,112	4,235	6,384	8,502	10,294	11,780	13,010	14,006	15,333	15,910	15,861
284336	18,500	-1,150	0,000	2,107	4,227	6,370	8,464	10,220	11,682	12,897	13,888	15,225	15,823	15,799
287635	18,700	-1,150	0,000	2,103	4,218	6,357	8,424	10,146	11,584	12,785	13,770	15,117	15,736	15,738
290939	18,900	-1,150	0,000	2,099	4,210	6,345	8,382	10,071	11,486	12,674	13,652	15,009	15,649	15,676
294247	19,100	-1,150	0,000	2,096	4,203	6,333	8,338	9,995	11,388	12,562	13,534	14,900	15,561	15,615
297561	19,300	-1,150	0,000	2,093	4,196	6,322	8,293	9,919	11,290	12,450	13,417	14,791	15,473	15,553
300878	19,500	-1,150	0,000	2,090	4,190	6,310	8,247	9,842	11,192	12,339	13,300	14,682	15,385	15,491
304200	19,700	-1,150	0,000	2,087	4,184	6,297	8,198	9,765	11,094	12,228	13,183	14,572	15,296	15,429
307525	19,900	-1,150	0,000	2,084	4,178	6,283	8,148	9,687	10,996	12,118	13,067	14,463	15,207	15,367
310854	20,100	-1,150	0,000	2,082	4,174	6,267	8,097	9,608	10,898	12,007	12,951	14,353	15,118	15,304
314185	20,300	-1,150	0,000	2,079	4,169	6,250	8,043	9,529	10,800	11,898	12,835	14,244	15,029	15,242

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
317519	20,500	-1,150	0,000	2,078	4,165	6,231	7,988	9,449	10,702	11,788	12,721	14,134	14,940	15,179
320855	20,700	-1,150	0,000	2,076	4,161	6,210	7,932	9,368	10,604	11,679	12,606	14,024	14,851	15,117
324193	20,900	-1,150	0,000	2,074	4,158	6,187	7,874	9,287	10,506	11,571	12,493	13,915	14,761	15,054
327533	21,100	-1,150	0,000	2,073	4,155	6,160	7,814	9,204	10,409	11,462	12,379	13,805	14,672	14,991
330875	21,300	-1,150	0,000	2,072	4,153	6,131	7,753	9,122	10,311	11,355	12,267	13,696	14,582	14,929
334219	21,500	-1,150	0,000	2,071	4,151	6,099	7,690	9,038	10,213	11,248	12,155	13,588	14,493	14,866
337566	21,700	-1,150	0,000	2,070	4,149	6,065	7,625	8,954	10,115	11,141	12,044	13,480	14,404	14,803
340914	21,900	-1,150	0,000	2,069	4,146	6,027	7,559	8,868	10,017	11,035	11,933	13,373	14,314	14,740
344265	22,100	-1,150	0,000	2,069	4,142	5,987	7,491	8,783	9,920	10,929	11,823	13,266	14,225	14,678
347618	22,300	-1,150	0,000	2,069	4,136	5,944	7,421	8,696	9,822	10,824	11,714	13,160	14,136	14,615

