

BOAT	GPH	HULL
Name RAMROD Sail Nr USA 106	571.2	Length Overall 11.150m Maximum Beam 3.294m Displacement 4,215kg Draft 2.185m Plan Review IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.068% Hull Construction Cored Carbon Rudder Yes Crew Arm Extension
GENERAL		IMSL 10.390m VCGD -0.013m Sink 18.08kg/mm RL 9.591m VCGM -0.022m WS 23.46m² LSM0 10.091m Displacement/Length ratio 4.1020
Class J 111 Designer Johnstone Builder J Composites Series 01/2010 Age 01/2014 Age Allowance 0.325% Offset File J111.OFF - 15/06/2020 12:14:40 Measurement by - 09/10/2020		



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	558.3			630.4		
Time on Time	1.0746			1.0707		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	642.1	509.9	456.9	834.3	631.2	559.6
Time on Time	1.0513	1.3238	1.4774	0.8091	1.0694	1.2063

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	962.5	786.2	706.2	681.8	672.3	660.0	655.1
52°	630.7	526.4	491.1	481.2	476.8	473.4	466.3
60°	595.7	507.4	478.4	467.6	462.5	459.9	449.6
75°	550.2	487.1	467.4	449.9	439.0	432.9	425.2
90°	530.4	473.0	450.0	434.8	422.5	408.1	394.2
110°	546.9	477.8	445.9	416.1	392.0	375.6	351.3
120°	576.6	484.3	448.2	417.2	393.6	366.4	328.0
135°	645.8	516.3	466.8	433.0	398.4	364.0	311.7
150°	766.4	609.3	515.7	469.5	444.6	415.4	345.6
Run VMG	885.0	703.6	595.5	542.0	513.4	479.6	399.0
Selected Courses							
Windward / Leeward	923.7	744.9	650.8	611.9	592.9	569.8	527.1
Circular Random	776.2	631.0	554.9	511.5	484.3	464.8	434.9
Coastal / Long Distance	919.9	699.6	588.9	532.5	501.6	468.7	413.2
Non Spinnaker	862.6	691.3	598.9	544.9	511.3	488.7	459.3

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	42.8°	41.3°	39.6°	38.4°	38.3°	37.9°	38.4°
Beat VMG	3.74	4.58	5.10	5.28	5.35	5.45	5.50
52°	5.71	6.84	7.33	7.48	7.55	7.60	7.72
60°	6.04	7.09	7.53	7.70	7.78	7.83	8.01
75°	6.54	7.39	7.70	8.00	8.20	8.32	8.47
90°	6.79	7.61	8.00	8.28	8.52	8.82	9.13
110°	6.58	7.53	8.07	8.65	9.18	9.58	10.25
120°	6.24	7.43	8.03	8.63	9.15	9.83	10.98
135°	5.57	6.97	7.71	8.31	9.04	9.89	11.55
150°	4.70	5.91	6.98	7.67	8.10	8.67	10.42
Run VMG	4.07	5.12	6.05	6.64	7.01	7.51	9.02
Gybe Angles	143.0°	146.0°	149.0°	151.5°	148.5°	146.3°	142.5°

Certificate

Number **US6547**
ORC Ref **03410000S83**
Issued On **21/10/2020**
VPP Ver. **2020 1.02**
Valid until **31/12/2020**

Crew Weight

Default **697kg**
Maximum **650kg**
Minimum* **488kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

ToD ToT
Non Spin GPH **618.1 0.9707**
Non Spin OSN **601.8 0.9971**

Sails Limitations

Headsails 6	Spinnakers 4
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Class Division Length

CDL = **9.981**

Storm Sails Areas

Heavy Weather Jib **29.26**
Storm Jib (JL=9.57) **10.84**
Storm Trysail **10.65**

