

BOAT Name VESPER Sail Nr BRA2447	GPH 514.6	HULL Length Overall 12.300m Maximum Beam 3.796m Displacement 4,501kg Draft 2.614m Plan Review IMS Reg. Division Performance Dynamic Allowance 0.000% Hull Construction Cored Carbon Rudder Yes Crew Arm Extension
GENERAL Class S 40 OD Designer SOTO ACEBAL Builder M BOATS Series 04/2008 Age 09/2008 Age Allowance 0.390% Offset File Soto40cri.off - 11/03/2019 13:13:08 Measurement by - 28/10/2019		IMSL 12.194m VCGD -0.302m Sink 22.71kg/mm RL 11.123m VCGM -0.363m WS 28.89m² LSM0 12.025m Displacement/Length ratio 2.5885



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	502.2			566.8		
Time on Time	1.1948			1.1910		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	578.9	460.4	403.6	749.8	573.8	494.2
Time on Time	1.1660	1.4660	1.6723	0.9003	1.1763	1.3658

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	854.5	700.9	651.9	633.1	619.3	608.2	609.5
52°	555.6	469.4	449.3	441.2	436.5	428.4	425.2
60°	521.6	452.5	434.2	425.4	420.2	411.6	403.2
75°	495.8	440.6	413.9	398.2	388.9	383.2	365.6
90°	498.4	441.0	408.7	379.3	362.0	351.9	340.1
110°	505.0	434.8	408.3	383.8	362.8	339.2	298.2
120°	519.5	437.1	396.8	372.1	351.2	329.1	292.3
135°	584.6	461.7	416.9	373.2	333.0	305.3	268.4
150°	700.3	550.0	467.9	418.7	384.4	343.6	270.8
Run VMG	808.6	635.1	540.3	486.3	443.8	396.8	312.7

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Number **244701**
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VPP Ver. **2020 1.01**
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Crew Weight
Default 895kg
Maximum **815kg**
Minimum* **611kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Non Spin GPH	553.9	1.0832
Non Spin OSN	542.4	1.1062

Selected Courses							
Windward / Leeward	831.6	668.0	596.1	559.7	531.6	502.5	461.1
Circular Random	701.7	570.0	500.2	459.2	432.1	411.9	381.4
Coastal / Long Distance	829.3	628.4	537.3	483.2	448.2	413.8	361.2
Non Spinnaker	770.4	619.2	537.4	488.7	457.1	434.9	404.6

Sails Limitations

Headsails	Spinnakers
7	5

Velocity Prediction in Knots for True Wind Speeds							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	43.5°	41.6°	39.8°	39.0°	38.6°	38.6°	39.4°
Beat VMG	4.21	5.14	5.52	5.69	5.81	5.92	5.91
52°	6.48	7.67	8.01	8.16	8.25	8.40	8.47
60°	6.90	7.96	8.29	8.46	8.57	8.75	8.93
75°	7.26	8.17	8.70	9.04	9.26	9.39	9.85
90°	7.22	8.16	8.81	9.49	9.95	10.23	10.58
110°	7.13	8.28	8.82	9.38	9.92	10.61	12.07
120°	6.93	8.24	9.07	9.68	10.25	10.94	12.32
135°	6.16	7.80	8.64	9.65	10.81	11.79	13.41
150°	5.14	6.55	7.69	8.60	9.37	10.48	13.29
Run VMG	4.45	5.67	6.66	7.40	8.11	9.07	11.51
Gybe Angles	142.0°	140.5°	148.0°	152.0°	148.3°	145.5°	144.9°

Class Division Length
CDL = **11.651**

Storm Sails Areas
Heavy Weather Jib **34.42**
Storm Jib (JL=10.38) **12.75**
Storm Trysail **16.06**

Owner

BOAT	
Name VESPER	Sail Nr BRA2447
File BRA2447	Data in meters/kilograms

RIG	
Forestay Tension Aft	Spreaders 2
Inner Stay None Fitted	Runners/Checkstays 0
Carbon Mast Yes	Jib Furler No
Fiber Rigging Yes	Main Furler No
Non-Circular Rigging No	
Articulated Bowsprit No	
P 16.100	E 5.700 MDT1 0.132 MW 0.246
IG 15.910	J 4.850 MDL1 0.253 GO 0.263
ISP 18.105	SFJ 0.180 MDT2 0.121 BD 0.200
BAS 1.675	SPL 0.000 MDL2 0.187 MWT 189.00
FSD 0.033	TPS 7.330 TL 2.400 MCG 6.200