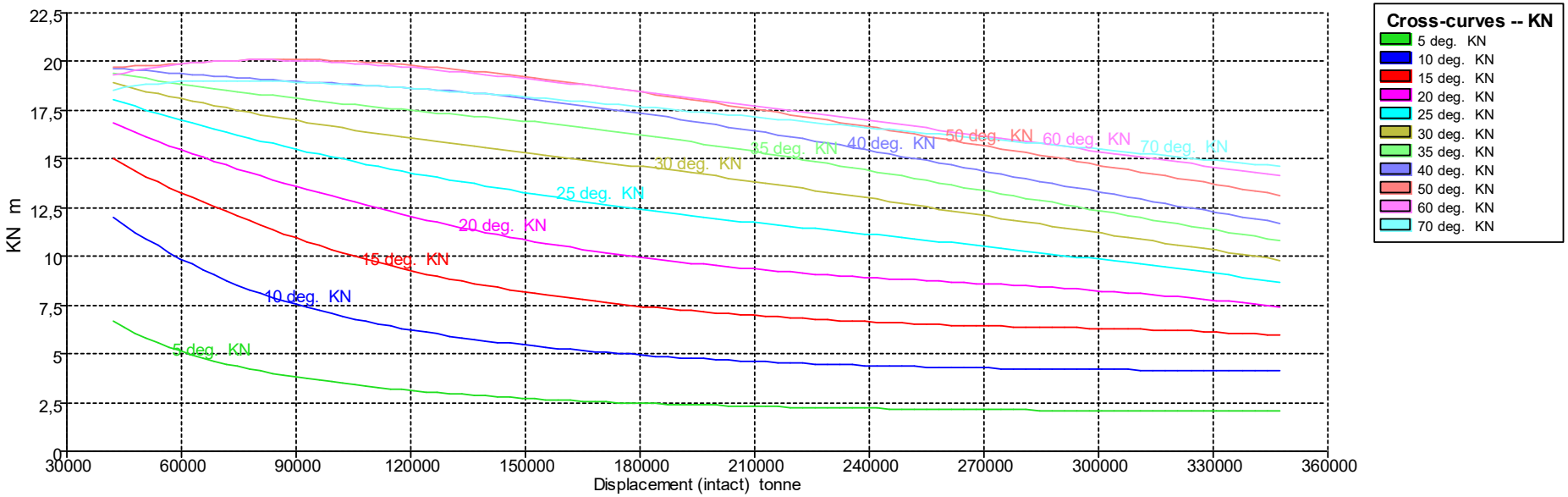


11.7 Initial Trim = -2,3 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
42128	3,100	-2,300	0,000	6,667	11,988	14,997	16,856	18,084	18,896	19,404	19,676	19,693	19,291	18,550
45018	3,300	-2,300	0,000	6,346	11,609	14,693	16,613	17,893	18,754	19,308	19,624	19,730	19,415	18,658
47929	3,500	-2,300	0,000	6,057	11,240	14,397	16,375	17,707	18,615	19,214	19,573	19,765	19,529	18,748
50862	3,700	-2,300	0,000	5,795	10,884	14,108	16,144	17,526	18,480	19,123	19,524	19,800	19,633	18,822
53808	3,900	-2,300	0,000	5,558	10,540	13,827	15,918	17,349	18,348	19,034	19,477	19,834	19,726	18,882
56767	4,100	-2,300	0,000	5,341	10,209	13,554	15,699	17,177	18,220	18,947	19,431	19,868	19,807	18,929
59737	4,300	-2,300	0,000	5,142	9,893	13,288	15,484	17,008	18,094	18,862	19,386	19,902	19,877	18,965
62719	4,500	-2,300	0,000	4,960	9,591	13,028	15,275	16,844	17,971	18,780	19,342	19,935	19,935	18,990
65711	4,700	-2,300	0,000	4,791	9,304	12,775	15,071	16,683	17,851	18,699	19,300	19,968	19,983	19,008
68713	4,900	-2,300	0,000	4,635	9,032	12,528	14,871	16,526	17,734	18,619	19,258	20,000	20,021	19,018
71723	5,100	-2,300	0,000	4,490	8,775	12,286	14,676	16,372	17,619	18,542	19,217	20,029	20,049	19,021
74741	5,300	-2,300	0,000	4,355	8,534	12,051	14,485	16,222	17,506	18,466	19,177	20,054	20,067	19,019
77768	5,500	-2,300	0,000	4,230	8,308	11,820	14,298	16,074	17,396	18,392	19,138	20,076	20,078	19,012
80802	5,700	-2,300	0,000	4,113	8,096	11,596	14,115	15,930	17,288	18,319	19,099	20,092	20,080	19,001
83843	5,900	-2,300	0,000	4,004	7,896	11,377	13,936	15,788	17,182	18,247	19,062	20,103	20,076	18,986
86892	6,100	-2,300	0,000	3,901	7,707	11,163	13,760	15,649	17,078	18,177	19,025	20,108	20,066	18,967
89947	6,300	-2,300	0,000	3,805	7,530	10,956	13,587	15,513	16,976	18,108	18,989	20,108	20,050	18,946
93010	6,500	-2,300	0,000	3,715	7,362	10,754	13,417	15,379	16,876	18,040	18,954	20,101	20,029	18,921
96079	6,700	-2,300	0,000	3,630	7,203	10,559	13,251	15,247	16,777	17,974	18,920	20,089	20,004	18,894
99155	6,900	-2,300	0,000	3,550	7,053	10,369	13,087	15,118	16,681	17,909	18,887	20,071	19,974	18,865
102236	7,100	-2,300	0,000	3,475	6,911	10,186	12,927	14,991	16,585	17,845	18,854	20,047	19,941	18,834
105324	7,300	-2,300	0,000	3,403	6,776	10,010	12,769	14,866	16,492	17,782	18,820	20,018	19,905	18,801
108418	7,500	-2,300	0,000	3,336	6,649	9,841	12,614	14,743	16,400	17,720	18,787	19,984	19,865	18,767
111517	7,700	-2,300	0,000	3,272	6,528	9,678	12,462	14,622	16,309	17,660	18,752	19,946	19,822	18,730
114622	7,900	-2,300	0,000	3,212	6,413	9,523	12,312	14,503	16,220	17,600	18,716	19,903	19,777	18,692
117732	8,100	-2,300	0,000	3,155	6,304	9,375	12,166	14,386	16,132	17,541	18,677	19,856	19,729	18,653
120847	8,300	-2,300	0,000	3,101	6,200	9,233	12,022	14,270	16,046	17,484	18,637	19,806	19,679	18,612
123967	8,500	-2,300	0,000	3,050	6,101	9,097	11,882	14,156	15,961	17,427	18,593	19,753	19,627	18,571
127092	8,700	-2,300	0,000	3,002	6,007	8,966	11,744	14,044	15,877	17,371	18,547	19,696	19,573	18,528
130220	8,900	-2,300	0,000	2,956	5,917	8,842	11,609	13,933	15,795	17,316	18,498	19,636	19,517	18,484
133353	9,100	-2,300	0,000	2,912	5,831	8,722	11,478	13,824	15,713	17,260	18,446	19,574	19,459	18,439
136489	9,300	-2,300	0,000	2,870	5,749	8,608	11,350	13,717	15,633	17,204	18,390	19,509	19,400	18,393
139630	9,500	-2,300	0,000	2,831	5,671	8,498	11,225	13,611	15,554	17,146	18,332	19,442	19,339	18,346
142774	9,700	-2,300	0,000	2,793	5,597	8,393	11,104	13,507	15,476	17,088	18,270	19,372	19,277	18,298
145922	9,900	-2,300	0,000	2,757	5,526	8,293	10,986	13,405	15,399	17,028	18,205	19,301	19,213	18,249
149074	10,100	-2,300	0,000	2,723	5,458	8,197	10,872	13,304	15,323	16,967	18,137	19,227	19,149	18,199
152230	10,300	-2,300	0,000	2,691	5,393	8,104	10,763	13,205	15,249	16,903	18,066	19,152	19,082	18,149
155389	10,500	-2,300	0,000	2,660	5,332	8,016	10,657	13,107	15,175	16,838	17,992	19,075	19,015	18,098

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
158551	10,700	-2,300	0,000	2,630	5,273	7,931	10,554	13,011	15,102	16,770	17,916	18,997	18,947	18,047
161717	10,900	-2,300	0,000	2,602	5,216	7,849	10,456	12,917	15,030	16,700	17,838	18,917	18,877	17,995
164886	11,100	-2,300	0,000	2,574	5,163	7,771	10,361	12,825	14,957	16,627	17,757	18,835	18,806	17,942
168058	11,300	-2,300	0,000	2,549	5,111	7,696	10,269	12,734	14,885	16,552	17,675	18,752	18,735	17,889
171234	11,500	-2,300	0,000	2,524	5,062	7,624	10,181	12,645	14,813	16,475	17,590	18,668	18,662	17,835
174413	11,700	-2,300	0,000	2,501	5,015	7,555	10,096	12,558	14,739	16,395	17,503	18,583	18,589	17,781
177596	11,900	-2,300	0,000	2,478	4,970	7,489	10,014	12,473	14,665	16,313	17,415	18,496	18,515	17,726
180782	12,100	-2,300	0,000	2,457	4,928	7,426	9,935	12,389	14,590	16,229	17,325	18,408	18,440	17,671
183972	12,300	-2,300	0,000	2,436	4,886	7,365	9,859	12,308	14,514	16,143	17,234	18,319	18,364	17,616
187165	12,500	-2,300	0,000	2,416	4,847	7,306	9,785	12,229	14,437	16,055	17,140	18,229	18,288	17,560
190361	12,700	-2,300	0,000	2,398	4,810	7,250	9,715	12,152	14,358	15,965	17,046	18,138	18,211	17,503
193561	12,900	-2,300	0,000	2,380	4,774	7,196	9,647	12,077	14,277	15,873	16,950	18,046	18,133	17,447
196763	13,100	-2,300	0,000	2,363	4,739	7,145	9,581	12,005	14,196	15,779	16,852	17,953	18,055	17,390
199969	13,300	-2,300	0,000	2,346	4,706	7,095	9,518	11,935	14,112	15,684	16,754	17,860	17,977	17,333
203178	13,500	-2,300	0,000	2,331	4,675	7,048	9,458	11,867	14,027	15,587	16,654	17,765	17,898	17,275
206390	13,700	-2,300	0,000	2,316	4,645	7,003	9,399	11,800	13,941	15,489	16,552	17,670	17,818	17,218
209606	13,900	-2,300	0,000	2,301	4,616	6,960	9,343	11,734	13,853	15,390	16,450	17,574	17,738	17,160
212826	14,100	-2,300	0,000	2,287	4,589	6,918	9,289	11,670	13,764	15,289	16,346	17,477	17,658	17,102
216048	14,300	-2,300	0,000	2,274	4,562	6,879	9,237	11,606	13,674	15,187	16,242	17,379	17,577	17,043
219274	14,500	-2,300	0,000	2,262	4,537	6,841	9,188	11,543	13,582	15,084	16,136	17,281	17,496	16,985
222503	14,700	-2,300	0,000	2,250	4,513	6,805	9,140	11,480	13,489	14,980	16,030	17,182	17,414	16,926
225734	14,900	-2,300	0,000	2,238	4,490	6,770	9,094	11,417	13,396	14,874	15,922	17,083	17,332	16,867
228968	15,100	-2,300	0,000	2,227	4,468	6,737	9,050	11,354	13,301	14,768	15,813	16,983	17,250	16,809
232205	15,300	-2,300	0,000	2,217	4,447	6,705	9,008	11,291	13,206	14,661	15,704	16,882	17,167	16,749
235445	15,500	-2,300	0,000	2,207	4,427	6,675	8,967	11,227	13,111	14,552	15,594	16,781	17,085	16,690
238688	15,700	-2,300	0,000	2,198	4,408	6,646	8,929	11,163	13,016	14,444	15,483	16,680	17,001	16,631
241933	15,900	-2,300	0,000	2,189	4,390	6,619	8,892	11,099	12,920	14,334	15,371	16,578	16,918	16,571
245181	16,100	-2,300	0,000	2,180	4,373	6,592	8,857	11,034	12,824	14,224	15,258	16,475	16,834	16,512
248432	16,300	-2,300	0,000	2,172	4,356	6,567	8,822	10,968	12,728	14,113	15,145	16,371	16,750	16,452
251687	16,500	-2,300	0,000	2,164	4,340	6,544	8,788	10,902	12,631	14,001	15,031	16,267	16,666	16,392
254944	16,700	-2,300	0,000	2,157	4,325	6,521	8,755	10,835	12,534	13,889	14,917	16,163	16,582	16,333
258205	16,900	-2,300	0,000	2,150	4,311	6,500	8,722	10,767	12,438	13,777	14,802	16,059	16,497	16,273
261468	17,100	-2,300	0,000	2,143	4,298	6,479	8,690	10,698	12,341	13,663	14,685	15,954	16,412	16,213
264735	17,300	-2,300	0,000	2,136	4,285	6,460	8,657	10,629	12,244	13,551	14,570	15,848	16,326	16,153
268005	17,500	-2,300	0,000	2,130	4,273	6,442	8,623	10,559	12,148	13,438	14,453	15,743	16,241	16,093
271278	17,700	-2,300	0,000	2,125	4,262	6,424	8,589	10,488	12,051	13,326	14,337	15,636	16,155	16,033
274554	17,900	-2,300	0,000	2,119	4,251	6,408	8,554	10,417	11,954	13,214	14,220	15,530	16,069	15,972
277834	18,100	-2,300	0,000	2,114	4,241	6,392	8,518	10,345	11,857	13,102	14,103	15,423	15,983	15,912
281117	18,300	-2,300	0,000	2,110	4,231	6,378	8,481	10,273	11,760	12,990	13,986	15,316	15,897	15,851
284404	18,500	-2,300	0,000	2,105	4,223	6,364	8,442	10,200	11,663	12,878	13,868	15,208	15,810	15,790
287695	18,700	-2,300	0,000	2,101	4,214	6,351	8,403	10,126	11,566	12,767	13,751	15,100	15,723	15,729

