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INTERNATIONAL TWELVE METRE CLASS

Yacht's Name	***THEA***
National letters and Sail Number	***D1*** **Club** ***Kongelig Dansk Yachtklub***
Designer	***Johan Anker***
Builder	***Anker & Jensen*** **Year Built** ***1918***
Owner	***Hans Michael Jebsen***
Owner's Address	***c/o Capemille Aps, Kvæsthusgade 1, 1251 Kopenhagen***
Lloyds R class certificate (Number or Date)	

APPENDIX E - RATING CERTIFICATE

This yacht has been measured by measurer(s) appointed by the International Twelve Metre Association and has been found to rate not more than 12.000 metres.

This certificate is dated **December 20, 2017**

Measurer **K.-E. Brink** Signature

Valid until **December 19, 2019**

Supersedes **August 3, 2013**

Signature _____
ITMA Technical Director

I . T . M . A
12
World
INTERNATIONAL
TWELVE METRE
ASSOCIATION

Stamp of Authority of the
International Twelve Metre Association

Yacht's name : THEA	D1	Dec 20, 2017

RATING CALCULATION

OVERALL LENGTH					**20.063**
Overhang Forward to L1				2.673	
Overhang Aft to L1				2.972	
Total Overhang (Subtract)				5.645	
MEASURED LENGTH (L1 L1)					**14.418**
Girth at Bow				1.694	
Twice vertical Height at Bow (Subtract)				1.200	
O at Bow				0.494	
Add 1 1/2 O at Bow (min 0.540 m)				**0.741**	
Girth at Stern				3.123	
Twice vertical Height at Stern (Subtract)				1.584	
O at Stern				1.539	
Add 1/3 O at Stern (min 0.400 m)				**0.513**	
Add any penalty (Beam)				**0.000**	
Sum of Length and Girth Corrections					**15.672**
Age Date and Allowance	1918	Allowance	0.9469		
CORRECT LENGTH L					**14.840**
Skin d to d1 Port				3.227	
Chain d to d1 Port				3.175	
d Port				0.052	
Skin d to d1 Starboard				3.230	
Chain d to d1 Starboard				3.176	
d Starboard				0.054	
Add d				0.106	
Add GIRTH 2 d					**0.212**
Mean Freeboard Bow O		Actual	1.260	1.267	
Mean Freeboard Midship d		Actual	0.982	0.990	
Mean Freeboard Stern O		Actual	0.965	0.972	
Sum of Freeboards				3.229	
Subtract FREEBOARD, F				See Notes	**1.076**
Add SAIL AREAS (Square root)					**12.864**
TOTAL OF MEASUREMENTS					**26.840**
PENALTY (Tumblehome)				0.199	
RATING					**11.523**

Date and place of Measurement	**December 20, 2017**		
Measurer's Name(s)	**K.-E. Brink**	Signature	

Yacht's name : THEA	D1	Dec 20, 2017

PENALTIES

OVERALL LENGTH		**20.063**
Overhang Forward to L	3.508	
Overhang Aft to L	3.613	
Subtract from overall length	7.121	
Difference of imersion from salt to fresh water	0.008	
WATERLINE LENGTH		**12.942**
Minimum Displacement for Zero Penalty [m3]	20.535	
Minimum Weight for Zero Penalty [tonnes] (Water of sg 1.025)	**21.048**	
ACTUAL WEIGHT [tonnes]		**23.654**
Equivalent LWL (for Displ. < min.)	13.603	
Difference	0.661	
DISPLACEMENT PENALTY (add to L)		**0.000**
DRAUGHT (actual)	2.563	
Max. Draught for Zero Penalty	2.571	
Difference (if positive)		
DRAUGHT PENALTY (add to Rating)		**0.000**
BEAM (Min)	3.600	
Max Beam at 1/3 of Midship Freeboard	3.495	
Difference (if positive)	0.105	
BEAM PENALTY (add to L)		**0.000**
Tumblehome Max. (2 x 2% of Extr. Beam)	0.140	
Extreme Beam	3.495	
Beam at deck	3.289	
Difference (if positive)	0.206	
TUMBLEHOME PENALTY (add to Rating)		**0.199**

Date and place of Measurement **December 20, 2017**

Measurer's Name(s) **K.-E. Brink** Signature

Yacht's name : THEA	D1	Dec 20, 2017

SAIL PLAN

Max Height of Sail Plan =	24.206	**J=**	6.850	**I =**	18.747
Boom Height =	1.226	**A=**	22.980	**B=**	9.310
Rated Mainsail Area	**106.972**	Spi boom=	7.660		**12.864**
Rated Foretriangle Area	**61.031**	Propeller allowance			0.985
TOTAL RATED SAIL AREA	**168.003**	Corrected sail area			165.483

SAIL LIMITS

Mainsail max girth:	1/2 height (68%)	6.331	3/4 height (41%)	3.817
Genoa:	max. foot length (J + 4.8m)	11.650		
Spinnaker:	1/2 foot max breadth (125% J)	9.575	max. luff length=	18.701

Spar Measurement

MAST (material)	Wood	Mast Weight	601	CG pos.	9.624

	Deck	Half-Height	Jib-Halyard	Head
Mast dimensions [mm]	325*251	334*244	270*208	183*156
Sections area [cm^2]	640	640	441	224

Engine/Propeller Installation

Engine and propeller weight		Propeller diameter =	> 0.400
Minimum boat speed with engine	> 7 kn	Propeller position =	on centreline
Engine model and power			

Flotation

1 Flotation measured on the 29th of June 2017 in Glücksburg, specific seawater gravity 1.013 t/m^3

2 No internal Ballast

Measurer's Notes

1 Freeboard in Rating as per 1933-1970 Rule (Sum/3,Max 1.21)

2 No beam penalty applied according to Appendix E

3 Displacement volume derived by 3D hull scan

4 Flotation Range Measurement was applied, hull marks valid for specific seawater gravity of 1.013 t/m^3

5 New wooden mast manufactured by Robbe & Berking Classics 2017

Date and place of Measurement	**December 20, 2017**		
Measurer's Name(s)	**K.-E. Brink**	Signature