INCLINING TEST AND FREEBOARDS		
Inclining Test Boom Inclining	LCFD	
Flotation date 28/10/2019	SG 1.0270	
FFM 1.290	FF 1.297	SFFP 0.650
FAM 0.890	FA 0.886	SAFP 12.335
W1 104.0	PD1 284.8	WD 5.500
W2 104.0	PD2 283.5	GSA 1.0
W3 104.0	PD3 281.3	RSA 1.0
W4 104.0	PD4 279.7	PLM 9000.0
LCF from stem on CL / on sheer	6.979 / 7.206	
Maximum beam station from stem	8.600	
RM Measured	159.6kg-m	
RM Default	164.6kg-m	
Limit of positive stability / Stab.Index	129.6° / 126.1	
Freeboard at mast at 5.030	1.165	



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MIZZEN RIG AND SAILS	
N/A	

PROPELLER		
Installation Strut	PRD 0.410	
Type Folding 2 blades	PBW 0.100	
Twin Screw No	PIPA 0.0041	
ST1 0.065	ST3 0.180	ST5 0.315
ST2 0.180	ST4 0.110	EDL 0.760

Certificate	
Number 244701	
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Issued On 06/03/2020	
VPP Ver. 2020 1.01	
Valid until 31/12/2020	

COMMENTS	
OI2016 SOTO 40 ONE DESIGN SOTO 40 009	

MOVABLE BALLAST	
N/A	



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CENTERBOARD	
N/A	

SAILS (Maximum Areas)						
Mainsail	MHB	MUW	MTW	MHW	MQW	Area Area (r) Formula
	1.53	2.01	2.75	3.92	4.89	60.97 62.63 P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)
Symmetric Not Available						
Asymmetric on centerline	SLU	SLE	SL	SHW	SFL	Area Formula
	20.57	17.38	18.98	11.61	11.60	183.55 AS · (SFL + 4·SHW) / 6

HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Flying	Meas.Date	Material	Comment
0.08	0.71	1.35	2.58	3.80	4.94	15.97	40.74	Y	No	25/05/2018	Kevlar	USADAS
0.08	0.71	1.35	2.58	3.78	4.97	15.97	40.74	Y	No	25/05/2018	Kevlar	USADAS
0.07	0.69	1.16	2.36	3.62	4.98	14.61	35.54	Y	No	17/03/2016	Kevlar	USADAS

MEASUREMENT INVENTORY				
Measurer brm11				
Date 28/10/2019				
Comment				
Internal Ballast total = 0.0				
Id	Item	Weight	Distance	VCG Description
Id	Item	Maker	Model	
Engine				
Id	Item	Weight Description		
2	Fwd Items	40.0 - Anteparas BB-e-BE		

