

APH: **487.7** CDL: **10.707**

GPH: **544.5** CertNo: **110502**

BOAT

Class **SOTO 42**
Designer **SOTO ACEBAL**
Builder **M BOATS**
Age date **11/2009**
Series date **11/2009**
Offset file **CHI1105.off**
Data file **PER1105**

HULL

Length Overall **12.700 m**
Maximum Beam **3.110 m**
Draft **2.401 m**
Displacement **6,000 kg**
DLR **5.2963**
IMS Division **Performance**
Dynamic Allowance **0.000%**
Age Allowance **0.422%**

PROPELLER

Installation **Strut**
Type **Folding 2 blades**
Diameter **0.393m**

CREW

Maximum weight **810 kg**
Minimum weight **608 kg** * when applied
Non Manual Power **No**
Crew Arm Extension

SAIL AREAS (m²)

	Measured	Rated
Mainsail	61.13	62.98
Headsail Luffed	40.10	40.10
Headsail Flying		
Symmetric	132.09	132.09
Asymmetric	137.17	137.17

(1 asymmetric(s) with SHW/SFL < 85%)

STORM SAIL AREAS (m²)

Trysail **16.38**
Storm Jib **12.43**
Heavy Weather Jib **33.54**

SAIL LIMITS

Headsails **6**
Spinnakers **4** * Asymmetric SHALL NOT be tacked on the pole

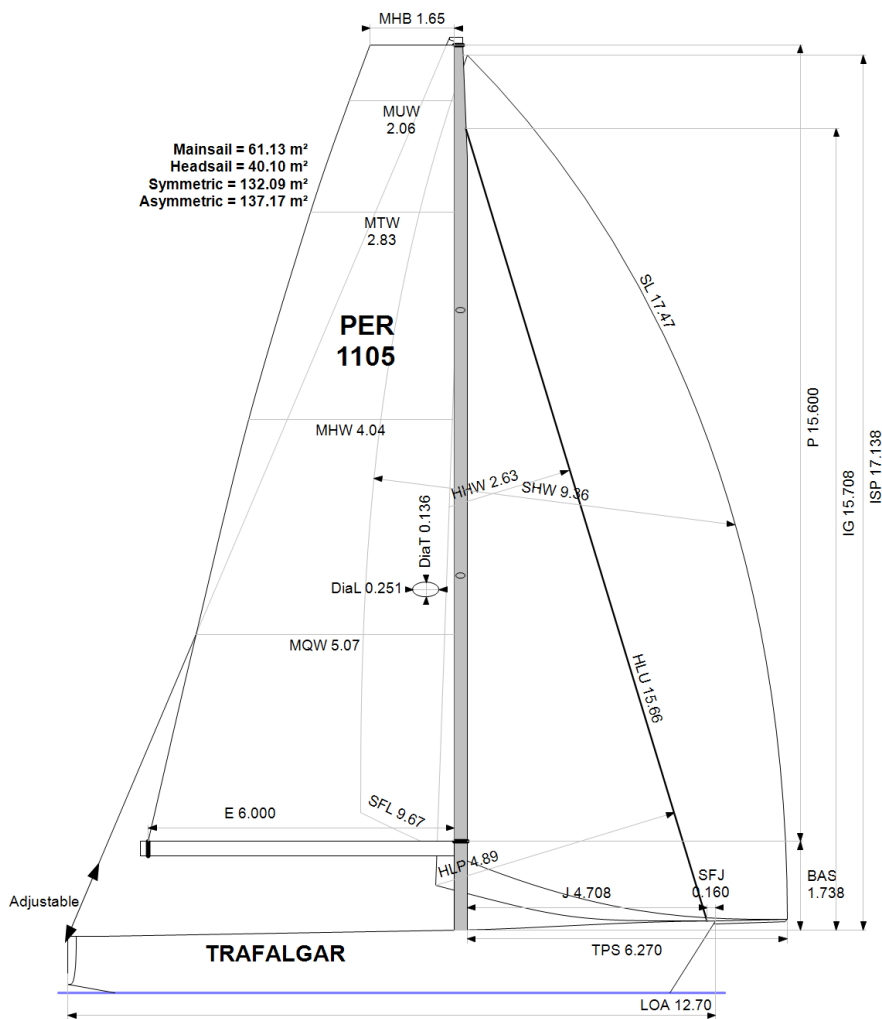
STABILITY

Righting Moment **194.3 kg·m**
Stability Index **141.1**

COMMENTS

EX CHI-1105, EX ECU-1105

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	43.6°	42.0°	40.6°	39.9°	39.3°	38.8°	39.3°
Beat VMG	3.97	4.87	5.31	5.50	5.62	5.75	5.77
52°	6.08	7.31	7.75	7.90	7.98	8.09	8.18
60°	6.46	7.60	7.99	8.14	8.23	8.33	8.48
75°	6.85	7.81	8.23	8.50	8.65	8.76	9.03
90°	7.08	8.04	8.46	8.72	9.06	9.29	9.55
110°	6.80	7.91	8.49	9.07	9.59	9.98	10.66
120°	6.42	7.74	8.41	9.04	9.52	10.20	11.40
135°	5.74	7.17	8.04	8.65	9.32	10.10	12.01
150°	4.84	6.12	7.26	8.01	8.50	9.10	10.52
Run VMG	4.20	5.30	6.29	7.00	7.61	8.15	9.21
Gybe Angles	143.3°	145.1°	149.3°	156.1°	164.9°	175.4°	171.8°



International
Certificate
2022

Boat
TRAFALGAR
PER-1105

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	907.9	739.9	677.5	654.7	640.9	626.4	624.3