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
290989	18,900	-2,300	0,000	2,098	4,206	6,338	8,361	10,052	11,468	12,655	13,634	14,992	15,636	15,668
294288	19,100	-2,300	0,000	2,094	4,199	6,326	8,318	9,977	11,371	12,544	13,517	14,884	15,549	15,607
297590	19,300	-2,300	0,000	2,091	4,192	6,313	8,274	9,902	11,274	12,434	13,400	14,776	15,461	15,545
300897	19,500	-2,300	0,000	2,088	4,186	6,299	8,227	9,826	11,177	12,323	13,284	14,667	15,373	15,484
304208	19,700	-2,300	0,000	2,085	4,180	6,285	8,179	9,749	11,079	12,213	13,168	14,558	15,285	15,422
307524	19,900	-2,300	0,000	2,082	4,175	6,270	8,130	9,672	10,982	12,103	13,052	14,449	15,197	15,360
310845	20,100	-2,300	0,000	2,080	4,170	6,253	8,079	9,594	10,885	11,994	12,937	14,340	15,109	15,298
314170	20,300	-2,300	0,000	2,078	4,166	6,235	8,026	9,516	10,787	11,885	12,822	14,231	15,020	15,236
317498	20,500	-2,300	0,000	2,076	4,162	6,215	7,972	9,436	10,690	11,776	12,708	14,121	14,931	15,173
320830	20,700	-2,300	0,000	2,074	4,158	6,193	7,916	9,356	10,593	11,667	12,594	14,012	14,842	15,111
324164	20,900	-2,300	0,000	2,073	4,155	6,169	7,859	9,275	10,495	11,559	12,481	13,903	14,753	15,049
327500	21,100	-2,300	0,000	2,071	4,152	6,142	7,800	9,194	10,398	11,452	12,368	13,795	14,663	14,986
330839	21,300	-2,300	0,000	2,070	4,150	6,113	7,739	9,111	10,301	11,345	12,256	13,686	14,574	14,923
334179	21,500	-2,300	0,000	2,069	4,147	6,082	7,677	9,027	10,204	11,238	12,145	13,578	14,485	14,861
337522	21,700	-2,300	0,000	2,069	4,143	6,047	7,613	8,944	10,107	11,132	12,034	13,471	14,396	14,798
340867	21,900	-2,300	0,000	2,068	4,138	6,010	7,547	8,859	10,009	11,026	11,924	13,364	14,307	14,735
344214	22,100	-2,300	0,000	2,068	4,132	5,970	7,480	8,773	9,912	10,921	11,815	13,258	14,218	14,673
347563	22,300	-2,300	0,000	2,067	4,125	5,928	7,410	8,687	9,814	10,817	11,706	13,153	14,129	14,610



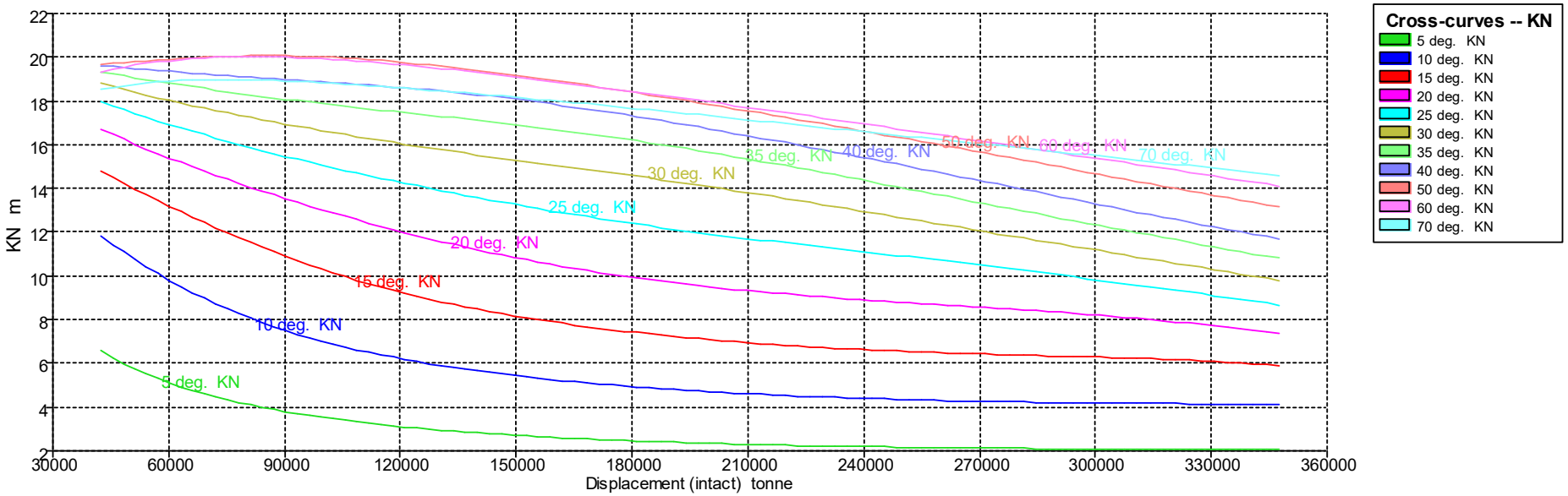
11.8 Initial Trim = -3,45 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
42600	3,100	-3,450	0,000	6,575	11,791	14,816	16,698	17,950	18,789	19,326	19,627	19,700	19,341	18,517
45484	3,300	-3,450	0,000	6,265	11,431	14,527	16,468	17,771	18,655	19,235	19,578	19,737	19,448	18,614
48383	3,500	-3,450	0,000	5,986	11,081	14,244	16,243	17,594	18,524	19,146	19,531	19,772	19,546	18,698
51296	3,700	-3,450	0,000	5,732	10,743	13,969	16,022	17,422	18,396	19,059	19,484	19,806	19,634	18,768
54224	3,900	-3,450	0,000	5,501	10,415	13,699	15,806	17,253	18,270	18,974	19,438	19,840	19,714	18,825
57177	4,100	-3,450	0,000	5,289	10,098	13,435	15,594	17,087	18,146	18,891	19,394	19,873	19,784	18,873
60142	4,300	-3,450	0,000	5,095	9,794	13,177	15,386	16,924	18,025	18,810	19,351	19,906	19,844	18,910
63118	4,500	-3,450	0,000	4,916	9,503	12,923	15,183	16,765	17,906	18,730	19,309	19,937	19,895	18,939
66105	4,700	-3,450	0,000	4,752	9,226	12,678	14,984	16,609	17,790	18,651	19,267	19,966	19,936	18,958
69101	4,900	-3,450	0,000	4,599	8,963	12,436	14,790	16,456	17,676	18,574	19,227	19,992	19,970	18,970
72106	5,100	-3,450	0,000	4,458	8,714	12,201	14,599	16,306	17,564	18,499	19,187	20,014	19,995	18,976
75120	5,300	-3,450	0,000	4,326	8,478	11,970	14,412	16,158	17,454	18,425	19,148	20,033	20,013	18,976

