

BOAT Name REBEL Sail Nr ITA-1040	GPH 572.4	HULL Length Overall 12.220m Maximum Beam 3.858m Displacement 7,769kg Draft 2.260m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.009% Fwd Accommodation Yes Hull Construction Solid Carbon Rudder No Crew Arm Extension
GENERAL Class FIRST 40' Designer FARR Builder BENETEAU Series 10/2008 Age 03/2009 Age Allowance 0.357% Offset File I1040C.off - 02/05/2019 20:13:46 Measurement by - 20/03/2019		IMSL 11.232m VCGD 0.019m Sink 24.06kg/mm RL 9.983m VCGM 0.004m WS 31.23m² LSM0 11.017m Displacement/Length ratio 5.8100



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	558.0			623.3		
Time on Time	1.0754			1.0829		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	648.3	509.0	457.7	837.2	625.5	547.9
Time on Time	1.0412	1.3260	1.4747	0.8063	1.0791	1.2319

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	953.2	788.9	702.0	668.3	653.9	647.3	633.3
52°	625.7	527.7	483.8	468.6	462.6	459.7	452.8
60°	591.9	506.2	471.1	456.6	450.5	447.2	441.6
75°	566.0	491.9	462.1	445.7	434.4	427.7	421.4
90°	570.0	485.9	457.9	442.1	426.6	412.7	394.1
110°	568.5	478.9	445.8	424.8	411.4	399.7	380.8
120°	583.1	486.5	450.0	425.7	402.2	384.5	361.8
135°	651.1	527.7	469.2	442.1	418.4	394.2	346.4
150°	772.2	619.2	524.9	473.2	446.4	424.6	380.7
Run VMG	891.6	715.0	606.1	539.6	494.0	459.9	416.6

Certificate
Number **10401**
ORC Ref **ITA00052994**
Issued On **02/06/2019**
VPP Ver. **2019 1.01**
Valid until **31/12/2019**

Crew Weight
Default **790kg**
Maximum **820kg**
Minimum* **615kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Double H.GPH	581.7	1.0314
Double H.OSN	568.5	1.0555
Non Spin GPH	607.1	0.9883
Non Spin OSN	591.1	1.0150

Selected Courses							
Windward / Leeward	922.4	752.0	654.1	603.9	573.9	553.6	524.9
Circular Random	781.1	633.6	555.7	511.2	484.0	465.8	440.7
Coastal / Long Distance	919.3	706.5	591.4	529.0	494.7	467.4	422.7
Non Spinnaker	844.0	678.0	588.4	536.1	503.8	482.2	453.6

Sails Limitations

Headsails	Spinnakers
6	4

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	42.6°	41.2°	40.3°	39.0°	38.4°	38.1°	38.5°
Beat VMG	3.78	4.56	5.13	5.39	5.51	5.56	5.68
52°	5.75	6.82	7.44	7.68	7.78	7.83	7.95
60°	6.08	7.11	7.64	7.88	7.99	8.05	8.15
75°	6.36	7.32	7.79	8.08	8.29	8.42	8.54
90°	6.32	7.41	7.86	8.14	8.44	8.72	9.13
110°	6.33	7.52	8.08	8.47	8.75	9.01	9.45
120°	6.17	7.40	8.00	8.46	8.95	9.36	9.95
135°	5.53	6.82	7.67	8.14	8.60	9.13	10.39
150°	4.66	5.81	6.86	7.61	8.06	8.48	9.46
Run VMG	4.04	5.03	5.94	6.67	7.29	7.83	8.64
Gybe Angles	143.4°	147.1°	148.4°	156.0°	170.3°	180.0°	180.0°

Class Division Length
CDL = **10.608**

Storm Sails Areas
Heavy Weather Jib **36.76**
Storm Jib (JL=10.73) **13.62**
Storm Trysail **15.40**

Owner

BOAT	
Name REBEL	Sail Nr ITA-1040
File I1040	Data in meters/kilograms

RIG	
Forestay Tension Aft & Forward	Spreaders 2
Inner Stay None Fitted	Runners 0
Carbon Mast Yes	Jumper Struts None
Taper Hollows No	Jib Furler No
Fiber Rigging Yes	Main Furler No
Lenticular Rigging No	Without Backstay No
Articulated Bowsprit No	
P 15.850	E 5.550 MDT1 0.131 MW 0.236
IG 16.392	J 4.550 MDL1 0.239 GO 0.266
ISP 17.893	SFJ 0.030 MDT2 0.085 BD 0.225
BAS 1.617	SPL 4.850 MDL2 0.200 MWT 174.00
FSP 0.072	TPS 5.920 TL 1.630 MCG 5.930

