INTERNATIONAL TWELVE METRE CLASS

Yacht's Name	***BLUE MARLIN***
National letters and Sail Number	***FIN-1*** **Club** ***NJK Helsinki***
Designer	***Charles Nicholson***
Builder	***Camper & Nicholson*** **Building Year** ***1937***
Owner	***Henrik Andersin***
Owner's Address	***Bredavagen 36, 02777 Grankulla, Finland***
Lloyds R class certificate (Number or Date)	***Lloyds***

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:	**16-Aug-21**	
Measurer	**Kay-Enno Brink**	Signature
Valid until	**16-Aug-23**	
Supersedes	**1-Jun-21**	
Is this an **Appendix E** Certificate?	**Y / N**	**Y**
Was **Appendix F** used for Measurement?	**Y / N**	**N**

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 : BLUE MARLIN	Date	16-Aug-21

RATING CALCULATION

OVERALL LENGTH				**21.532**
Overhang Forward to FGS			2.580	
Overhang Aft to AGS			3.142	
Total Overhang (Subtract)			5.722	
MEASURED LENGTH (LBG)				**15.810**
Girth at Bow			1.616	
Twice vertical Height at Bow (Subtract)			1.200	
Girth Difference at FGS			0.416	
Add 1.5 Grith Difference at FGS (min 0.540 m)			**0.624**	
Girth at Stern			2.978	
Twice vertical Height at Stern (Subtract)			1.576	
Girth Difference at AGS			1.402	
Add 1/3 Girth Difference at AGS (min 0.400 m)			**0.467**	
Add any penalty (Beam or Displacement)			**0.000**	
Sum of Length and Girth Corrections				**16.901**
Age/Date Correction Factor (ADCF)(see page 3)		0.9589		
LENGTH (L)				**16.207**
Skin IM to d1 Port			2.106	
Chain IM to d1 Port			2.102	
d Port			0.004	
Skin IM to d1 Starboard			2.109	
Chain IM to d1 Starboard			2.105	
d Starboard			0.004	
Add d			0.008	
Add GIRTH 2 d				**0.016**
	Datum Sta.	Actual Sta.	Rating FB	
Mean Freeboard Bow		1.337	1.337	
Mean Freeboard Midship		1.032	1.032	
Mean Freeboard Stern		0.968	0.968	
Sum of Freeboards			3.337	
Subtract FREEBOARD, F			See Notes	**1.112**
Add SAIL AREAS (Square root)				**13.329**
TOTAL OF MEASUREMENTS				**28.440**
PENALTY (Draft or Tumblehome)			0.000	
RATING				**12.000**

Date and Place of Measurement	**1-Jun-21 Kotka**	**16-Aug-21 Helsinki**	
Measurer's Name(s)	**Kay-Enno Brink**	**Signature**	

Yacht's name : BLUE MARLIN		*Date*	*16-Aug-21*
Range Measurement (Yes or No)	N	Date:	*1-Jun-21*

PENALTIES

Overhang Forward to **MWL**		3.085	
Overhang Aft to **MWL**		3.877	
Subtract from overall length		6.962	
Difference of immersion from salt to fresh water	Meas. Density		
WATERLINE LENGTH (LWL)			**14.570**
Minimum Displacement for Zero Penalty [m3]		28.765	
Minimum Weight for Zero Penalty [ton] (Water of sg 1.025)		29.484	
WEIGHT [tonne] Actual weight			**30.639**
Equivalent LWL (for Displ. < min.)		14.767	
Difference		0.197	
DISPLACEMENT PENALTY (add to L)			**0.000**
Displacement Determination Method		3D-Scan	
DRAFT (actual)		2.825	
Max. Draft for Zero Penalty		2.831	
Difference (if positive)			
DRAFT PENALTY (add to Rating)			**0.000**
BEAM (Min)		3.600	
Max Beam at 1/3 of Midship Freeboard		3.616	
Difference (if positive)			
BEAM PENALTY (add to L)			**0.000**
Tumblehome Max. (2 x 2% of Extr. Beam)		0.145	
Extreme Beam		3.616	
Beam at deck		3.496	
Difference (if positive)		0.120	
TUMBLEHOME PENALTY (add to Rating)			**0.000**

Date and Place of Measurement	**1-Jun-21 Kotka**	**16-Aug-21 Helsinki**	
Measurer's Name(s)	**Kay-Enno Brink**	**Signature**	

Design/Age Correction Factor Calculation

Age Date	1937		
ADCF (Table E-2)	0.9589		
Hull Alteration Scope and Date			
Appendage Change Scope and Date			
Change/Alteration Correction ADCF			
Accommodation Deficiency Ballast	none		

Yacht's name : BLUE MARLIN	*Date*	*16-Aug-21*

SAIL PLAN

Max Height of Sail Plan =	25.000	**J=**	7.290	**I =**	18.750
Boom above Mast Datum =	1.545	**P=**	23.455	**E=**	10.340
Rated Mainsail Area	121.262	Spi boom=	7.650	**√S=**	**13.329**
J used for Rating	7.650				
Rated Foretriangle Area	60.961	Propeller allowance			0.975
TOTAL RATED SAIL AREA (**S**)	182.223	Corrected sail area			177.668

SAIL LIMITS

Mainsail max girth:	1/2 height (68% of E)	7.031	3/4 height (41% of E)	4.239
Genoa:	max. foot length (J + 4.8m)	12.090		
Spinnaker:	1/2 foot max breadth (125% J)	9.563	max. luff length=	18.700

Spar Measurement

MAST (material)	aluminium	Mast Weight	459	CG pos.	9.510
	Deck	Half-Height	Jib-Halyard	Head	
Mast dimensions [mm]	352*248	351*248	282*205	170*125	
Sections area [cm^2]	685	683	454	167	
Mast CG Correction (if applicable) Wt & CG			Mk²		

Engine/Propeller Installation

Engine and propeller weight	450 kg	Propeller diameter =	0.610
Minimum boat speed with engine	8.5 kn	Propeller position =	on CL
Propeller Type (folding feathering fixed pitch etc.), no of blades		feathering	3
Propeller Skew			-

Flotation

1	The water tank was filled with 115 l water when the yacht was presented for measurement.	
2	Chain in front locker	214 kg located 3.5 m from stem
3	Bow thruster with batteries	240 kg located 5.0 m from stem
4	Li-Ion services and engine batteries	170 kg located 14.4 m from stem
5	Anchor chain/rope	within 3.0 m from mast
6	Internal ballast in the bilge	20 kg @ 2.2 fwd of mast
		58 kg @ 1.8 fwd of mast
		61 kg @ 0.3 fwd of mast
		61 kg @ 1.6 aft of mast
		82 kg @ 2.5 aft of mast

Measurer's Notes

1	Draft and displacement penalties do not apply under Appendix E.
2	Rated freeboard is one third of the sum of the mean freeboards as per 1933 rule.

Date and Place of Measurement	**1-Jun-21 Kotka**	**16-Aug-21 Helsinki**
Measurer's Name(s)	**Kay-Enno Brink**