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
78142	5,500	-3,450	0,000	4,203	8,256	11,745	14,228	16,014	17,346	18,352	19,110	20,047	20,023	18,970
81172	5,700	-3,450	0,000	4,088	8,047	11,525	14,048	15,872	17,240	18,281	19,073	20,057	20,026	18,960
84209	5,900	-3,450	0,000	3,980	7,851	11,310	13,872	15,733	17,136	18,211	19,036	20,063	20,023	18,946
87253	6,100	-3,450	0,000	3,880	7,665	11,101	13,698	15,596	17,034	18,142	19,000	20,063	20,014	18,929
90303	6,300	-3,450	0,000	3,785	7,490	10,897	13,528	15,462	16,933	18,075	18,965	20,059	19,999	18,908
93361	6,500	-3,450	0,000	3,696	7,325	10,699	13,361	15,330	16,835	18,008	18,931	20,049	19,979	18,884
96425	6,700	-3,450	0,000	3,612	7,169	10,508	13,197	15,200	16,738	17,943	18,897	20,035	19,955	18,858
99495	6,900	-3,450	0,000	3,533	7,021	10,322	13,036	15,073	16,643	17,879	18,864	20,016	19,926	18,830
102572	7,100	-3,450	0,000	3,459	6,881	10,142	12,877	14,947	16,549	17,816	18,830	19,992	19,894	18,800
105656	7,300	-3,450	0,000	3,389	6,749	9,969	12,721	14,824	16,456	17,753	18,795	19,963	19,858	18,768
108745	7,500	-3,450	0,000	3,322	6,623	9,803	12,568	14,702	16,365	17,692	18,758	19,930	19,820	18,734
111841	7,700	-3,450	0,000	3,260	6,503	9,643	12,418	14,582	16,276	17,632	18,720	19,892	19,778	18,698
114942	7,900	-3,450	0,000	3,200	6,389	9,489	12,270	14,464	16,187	17,573	18,681	19,850	19,733	18,661
118049	8,100	-3,450	0,000	3,144	6,281	9,343	12,125	14,348	16,100	17,515	18,640	19,805	19,687	18,622
121161	8,300	-3,450	0,000	3,091	6,179	9,202	11,983	14,234	16,015	17,458	18,596	19,755	19,638	18,583
124277	8,500	-3,450	0,000	3,040	6,081	9,068	11,844	14,121	15,930	17,402	18,550	19,703	19,586	18,541
127399	8,700	-3,450	0,000	2,993	5,987	8,939	11,708	14,009	15,847	17,345	18,502	19,647	19,533	18,499
130524	8,900	-3,450	0,000	2,947	5,898	8,815	11,575	13,900	15,765	17,288	18,451	19,588	19,478	18,456
133655	9,100	-3,450	0,000	2,904	5,814	8,697	11,445	13,792	15,684	17,230	18,397	19,527	19,421	18,411
136789	9,300	-3,450	0,000	2,863	5,733	8,584	11,318	13,685	15,605	17,172	18,341	19,463	19,363	18,366
139927	9,500	-3,450	0,000	2,823	5,656	8,475	11,195	13,580	15,526	17,112	18,282	19,397	19,303	18,319
143069	9,700	-3,450	0,000	2,786	5,582	8,371	11,075	13,477	15,449	17,051	18,220	19,328	19,241	18,272
146215	9,900	-3,450	0,000	2,751	5,512	8,271	10,959	13,375	15,373	16,990	18,155	19,257	19,178	18,224
149365	10,100	-3,450	0,000	2,717	5,444	8,176	10,846	13,275	15,297	16,926	18,088	19,185	19,114	18,175
152518	10,300	-3,450	0,000	2,684	5,380	8,084	10,738	13,176	15,223	16,861	18,017	19,110	19,049	18,125
155675	10,500	-3,450	0,000	2,654	5,319	7,997	10,633	13,080	15,149	16,794	17,944	19,034	18,982	18,075
158835	10,700	-3,450	0,000	2,624	5,261	7,912	10,531	12,984	15,076	16,725	17,869	18,956	18,914	18,024
161999	10,900	-3,450	0,000	2,596	5,205	7,832	10,433	12,891	15,002	16,654	17,791	18,877	18,845	17,972
165166	11,100	-3,450	0,000	2,569	5,152	7,754	10,339	12,799	14,929	16,581	17,711	18,796	18,775	17,920
168336	11,300	-3,450	0,000	2,544	5,101	7,680	10,248	12,709	14,855	16,505	17,629	18,714	18,704	17,867
171509	11,500	-3,450	0,000	2,519	5,052	7,609	10,160	12,620	14,780	16,428	17,545	18,630	18,632	17,813
174685	11,700	-3,450	0,000	2,496	5,006	7,540	10,076	12,534	14,705	16,349	17,459	18,545	18,559	17,760
177864	11,900	-3,450	0,000	2,474	4,961	7,474	9,995	12,449	14,630	16,267	17,371	18,459	18,485	17,705
181047	12,100	-3,450	0,000	2,452	4,919	7,412	9,916	12,367	14,553	16,183	17,282	18,372	18,411	17,651
184232	12,300	-3,450	0,000	2,432	4,878	7,351	9,841	12,286	14,475	16,098	17,191	18,284	18,336	17,596
187421	12,500	-3,450	0,000	2,412	4,839	7,293	9,768	12,208	14,397	16,010	17,098	18,194	18,260	17,540
190613	12,700	-3,450	0,000	2,394	4,802	7,238	9,698	12,132	14,317	15,920	17,004	18,104	18,183	17,485
193808	12,900	-3,450	0,000	2,376	4,766	7,184	9,630	12,058	14,236	15,829	16,909	18,012	18,107	17,428
197006	13,100	-3,450	0,000	2,359	4,732	7,133	9,565	11,985	14,153	15,736	16,812	17,920	18,029	17,372
200208	13,300	-3,450	0,000	2,343	4,699	7,084	9,503	11,915	14,070	15,641	16,714	17,826	17,951	17,315
203412	13,500	-3,450	0,000	2,327	4,668	7,038	9,443	11,846	13,985	15,545	16,614	17,732	17,872	17,258