Owner

BOAT										INCLINING TEST AND FREEBOARDS										
Name RAMROD					Sail Nr USA 106					Inclining Test Boom Inclining					LCFD 6.192					
File US6547					Data in meters/kilograms					Flotation date 09/10/2020					SG 1.0100					
RIG										FFM 1.247 FF 1.250 SFFP 0.994 FAM 0.892 FA 0.898 SAFF 10.966										
Forestay Tension Aft Spreaders 2 Inner Stay None Fitted Runners/Checkstays 0 Carbon Mast Yes Jib Furler No Fiber Rigging No Main Furler No Non-Circular Rigging No Articulated Bowsprit No										W1 88.7 PD1 291.9 WD 4.140 W2 88.7 PD2 292.6 GSA 1.0 W3 88.7 PD3 292.7 RSA 1.0 W4 88.7 PD4 294.9 PLM 9000.0										
P 13.767 E 4.418 MDT1 0.110 MW 0.175 IG 14.641 J 4.230 MDL1 0.175 GO 0.198 ISP 15.683 SFJ 0.303 MDT2 0.095 BD 0.170 BAS 1.711 SPL 0.000 MDL2 0.134 MWT 106.00 FSD 0.035 TPS 6.525 TL 1.050 MCG 5.080										LCF from stem on CL / on sheer 6.053 / 6.263 Maximum beam station from stem 7.000 RM Measured 98.7kg-m RM Default 105.5kg-m Limit of positive stability / Stab.Index 118.0° / 117.6 Freeboard at mast at 4.533 1.074										
MIZZEN RIG AND SAILS										PROPELLER										
N/A										Installation Strut PRD 0.408 Type Folding 2 blades PBW 0.125 Twin Screw No PIPA 0.0035										
										ST1 0.040 ST3 0.180 ST5 0.305 ST2 0.180 ST4 0.113 EDL 2.253										
COMMENTS										MOVABLE BALLAST										
Cushions on all but v-berths Folding salon table										N/A										
										CENTERBOARD										
										N/A										
SAILS (Maximum Areas)																				
Mainsail						MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula							
						0.20	1.06	1.88	3.08	3.80	38.13	38.99	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)							
Symmetric																				
Not Available																				
Asymmetric						SLU	SLE	SL	SHW	SFL			AS · (SFL + 4·SHW) / 6							
on centerline						18.10	14.85	16.48	9.64	9.10	130.87									
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								
0.07	0.68	1.29	2.40	3.44	4.43	14.45	33.70		No	12/10/2020	Unknow	2020-J1-3								
0.10	0.67	1.26	2.34	3.38	4.38	14.31	32.81	Y	No	04/06/2020	Unknow	2020 J1								
MEASUREMENT INVENTORY										MEASUREMENT INVENTORY										
Measurer Date 09/10/2020 Comment Internal Ballast total = 0.0										Id Item Tank Use Tank Type Capcty Dist. VCG Condtn Description 3 Tank Fuel PVC 50.0 8.47 0.30 20-0 Aft centerline 2 Tank Water Bladder 100.0 5.50 0.20 0-0 Port settee 1 Tank Waste PVC 50.0 3.43 0.65 0-0 Port side head										
Id Item Weight Distance VCG Description Id Item Maker Model 1 Engine Volvo D1-20 18 hp Id Item Weight Description										Id Item Weight Distance VCG Description 2 Battery 20.0 5.53 0.20 12V engine battery stbd settee 1 Battery 25.0 5.31 0.20 12V house battery stbd settee										