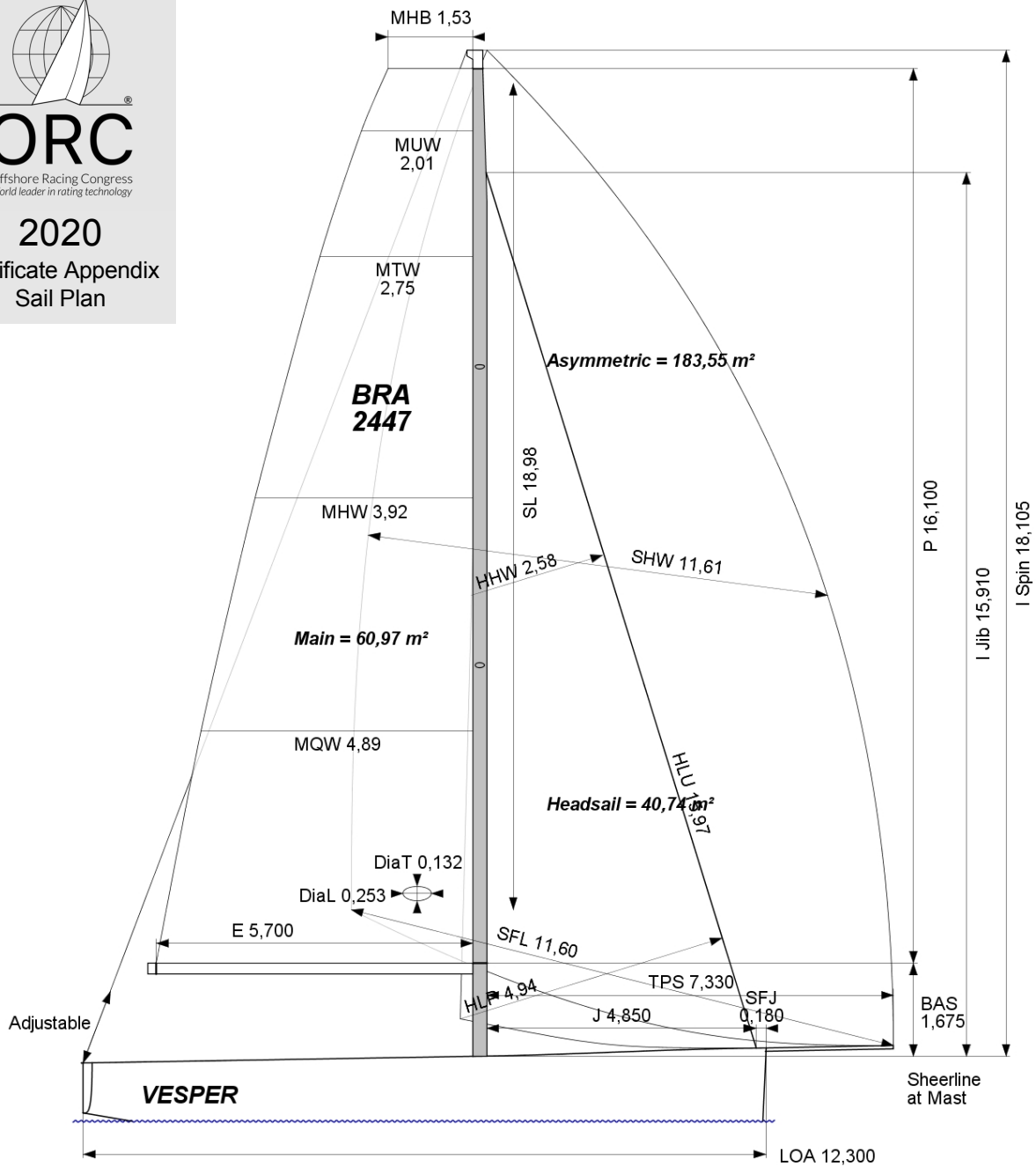
MEASUREMENT INVENTORY							
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn Description
1	Tank	DISEL		50.0			25.0 DISEL
Id	Item	Weight	Distance	VCG Description			
3	Battery						



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Sail Plan



SAILS INVENTORY

MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
M5	1.53	2.01	2.75	3.92	4.89	60.82		25/05/2018	NORTH	Kevlar	Class Rules					
HEADSAILS (3)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
G1-6	0.08	0.71	1.35	2.58	3.80	4.94	15.97	102%	40.74	Y	No		25/05/2018	N.SAIL	Kevlar	USADAS
G2-5	0.08	0.71	1.35	2.58	3.78	4.97	15.97	102%	40.74	Y	No		25/05/2018	N.SAIL	Kevlar	USADAS
G3	0.07	0.69	1.16	2.36	3.62	4.98	14.61	103%	35.54	Y	No		17/03/2016	N.SAIL	Kevlar	USADAS
SYMMETRIC SPINNAKERS (0)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
ASYMMETRIC SPINNAKERS (2)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
A2.2	20.57	17.38	18.98	11.61	11.60	183.56	asym		06/02/2018	NORTH	Nylon	USADA/VER				
A4.2	20.89	17.36	19.13	11.38	11.44	181.56	asym		06/07/2019	NORTH	Nylon	USADA/VER				