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
206620	13,700	-3,450	0,000	2,312	4,638	6,993	9,385	11,778	13,899	15,448	16,514	17,637	17,793	17,201
209831	13,900	-3,450	0,000	2,298	4,610	6,950	9,329	11,711	13,811	15,349	16,412	17,541	17,713	17,143
213045	14,100	-3,450	0,000	2,284	4,583	6,909	9,276	11,645	13,722	15,249	16,309	17,445	17,633	17,085
216262	14,300	-3,450	0,000	2,271	4,556	6,870	9,224	11,580	13,632	15,147	16,205	17,348	17,553	17,027
219482	14,500	-3,450	0,000	2,259	4,531	6,832	9,175	11,515	13,541	15,045	16,100	17,250	17,472	16,969
222706	14,700	-3,450	0,000	2,247	4,508	6,796	9,127	11,451	13,450	14,941	15,994	17,152	17,391	16,910
225933	14,900	-3,450	0,000	2,236	4,485	6,762	9,082	11,387	13,357	14,836	15,886	17,053	17,309	16,852
229163	15,100	-3,450	0,000	2,225	4,463	6,729	9,038	11,323	13,263	14,731	15,778	16,953	17,227	16,793
232395	15,300	-3,450	0,000	2,215	4,442	6,698	8,997	11,259	13,169	14,624	15,669	16,853	17,145	16,734
235630	15,500	-3,450	0,000	2,205	4,423	6,668	8,957	11,195	13,075	14,516	15,560	16,753	17,062	16,675
238868	15,700	-3,450	0,000	2,195	4,404	6,639	8,918	11,131	12,979	14,408	15,449	16,651	16,979	16,616
242109	15,900	-3,450	0,000	2,187	4,386	6,612	8,881	11,066	12,884	14,299	15,338	16,549	16,896	16,557
245352	16,100	-3,450	0,000	2,178	4,368	6,586	8,845	11,001	12,789	14,189	15,226	16,447	16,812	16,497
248598	16,300	-3,450	0,000	2,170	4,352	6,561	8,809	10,935	12,693	14,079	15,113	16,344	16,729	16,438
251847	16,500	-3,450	0,000	2,162	4,336	6,537	8,774	10,869	12,598	13,967	15,000	16,240	16,645	16,378
255098	16,700	-3,450	0,000	2,155	4,322	6,515	8,740	10,803	12,502	13,856	14,886	16,137	16,561	16,318
258352	16,900	-3,450	0,000	2,148	4,308	6,493	8,706	10,735	12,406	13,745	14,771	16,032	16,476	16,258
261610	17,100	-3,450	0,000	2,141	4,294	6,473	8,671	10,667	12,310	13,633	14,656	15,928	16,392	16,199
264871	17,300	-3,450	0,000	2,135	4,282	6,454	8,637	10,599	12,214	13,521	14,540	15,823	16,307	16,139
268135	17,500	-3,450	0,000	2,129	4,270	6,436	8,602	10,529	12,118	13,410	14,425	15,717	16,221	16,079
271401	17,700	-3,450	0,000	2,123	4,258	6,419	8,567	10,459	12,022	13,298	14,309	15,611	16,136	16,019
274671	17,900	-3,450	0,000	2,118	4,248	6,403	8,531	10,389	11,926	13,186	14,193	15,505	16,050	15,959
277944	18,100	-3,450	0,000	2,113	4,238	6,387	8,494	10,318	11,830	13,075	14,076	15,399	15,964	15,898
281220	18,300	-3,450	0,000	2,108	4,228	6,373	8,456	10,245	11,733	12,963	13,959	15,292	15,878	15,838
284500	18,500	-3,450	0,000	2,104	4,219	6,359	8,417	10,173	11,637	12,852	13,843	15,185	15,792	15,778
287782	18,700	-3,450	0,000	2,100	4,211	6,345	8,376	10,100	11,541	12,742	13,726	15,078	15,705	15,717
291069	18,900	-3,450	0,000	2,096	4,203	6,331	8,335	10,026	11,444	12,631	13,610	14,970	15,618	15,656
294358	19,100	-3,450	0,000	2,093	4,196	6,317	8,292	9,952	11,348	12,521	13,493	14,862	15,531	15,595
297652	19,300	-3,450	0,000	2,089	4,190	6,302	8,248	9,878	11,251	12,411	13,377	14,754	15,444	15,534
300949	19,500	-3,450	0,000	2,086	4,183	6,287	8,202	9,802	11,154	12,301	13,262	14,646	15,357	15,473
304251	19,700	-3,450	0,000	2,084	4,178	6,271	8,155	9,726	11,057	12,192	13,146	14,538	15,269	15,411
307556	19,900	-3,450	0,000	2,081	4,172	6,254	8,106	9,650	10,960	12,083	13,031	14,429	15,181	15,350
310866	20,100	-3,450	0,000	2,079	4,168	6,236	8,055	9,572	10,864	11,974	12,917	14,321	15,093	15,288
314181	20,300	-3,450	0,000	2,077	4,163	6,216	8,003	9,494	10,767	11,864	12,803	14,212	15,005	15,226
317500	20,500	-3,450	0,000	2,075	4,160	6,194	7,949	9,415	10,670	11,756	12,689	14,103	14,917	15,164
320824	20,700	-3,450	0,000	2,073	4,156	6,171	7,894	9,336	10,573	11,648	12,576	13,995	14,828	15,102
324152	20,900	-3,450	0,000	2,072	4,153	6,146	7,837	9,255	10,477	11,541	12,463	13,887	14,739	15,040
327483	21,100	-3,450	0,000	2,070	4,149	6,119	7,778	9,174	10,380	11,434	12,351	13,779	14,650	14,977
330817	21,300	-3,450	0,000	2,069	4,145	6,089	7,718	9,092	10,283	11,327	12,239	13,671	14,562	14,915
334154	21,500	-3,450	0,000	2,068	4,141	6,057	7,656	9,010	10,186	11,221	12,128	13,564	14,473	14,852
337493	21,700	-3,450	0,000	2,068	4,135	6,023	7,592	8,926	10,090	11,116	12,018	13,457	14,384	14,790

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
340834	21,900	-3,450	0,000	2,067	4,128	5,986	7,527	8,842	9,993	11,010	11,909	13,351	14,295	14,727
344177	22,100	-3,450	0,000	2,067	4,120	5,946	7,460	8,757	9,896	10,906	11,800	13,245	14,206	14,665
347522	22,300	-3,450	0,000	2,066	4,110	5,904	7,391	8,670	9,798	10,801	11,692	13,139	14,118	14,602



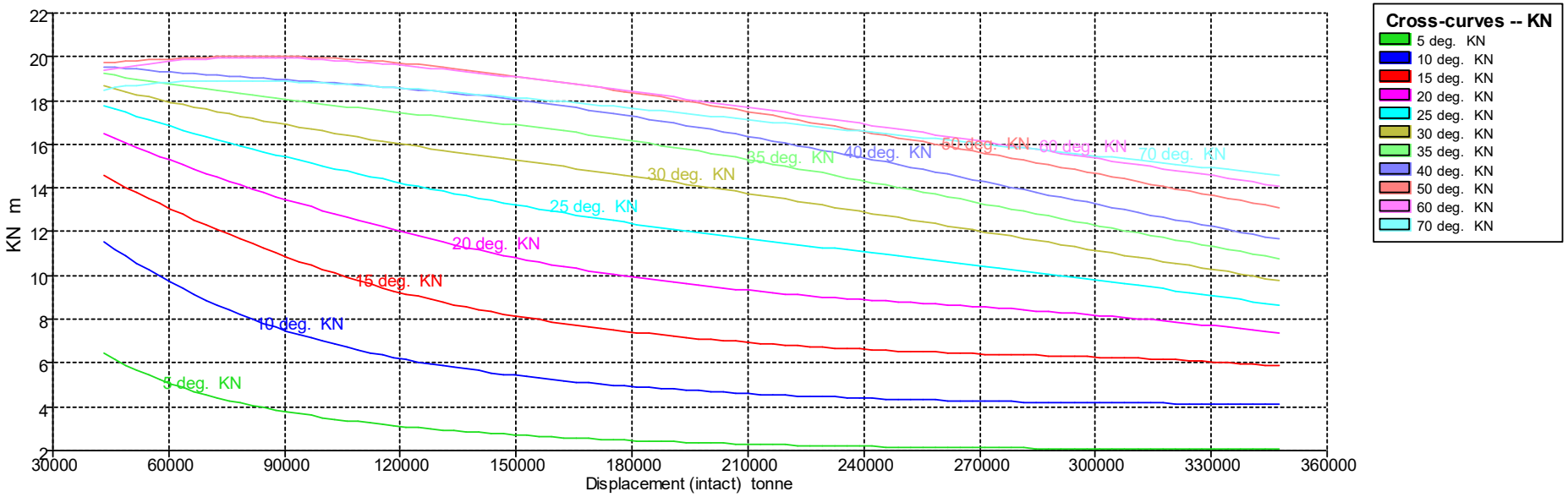
11.9 Initial Trim = -4,6 m (+ve by stern)- Specific gravity = 1,025; (Density = 1,025 tonne/m^3)- VCG = 16 m; TCG = 0 m