52°	591.9	492.4	464.8	455.8	451.4	444.7	439.9
60°	557.7	473.7	450.4	442.1	437.4	432.3	424.3
75°	525.4	460.8	437.3	423.5	416.0	411.0	398.5
90°	508.7	447.9	425.6	413.0	397.5	387.5	376.8
110°	529.1	455.1	423.8	396.8	375.4	360.8	337.9
120°	561.2	465.2	427.9	398.1	378.0	352.9	315.9
135°	626.9	502.1	447.8	416.1	386.1	356.3	299.7
150°	743.1	588.1	495.5	449.7	423.3	395.8	342.2
Run VMG	858.1	679.1	572.2	514.4	473.0	441.8	390.7
Selected Courses							
Windward / Leeward	883.0	709.5	624.9	584.5	556.9	534.1	507.5
All purpose	671.9	553.2	501.5	475.0	456.2	439.5	416.1

Single Number Scoring Options		
Course	Time On Distance	Time On Time
Windward / Leeward	605.6	0.9907
All purpose	487.7	1.2302



Data in meters/kilograms (Metric)

HULL AND APPENDAGES (Lightship Trim)

Class	SOTO 42	LOA	12.700	VCGD	-0.264
Measurement	03/10/2019	Max. Beam	3.110	VCGM	-0.255
HIN		Draft	2.401	RM Measured (kg-m)	194.3
Plan review		Displacement	6,000	RM Default (kg-m)	182.1
Hull construction	Cored	Wetted area	29.25	Limit of positive stability(°)	134.5
Carbon Rudder	Yes	IMS L	11.009	Stability Index	141.1
Light stanchions	No	LSM0	10.424		
Trim tab	No	Acc. length	10.107		
		Sink (kg/mm)	22.65		

PROPELLER

Propeller Type	Folding 2 blades				
Installation	Strut	PRD	0.393	EDL	0.607
Twin screw	No	PBW	0.107	ST1	0.066
Hydro generator	No	PIPA	0.0040	ST2	0.170
				ST3	0.178
				ST4	0.110
				ST5	0.322

RIG

Forestay tension	Aft	P	15.600	E	6.000
Inner stay	None Fitted	IG	15.708	J	4.708
Carbon mast	Yes	ISP	17.138	BAS	1.738
Headsail furler	No	MDT1	0.136	FSD	0.036
Mainsail furler	No	MDL1	0.251	SFJ	0.160
Articulated bowsprit	No	MDT2	0.095	SPL	4.794
Non-circular rigging	No	MDL2	0.157	WPL	
Fiber rigging	No	TL	2.225	TPS	6.270
Runners/Checkstays	0	MW	0.235	BD	0.292
Spreaders	2	GO	0.251	MWT	254.00
				MCG	5.690

