

APH: **538.5** CDL: **10.531**

GPH: **609.9** CertNo: **PER118**

BOAT

Class **F45F5**
Designer **Farr**
Builder **Beneteau**
Age date **01/1992**
Series date **01/1989**
Offset file **First45F5.off**
Data file **PER2000**

HULL

Length Overall **13.720 m**
Maximum Beam **4.234 m**
Draft **2.197 m**
Displacement **10,897 kg**
DLR **6.9188**
IMS Division **Cruiser/Racer**
Dynamic Allowance **0.367%**
Age Allowance **0.487%**

PROPELLER

Installation **Shaft exposed**
Type **Feathering 2 blades**
Diameter **0.510m**

CREW

Maximum weight **800 kg**
Minimum weight **600 kg** * when applied
Non Manual Power **No**
Crew Arm Extension

SAIL AREAS (m²)

	Measured	Rated
Mainsail	48.08	48.92
Headsail Luffed	50.46	50.46
Headsail Flying		
Symmetric	106.41	106.41
Asymmetric		

STORM SAIL AREAS (m²)

Trysail	14.15
Storm Jib	13.36
Heavy Weather Jib	36.07

SAIL LIMITS

Headsails	6
Spinnakers	4

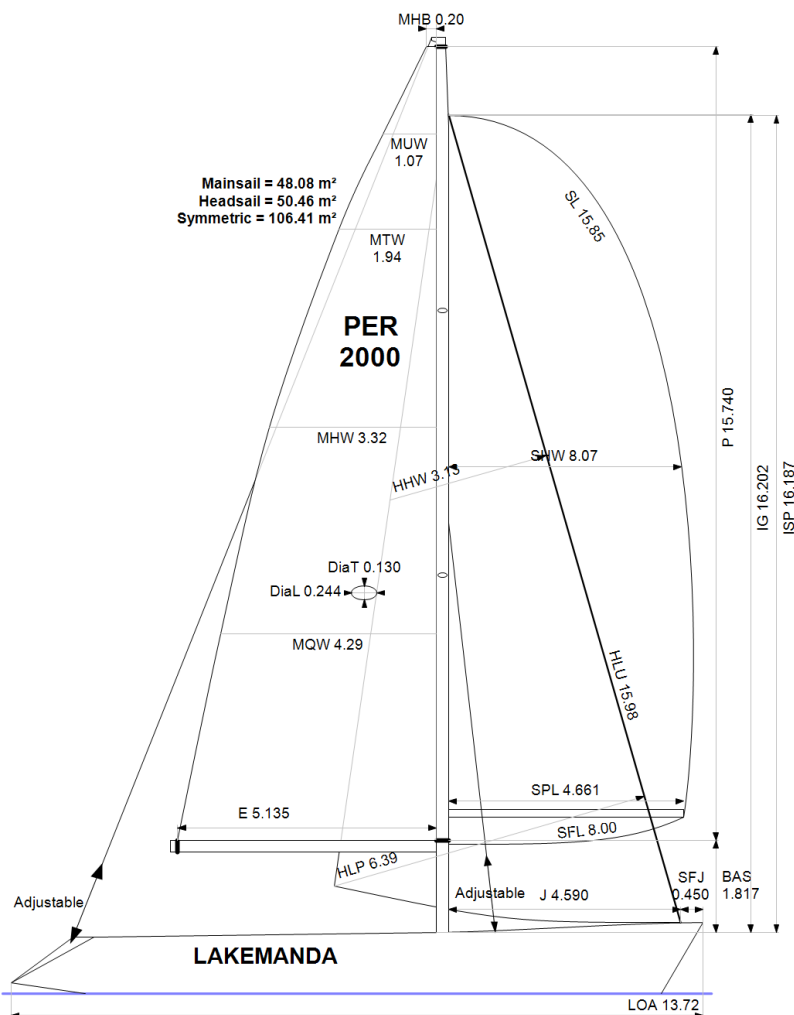
STABILITY

Righting Moment	260.6 kg·m
Stability Index	115.4

COMMENTS

NUEVO ARMADOR MEDICION FLOTACION Y ESTABILIDAD

The owner and any other person in charge is responsible that boat is complying with her certificate in accordance with RRS 78.1 and ORC Rule 304.



Rated boat velocities in knots

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	44.2°	42.4°	41.8°	41.2°	40.0°	39.6°	39.6°
Beat VMG	3.40	4.15	4.74	5.20	5.45	5.57	5.65
52°	5.27	6.30	7.12	7.60	7.84	7.94	8.03
60°	5.61	6.65	7.41	7.82	8.04	8.17	8.27
75°	5.88	6.94	7.63	7.99	8.24	8.44	8.70
90°	5.80	6.88	7.64	8.09	8.33	8.55	9.01
110°	5.60	6.85	7.74	8.20	8.56	8.91	9.41
120°	5.41	6.64	7.61	8.12	8.48	8.85	9.61
135°	4.85	6.02	7.04	7.77	8.20	8.56	9.35
150°	4.07	5.21	6.19	7.09	7.76	8.17	8.87
Run VMG	3.52	4.51	5.37	6.17	6.88	7.49	8.30
Gybe Angles	144.2°	149.3°	152.0°	153.8°	159.2°	173.0°	179.0°