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
43126	3,100	-4,600	0,000	6,463	11,534	14,574	16,487	17,774	18,649	19,222	19,558	19,707	19,385	18,491
46000	3,300	-4,600	0,000	6,172	11,202	14,307	16,276	17,609	18,526	19,140	19,517	19,744	19,474	18,576
48891	3,500	-4,600	0,000	5,904	10,878	14,044	16,066	17,446	18,405	19,058	19,474	19,779	19,556	18,650
51796	3,700	-4,600	0,000	5,659	10,562	13,785	15,860	17,285	18,285	18,977	19,431	19,815	19,630	18,713

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
54715	3,900	-4,600	0,000	5,436	10,256	13,529	15,656	17,126	18,167	18,898	19,389	19,848	19,697	18,767
57646	4,100	-4,600	0,000	5,231	9,960	13,279	15,455	16,969	18,050	18,819	19,348	19,880	19,756	18,812
60589	4,300	-4,600	0,000	5,043	9,674	13,032	15,258	16,815	17,935	18,742	19,307	19,909	19,808	18,848
63557	4,500	-4,600	0,000	4,869	9,398	12,791	15,063	16,662	17,823	18,666	19,266	19,935	19,851	18,876
66537	4,700	-4,600	0,000	4,709	9,134	12,554	14,872	16,513	17,711	18,591	19,227	19,957	19,886	18,897
69527	4,900	-4,600	0,000	4,560	8,882	12,321	14,684	16,366	17,601	18,517	19,189	19,975	19,915	18,911
72527	5,100	-4,600	0,000	4,422	8,642	12,093	14,500	16,221	17,493	18,445	19,151	19,991	19,936	18,920
75535	5,300	-4,600	0,000	4,294	8,414	11,869	14,318	16,078	17,387	18,374	19,113	20,003	19,951	18,922
78551	5,500	-4,600	0,000	4,174	8,198	11,652	14,138	15,937	17,283	18,304	19,077	20,011	19,960	18,918
81575	5,700	-4,600	0,000	4,061	7,993	11,438	13,964	15,799	17,180	18,235	19,041	20,015	19,962	18,910
84607	5,900	-4,600	0,000	3,956	7,801	11,230	13,791	15,664	17,079	18,167	19,006	20,015	19,959	18,898
87645	6,100	-4,600	0,000	3,857	7,620	11,026	13,622	15,530	16,979	18,100	18,971	20,011	19,951	18,882
90691	6,300	-4,600	0,000	3,764	7,448	10,828	13,455	15,399	16,881	18,034	18,937	20,003	19,937	18,862
93743	6,500	-4,600	0,000	3,676	7,286	10,636	13,292	15,269	16,785	17,969	18,903	19,991	19,919	18,840
96803	6,700	-4,600	0,000	3,594	7,133	10,449	13,131	15,142	16,690	17,905	18,869	19,974	19,896	18,815
99868	6,900	-4,600	0,000	3,516	6,988	10,268	12,973	15,017	16,596	17,843	18,834	19,953	19,868	18,788
102941	7,100	-4,600	0,000	3,443	6,850	10,093	12,817	14,893	16,504	17,781	18,798	19,927	19,837	18,759
106019	7,300	-4,600	0,000	3,374	6,719	9,924	12,664	14,772	16,413	17,720	18,760	19,898	19,803	18,727
109104	7,500	-4,600	0,000	3,308	6,595	9,761	12,514	14,652	16,324	17,660	18,721	19,865	19,765	18,694
112194	7,700	-4,600	0,000	3,247	6,477	9,604	12,366	14,534	16,235	17,601	18,681	19,828	19,724	18,659
115290	7,900	-4,600	0,000	3,188	6,365	9,453	12,221	14,418	16,148	17,543	18,638	19,787	19,681	18,623
118392	8,100	-4,600	0,000	3,133	6,258	9,308	12,078	14,303	16,063	17,485	18,594	19,742	19,635	18,585
121499	8,300	-4,600	0,000	3,080	6,157	9,170	11,939	14,190	15,978	17,428	18,548	19,694	19,587	18,546
124611	8,500	-4,600	0,000	3,030	6,060	9,037	11,802	14,079	15,895	17,370	18,500	19,642	19,537	18,506
127729	8,700	-4,600	0,000	2,983	5,968	8,910	11,668	13,969	15,812	17,312	18,450	19,588	19,485	18,464
130851	8,900	-4,600	0,000	2,938	5,880	8,788	11,537	13,861	15,731	17,253	18,397	19,530	19,431	18,421
133978	9,100	-4,600	0,000	2,895	5,796	8,671	11,409	13,754	15,651	17,193	18,342	19,470	19,375	18,377
137109	9,300	-4,600	0,000	2,855	5,716	8,559	11,285	13,649	15,573	17,133	18,284	19,407	19,317	18,332
140244	9,500	-4,600	0,000	2,816	5,640	8,452	11,163	13,545	15,495	17,071	18,224	19,342	19,258	18,287
143384	9,700	-4,600	0,000	2,779	5,567	8,349	11,045	13,443	15,418	17,008	18,161	19,274	19,197	18,240
146527	9,900	-4,600	0,000	2,744	5,498	8,250	10,931	13,342	15,343	16,944	18,096	19,205	19,135	18,193
149674	10,100	-4,600	0,000	2,710	5,431	8,156	10,820	13,243	15,268	16,879	18,029	19,133	19,072	18,144
152825	10,300	-4,600	0,000	2,678	5,368	8,065	10,712	13,145	15,193	16,812	17,959	19,060	19,007	18,095
155979	10,500	-4,600	0,000	2,648	5,307	7,978	10,608	13,049	15,119	16,743	17,887	18,984	18,941	18,045
159137	10,700	-4,600	0,000	2,619	5,250	7,895	10,508	12,955	15,044	16,673	17,812	18,907	18,873	17,995
162298	10,900	-4,600	0,000	2,591	5,194	7,815	10,411	12,862	14,969	16,601	17,735	18,829	18,805	17,944
165463	11,100	-4,600	0,000	2,564	5,141	7,738	10,317	12,771	14,894	16,527	17,656	18,748	18,736	17,892
168630	11,300	-4,600	0,000	2,539	5,091	7,664	10,227	12,682	14,819	16,451	17,575	18,667	18,666	17,839
171801	11,500	-4,600	0,000	2,515	5,043	7,593	10,140	12,595	14,743	16,373	17,491	18,584	18,594	17,787
174974	11,700	-4,600	0,000	2,492	4,997	7,526	10,057	12,510	14,666	16,294	17,406	18,500	18,522	17,733
178150	11,900	-4,600	0,000	2,469	4,952	7,461	9,976	12,426	14,589	16,212	17,319	18,414	18,449	17,680