INCLINING TEST AND FREEBOARDS			
Inclining Test Current Inclining			
Flotation date 16/04/2019		SG 1.0260	
FFM 1.370	FF 1.369	SFFP 0.263	
FAM 1.080	FA 1.082	SAFP 11.821	
W1 107.6	PD1 573.2	WD 13.280	
W2 107.6	PD2 578.7	GSA 1.0	
W3 107.6	PD3 583.5	RSA 1.0	
W4 107.6	PD4 579.8	PLM 9000.0	
LCF from stem on CL / on sheer		6.644 / 6.898	
Maximum beam station from stem		7.951	
RM Measured		194.4kg-m	
RM Default		200.4kg-m	
Limit of positive stability / Stab.Index		119.9° / 123.0	
Freeboard at mast at 4.580		1.242	



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MIZZEN RIG AND SAILS	
N/A	

PROPELLER			
Installation Strut	PRD 0.476		
Type Folding 2 blades	PBW 0.122		
Twin Screw No	PIPA 0.0038		
ST1 0.050	ST3 0.180	ST5 0.310	
ST2 0.180	ST4 0.112	EDL 2.212	

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COMMENTS	
ACL	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	



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SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.400	1.37	2.28	3.67	4.71	54.09	55.38	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL				
	17.00	17.00	17.00	9.53	9.20	134.07		SL · (SFL + 4·SHW) / 6	
Asymmetric on centerline	SLU	SLE	SL	SHW	SFL				
	19.20	17.40	18.30	9.53	9.68	145.79		AS · (SFL + 4·SHW) / 6	

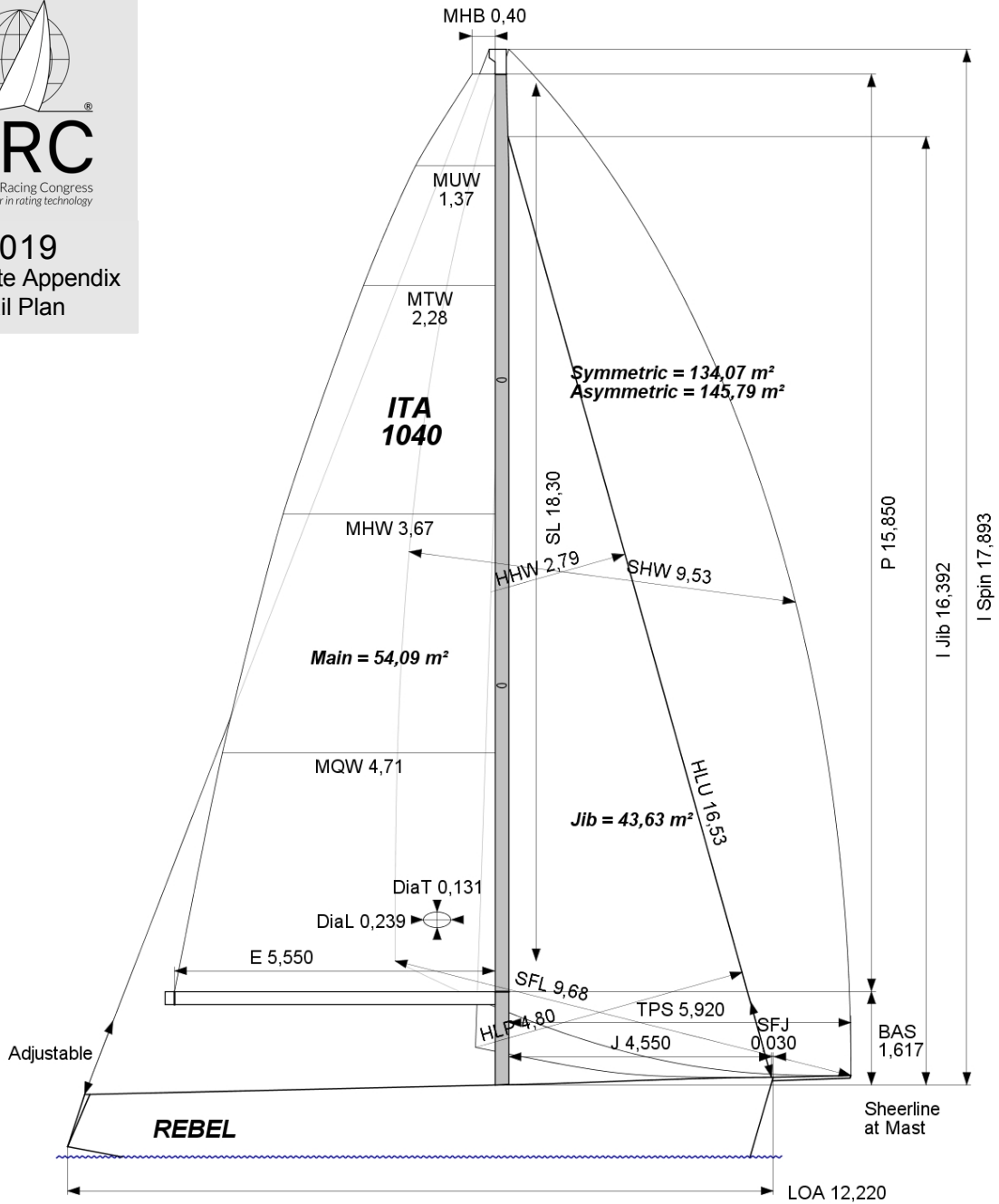
HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
0.11	0.88	1.61	2.79	3.80	4.80	16.53	43.64	N	N	20/03/2019	Unknow	JIB LIGHT
0.11	0.87	1.58	2.76	3.79	4.79	16.52	43.33	N	N	20/03/2019	Unknow	JIB MED-LIGH
0.11	0.85	1.56	2.73	3.74	4.77	16.50	42.84	N	N	20/03/2019	Unknow	JIB MED