International
Certificate
2022

Boat
LAKEMANDA
PER-2000

Asociacion de Vela Oceanica
del Peru - AVOP
Roberto Peschiera - Rating Officer
peschiera56@gmail.com



Time Allowances in secs/NM

Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	1059.3	867.4	759.0	691.8	661.1	646.5	636.8
52°	683.6	571.8	505.7	473.5	459.4	453.3	448.5
60°	641.5	541.6	485.5	460.4	447.6	440.7	435.1
75°	612.1	519.1	471.9	450.3	436.9	426.8	414.0
90°	621.1	523.0	471.2	445.2	432.0	420.9	399.4
110°	643.2	525.4	465.0	439.1	420.8	404.1	382.5
120°	665.0	541.8	473.3	443.4	424.3	406.6	374.5
135°	742.7	598.2	511.7	463.3	439.0	420.5	384.8
150°	884.7	690.8	581.1	507.5	464.2	440.7	405.7
Run VMG	1021.6	797.7	670.1	583.8	523.6	480.9	433.6
Selected Courses							
Windward / Leeward	1040.4	832.5	714.6	637.8	592.4	563.7	535.2
All purpose	793.5	645.7	562.9	515.0	488.0	470.8	449.6

Single Number Scoring Options

Course	Time On Distance	Time On Time
Windward / Leeward	671.1	0.8940
All purpose	538.5	1.1142



Data in meters/kilograms (Metric)

HULL AND APPENDAGES (Lightship Trim)

Class	F45F5	LOA	13.720	VCGD	0.058
Measurement	27/12/2014	Max. Beam	4.234	VCGM	0.112
HIN		Draft	2.197	RM Measured (kg·m)	260.6
Plan review		Displacement	10,897	RM Default (kg·m)	263.9
Hull construction	Solid	Wetted area	37.07	Limit of positive stability(°)	110.4
Aramid Hull Core	No	IMS L	11.743	Stability Index	115.4
Carbon Rudder	No	LSM0	11.634		
Light stanchions	No	Acc. length	13.720		
Trim tab	No	Sink (kg/mm)	28.01		

PROPELLER

Propeller Type	Feathering 2 blades										
Installation	Shaft exposed	PRD	0.510	PSD	0.030	PSA	19.0°	ST1	0.044	ST4	0.062
Twin screw	No	PBW	0.154	PHD	0.058	ESL	1.190	ST2	0.124	ST5	0.230
Hydro generator	No	PIPA	0.0053	PHL	0.130			ST3	0.130		

RIG

Forestay tension	Aft	P	15.740	E	5.135
Inner stay	Adjustable	IG	16.202	J	4.590
Carbon mast	No	ISP	16.187	BAS	1.817
Headsail furler	No	MDT1	0.130	FSD	0.043
Mainsail furler	No	MDL1	0.244	SFJ	0.450
Articulated bowsprit	No	MDT2	0.130	SPL	4.661
Non-circular rigging	No	MDL2	0.180	WPL	
Fiber rigging	No	TL	1.600	TPS	
Runners/Checkstays	0	MW	0.240	BD	0.230
Spreaders	2	GO	0.280	MWT	
				MCG	

FLOTATION AND STABILITY

Calculation method	Poles inclining	SFFP	0.650	SAFP	12.088	W1	130.0	PD1	472.5	WD	11.910
Flotation Date	13/06/2017	FFM	1.395	FAM	1.117	W2	130.0	PD2	469.5	PLM	9000.00
Measurer		FF	1.395	FA	1.117	W3	130.0	PD3	463.2	GSA	1.0
Comment		LCFcl	7.325	LCFsh	7.624	W4	130.0	PD4	466.6	RSA	1.0
		SG	1.0253	HBI	1.214						



MAINSAIL

<i>Id</i>	<i>MHB</i>	<i>MUW</i>	<i>MTW</i>	<i>MHW</i>	<i>MQW</i>	<i>Area Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
M-1	0.20	1.07	1.94	3.32	4.29	48.08 07/09/2019	NORTH	Unknown	USADA

HEADSAIL

<i>Id</i>	<i>HHB</i>	<i>HUW</i>	<i>HTW</i>	<i>HHW</i>	<i>HQW</i>	<i>HLP</i>	<i>HLU</i>	<i>Btn</i>	<i>Flying</i>	<i>FT</i>	<i>Area Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
LM-1	0.09	0.79	1.55	3.13	4.71	6.39	15.98	No	No		50.46 07/09/2019	NORTH	Kevlar	USADA
MH	0.09	0.77	1.51	3.05	4.68	6.41	15.97	No	No		49.94 07/09/2019	NORTH	Kevlar	NUEVA

SYMMETRIC SPINNAKER

<i>Id</i>	<i>SLU</i>	<i>SLE</i>	<i>SL</i>	<i>SHW</i>	<i>SFL</i>	<i>Area Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
S2	15.85	15.85	15.85	8.07	8.00	106.41 20/06/2016	NORTH	Nylon	USADO
S1	15.74	15.74	15.74	7.26	7.95	97.04 20/06/2016	QUANTUM	Nylon	USADO