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
181329	12,100	-4,600	0,000	2,448	4,910	7,398	9,898	12,345	14,511	16,129	17,230	18,328	18,375	17,626
184510	12,300	-4,600	0,000	2,428	4,870	7,338	9,823	12,265	14,432	16,044	17,140	18,240	18,301	17,571
187695	12,500	-4,600	0,000	2,409	4,831	7,281	9,751	12,187	14,352	15,957	17,048	18,151	18,226	17,516
190883	12,700	-4,600	0,000	2,390	4,794	7,226	9,682	12,111	14,271	15,868	16,954	18,061	18,150	17,461
194074	12,900	-4,600	0,000	2,372	4,759	7,173	9,615	12,037	14,189	15,777	16,859	17,970	18,074	17,405
197268	13,100	-4,600	0,000	2,356	4,725	7,123	9,550	11,964	14,106	15,685	16,763	17,878	17,996	17,349
200465	13,300	-4,600	0,000	2,339	4,693	7,074	9,488	11,893	14,022	15,591	16,666	17,785	17,919	17,293
203665	13,500	-4,600	0,000	2,324	4,662	7,028	9,429	11,822	13,937	15,496	16,567	17,692	17,841	17,236
206868	13,700	-4,600	0,000	2,309	4,632	6,984	9,372	11,753	13,850	15,399	16,467	17,597	17,762	17,179
210074	13,900	-4,600	0,000	2,295	4,604	6,941	9,316	11,685	13,763	15,301	16,366	17,502	17,683	17,122
213283	14,100	-4,600	0,000	2,282	4,577	6,901	9,263	11,618	13,675	15,201	16,263	17,406	17,603	17,065
216495	14,300	-4,600	0,000	2,269	4,551	6,862	9,212	11,551	13,585	15,100	16,160	17,309	17,523	17,007
219710	14,500	-4,600	0,000	2,257	4,527	6,824	9,163	11,485	13,495	14,998	16,055	17,212	17,442	16,949
222929	14,700	-4,600	0,000	2,245	4,503	6,789	9,116	11,420	13,404	14,895	15,950	17,114	17,361	16,891
226150	14,900	-4,600	0,000	2,234	4,480	6,755	9,071	11,355	13,312	14,791	15,843	17,016	17,280	16,832
229374	15,100	-4,600	0,000	2,223	4,459	6,722	9,028	11,289	13,219	14,686	15,736	16,917	17,198	16,774
232602	15,300	-4,600	0,000	2,213	4,438	6,691	8,986	11,225	13,126	14,580	15,627	16,817	17,116	16,715
235833	15,500	-4,600	0,000	2,203	4,419	6,661	8,946	11,160	13,032	14,473	15,518	16,717	17,034	16,656
239066	15,700	-4,600	0,000	2,194	4,400	6,633	8,907	11,095	12,938	14,366	15,408	16,616	16,951	16,597
242302	15,900	-4,600	0,000	2,185	4,382	6,606	8,869	11,030	12,844	14,257	15,297	16,514	16,868	16,538
245540	16,100	-4,600	0,000	2,176	4,365	6,580	8,832	10,964	12,749	14,148	15,186	16,412	16,785	16,479
248781	16,300	-4,600	0,000	2,168	4,349	6,555	8,795	10,899	12,655	14,038	15,074	16,310	16,702	16,420
252025	16,500	-4,600	0,000	2,161	4,333	6,532	8,759	10,833	12,560	13,928	14,960	16,207	16,618	16,360
255272	16,700	-4,600	0,000	2,153	4,319	6,510	8,723	10,766	12,465	13,818	14,847	16,103	16,534	16,300
258521	16,900	-4,600	0,000	2,147	4,305	6,489	8,687	10,699	12,370	13,708	14,733	16,000	16,450	16,241
261772	17,100	-4,600	0,000	2,140	4,292	6,469	8,651	10,632	12,274	13,597	14,619	15,895	16,366	16,181
265027	17,300	-4,600	0,000	2,134	4,279	6,450	8,615	10,563	12,179	13,486	14,504	15,791	16,281	16,121
268284	17,500	-4,600	0,000	2,128	4,267	6,432	8,579	10,494	12,084	13,375	14,390	15,686	16,196	16,061
271546	17,700	-4,600	0,000	2,122	4,256	6,415	8,542	10,425	11,988	13,264	14,274	15,580	16,111	16,002
274809	17,900	-4,600	0,000	2,117	4,245	6,398	8,505	10,354	11,892	13,153	14,159	15,475	16,026	15,942
278076	18,100	-4,600	0,000	2,112	4,235	6,383	8,467	10,284	11,796	13,042	14,043	15,368	15,940	15,881
281346	18,300	-4,600	0,000	2,108	4,226	6,367	8,428	10,213	11,700	12,931	13,927	15,262	15,854	15,821
284619	18,500	-4,600	0,000	2,103	4,217	6,352	8,388	10,141	11,604	12,820	13,811	15,156	15,768	15,761
287895	18,700	-4,600	0,000	2,099	4,209	6,337	8,347	10,068	11,508	12,710	13,695	15,049	15,682	15,701
291174	18,900	-4,600	0,000	2,095	4,201	6,321	8,305	9,995	11,412	12,600	13,580	14,942	15,595	15,640
294456	19,100	-4,600	0,000	2,092	4,194	6,305	8,262	9,922	11,316	12,490	13,463	14,834	15,509	15,579
297742	19,300	-4,600	0,000	2,089	4,188	6,289	8,217	9,847	11,220	12,380	13,347	14,727	15,422	15,519
301032	19,500	-4,600	0,000	2,086	4,182	6,272	8,171	9,772	11,124	12,271	13,232	14,619	15,335	15,458
304324	19,700	-4,600	0,000	2,083	4,176	6,254	8,124	9,697	11,028	12,162	13,118	14,511	15,248	15,397
307621	19,900	-4,600	0,000	2,080	4,171	6,235	8,075	9,621	10,932	12,054	13,003	14,403	15,160	15,335
310922	20,100	-4,600	0,000	2,078	4,166	6,215	8,025	9,544	10,836	11,946	12,889	14,296	15,073	15,274

Displacement (intact) tonne	Draft Amidships m	Trim (+ve by stern) m	TCG m	KN 5,0 deg. Starb.	KN 10,0 deg. Starb.	KN 15,0 deg. Starb.	KN 20,0 deg. Starb.	KN 25,0 deg. Starb.	KN 30,0 deg. Starb.	KN 35,0 deg. Starb.	KN 40,0 deg. Starb.	KN 50,0 deg. Starb.	KN 60,0 deg. Starb.	KN 70,0 deg. Starb.
314226	20,300	-4,600	0,000	2,076	4,162	6,193	7,973	9,466	10,740	11,838	12,776	14,188	14,985	15,213
317535	20,500	-4,600	0,000	2,074	4,158	6,170	7,919	9,388	10,644	11,730	12,663	14,080	14,897	15,151
320848	20,700	-4,600	0,000	2,073	4,153	6,145	7,864	9,309	10,548	11,623	12,550	13,972	14,809	15,089
324166	20,900	-4,600	0,000	2,071	4,149	6,119	7,808	9,229	10,452	11,516	12,438	13,864	14,721	15,027
327488	21,100	-4,600	0,000	2,070	4,144	6,090	7,749	9,148	10,356	11,410	12,327	13,756	14,633	14,965
330815	21,300	-4,600	0,000	2,069	4,138	6,059	7,689	9,066	10,259	11,304	12,216	13,649	14,544	14,903
334145	21,500	-4,600	0,000	2,068	4,131	6,027	7,628	8,984	10,163	11,199	12,106	13,542	14,456	14,841
337479	21,700	-4,600	0,000	2,067	4,123	5,992	7,564	8,901	10,066	11,093	11,996	13,436	14,367	14,778
340815	21,900	-4,600	0,000	2,066	4,114	5,954	7,499	8,817	9,970	10,989	11,888	13,331	14,279	14,716
344154	22,100	-4,600	0,000	2,066	4,103	5,915	7,432	8,732	9,873	10,885	11,779	13,226	14,190	14,654
347495	22,300	-4,600	0,000	2,066	4,090	5,872	7,364	8,646	9,776	10,781	11,672	13,122	14,102	14,591



12 BIBLIOGRAFÍA

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[2] V. D. Casás y B. P. Varela, Asignatura: "Proyectos de buques y artefactos marinos I", Ferrol: Escuela Politécnica Superior, UDC, 2020/2021.