MEASUREMENT INVENTORY				
Measurer 174-85				
Date 16/04/2019				
Comment P. S.ROCCO				
Id	Item	Weight	Distance	VCG Description
Id	Item	Maker	Model	
A	Engine	YANMAR	40 HP	
Id	Item	Weight Description		

MEASUREMENT INVENTORY							
Id	Item	Tank Use	Tank Type	Capcty	Dist.	VCG	Condtn Description
A	Tank	FUEL	PVC	130.0	9.70	0.30	15.0 L
B	Tank	WATER	PVC	200.0	5.60	0.00	0.0 2x100 L VUOTI
C	Tank	WATER	STEEL	20.0	9.00	0.32	0.0 VUOTO
Id	Item	Weight	Distance	VCG Description			
A	Battery	0.0	7.30	0.00 110 Ah ENGINE			
B	Battery	0.0	8.90	0.00 2x160 Ah DX			



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Certificate Appendix
Sail Plan



SAILS INVENTORY																
MAINSAIL (1)																
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
G	0.40	1.37	2.28	3.67	4.71	54.09		20/03/2019	NORTH	Unknown	MAIN 2019					
HEADSAILS (3)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
H	0.11	0.88	1.61	2.79	3.80	4.80	16.53	105%	43.64	N	N		20/03/2019	NORTH	Unknown	JIB LIGHT
J	0.11	0.87	1.58	2.76	3.79	4.79	16.52	105%	43.33	N	N		20/03/2019	NORTH	Unknown	JIB MED-LIGH
I	0.11	0.85	1.56	2.73	3.74	4.77	16.50	105%	42.84	N	N		20/03/2019	NORTH	Unknown	JIB MED
SYMMETRIC SPINNAKERS (2)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
I	17.00	17.00	17.00	9.53	9.20	134.08		20/03/2019	NORTH	Unknown	S2					
H	17.20	17.20	17.20	9.38	9.20	133.94		20/03/2019	NORTH	Unknown	S1					
ASYMMETRIC SPINNAKERS (3)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
D	19.20	17.40	18.30	9.53	9.68	145.79	asym		20/03/2019	NORTH	Unknown	A1				
A	18.31	16.53	17.42	9.13	9.86	134.66	asym		24/04/2015	ULMAR	Nylon					
E	17.95	17.45	17.70	5.94	7.89	93.37	asym		20/03/2019	NORTH	Unknown	CODE 0				