FLOTATION AND STABILITY

Calculation method	Poles inclining	SFFP	0.087	SAFP	12.117	W1	95.0	PD1	456.7	WD	11.780
Flotation Date	02/10/2019	FFM	1.405	FAM	1.095	W2	95.0	PD2	458.1	PLM	9000.00
Measurer		FF	1.405	FA	1.096	W3	95.0	PD3	445.6	GSA	1.0
Comment		LCFcl	6.727	LCFsh	6.898	W4	95.0	PD4	454.0	RSA	1.0
		SG	1.0253	HBI	1.229						

INVENTORY

<i>BALLAST</i>	<i>Id</i>	<i>Kind</i>	<i>Description</i>	<i>Weight</i>	<i>LCG</i>	<i>VCG</i>	<i>TCG</i>
	B4	Fixed	8 PANES DE PLOMO DE 25 C/U	200	7.60	-0.30	
	E4	Fixed	10 PANES DE PLOMO DE 25 C/U	250	7.60	-0.30	
	E5	Fixed	24 PANES DE PLOMO DE 25 C/U	600	6.87	-0.30	
	B5	Fixed	24 PANES DE PLOMO DE 25 C/U	600	6.87	-0.30	
	E6	Fixed	6 PANES DE PLOMO DE 25 C/U	150	5.96	-0.30	
	B6	Fixed	6 PANES DE PLOMO DE 25 C/U	150	5.96	-0.30	
	E7	Fixed	4 PANES DE PLOMO DE 25 C/U	100	5.57	-0.30	
	B7	Fixed	4 PANES DE PLOMO DE 25 C/U	100	5.57	-0.30	
	<i>Fixed Ballast Total</i>			2150			
<i>TANKS</i>	<i>Id</i>	<i>Description</i>	<i>Sp.Wght</i>	<i>Capacity</i>	<i>Condition</i>	<i>LCG</i>	<i>VCG</i>
	C3	PETROLEO ALUMINO	0.9000	30	42	8.30	0.00
	<i>Total deductible</i>					11	8.30
	<i>Total deductible</i>					0	0.00
<i>OTHER ITEMS</i>	<i>Id</i>	<i>Kind</i>	<i>Description</i>	<i>Weight</i>	<i>LCG</i>	<i>VCG</i>	
	C4	Battery	2 X 12 V / 75 AMP		32	7.85	0.00
	C4	Engine	YANMAR 36 HP				
	<i>Total deductible</i>					0	



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>
M22	1.65	2.06	2.83	4.04	5.07	61.13 16/07/2022	NORHT SIALS	Kevlar	3DI NUEVA

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>
LM22	0.10	0.76	1.42	2.63	3.75	4.89	15.66	Yes	No		40.10 16/07/2022	NORTH S	Carbon	3DI
MH	0.09	0.67	1.28	2.51	3.74	4.88	15.77	Yes	No		39.36 17/09/2021	NORTH S	Carbon	REMEDICION
LM	0.08	0.72	1.37	2.55	3.70	4.87	15.57	Yes	No		39.15 17/09/2021	NORTH S	Carbon	REMEDICION
WS	0.09	0.64	1.25	2.44	3.65	4.90	15.65	No	No		38.41 16/07/2022	NORTH	Dacron	WINDSEAKER
G3	0.08		1.10	2.23	3.44	4.71	13.96	Yes	No		32.18 23/10/2009	NORTH	Kevlar	
ST	0.08		1.00	2.00	3.04	4.17	13.43	No	No		27.55 23/10/2007	NORTH	Kevlar	STAYSAIL

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>
S2-22	17.77	17.77	17.77	8.97	8.72	132.09 07/07/2022	NORTH	Nylon	
S3	15.34	15.34	15.34	8.42	8.20	107.07 03/10/2019	NORTH SAILS	Nylon	REMEDICION

ASYMMETRIC SPINNAKER

<i>Id</i>	<i>SLU</i>	<i>SLE</i>	<i>SL</i>	<i>SHW</i>	<i>SFL</i>	<i>Ratio</i>	<i>Area Meas.Date</i>	<i>Maker</i>	<i>Material</i>	<i>Comment</i>
A1.5-22	18.81	16.13	17.47	9.36	9.67	97%	137.17 07/07/2022	NORTH	Nylon	
A3	18.22	16.00	17.11	8.40	9.52	88%	122.96 09/08/2022	NORTH SAILS	Nylon	NUEVO
A0	16.40	14.90	15.65	6.40	8.47	76%	88.87 09/08/2022	NORTH	Technora	