RIVAS CABANAS MINERVA - 34284839G

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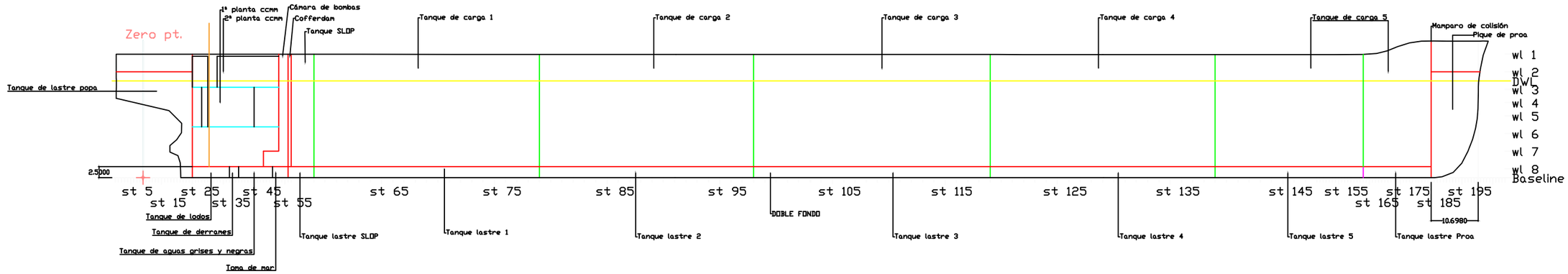
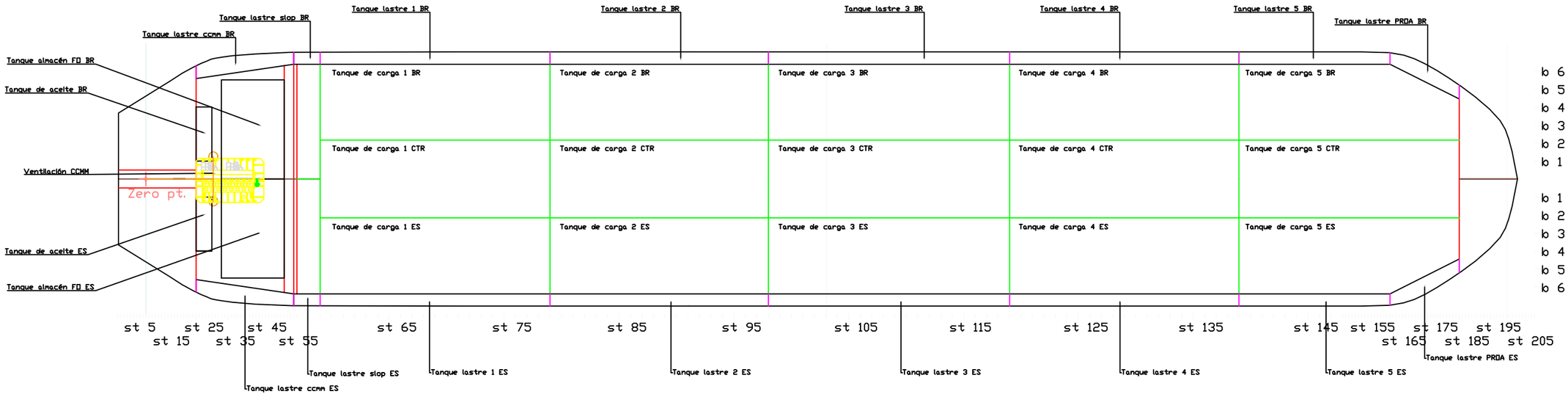
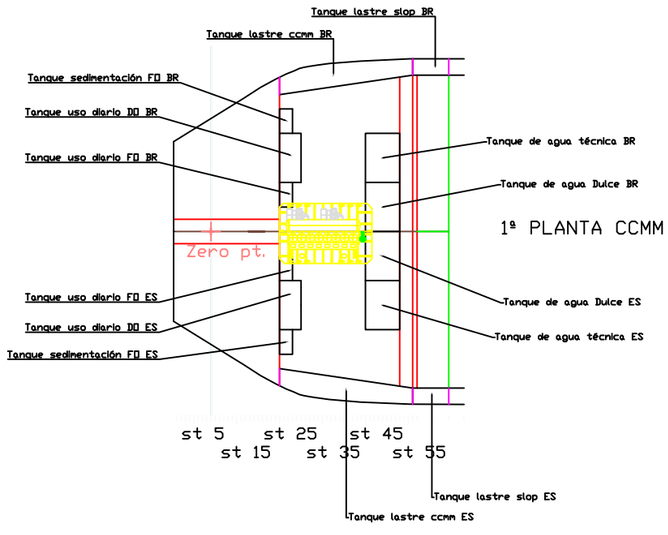
13 ANEXO I: REPRESENTACIÓN TANQUES AUTOCAD Y ZONA ESTANCA







UNIVERSIDADE DA CORUÑA

UNIVERSIDAD:
ESCUELA POLITÉCNICA SUPERIOR, UDC

TRABAJO FIN DE GRADO:
PETROLERO DE CRUDO DE 275000 TPM

PLANO:
Distribución de tanques

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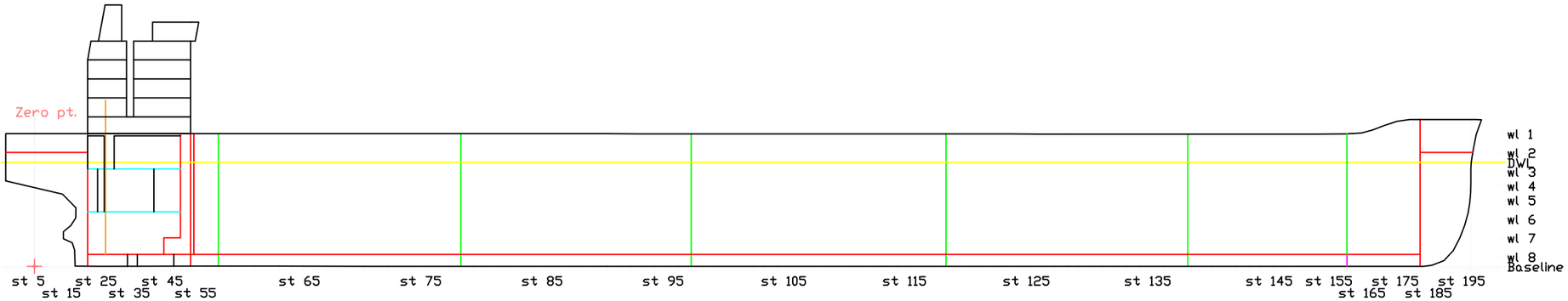

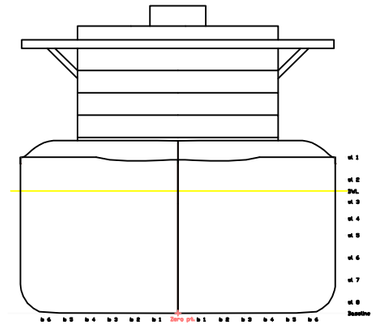

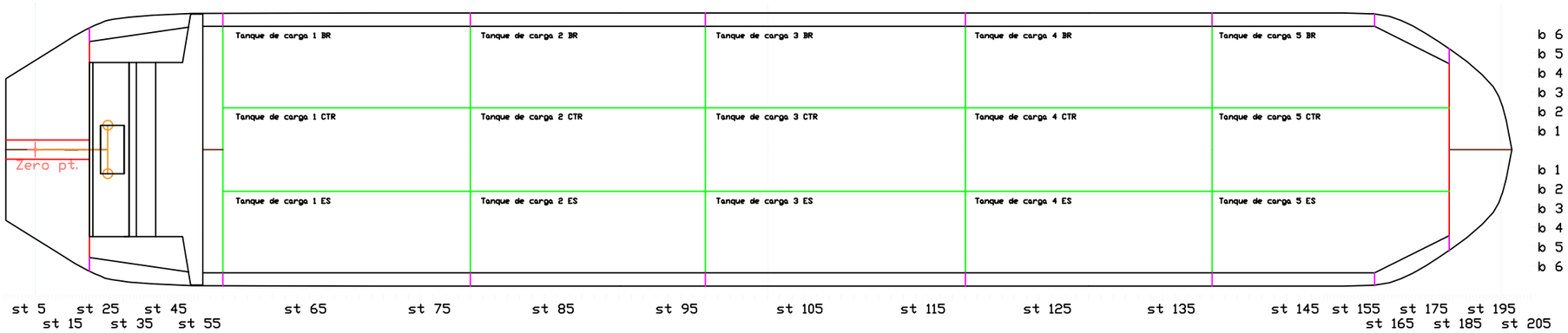

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TRABAJO FIN DE GRADO:
PETROLERO DE CRUDO DE 275000 TPM

PLANO:
Zona estanca y ventilación de ccmm

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