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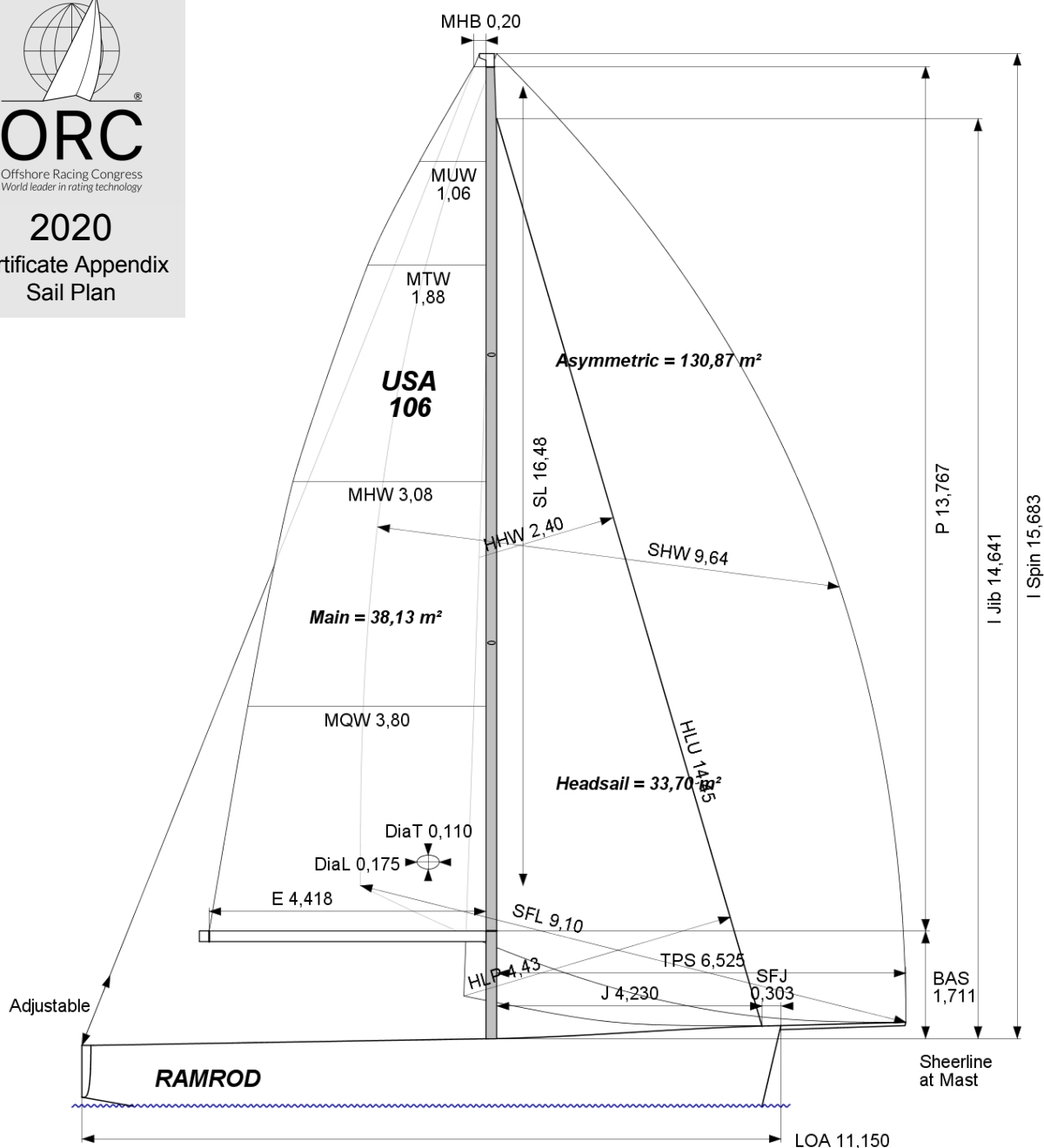
2020
IMS Measurement
Certificate

Certificate
Number **US6547**
ORC Ref **03410000S83**
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VPP Ver. **2020 1.02**
Valid until **31/12/2020**

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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
OUK4010699	0.20	1.06	1.88	3.08	3.80	38.14		04/06/2020	North Sails	Unknown	2020 MAIN

HEADSAILS (2)

ID	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
OUS139	0.07	0.68	1.29	2.40	3.44	4.43	14.45	105%	33.70		No		12/10/2020	NORTH	Unknown	2020-J1-3
OUK400	0.10	0.67	1.26	2.34	3.38	4.38	14.31	104%	32.81	Y	No		04/06/2020	North Sails	Unknown	2020 J1

SYMMETRIC SPINNAKERS (0)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
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ASYMMETRIC SPINNAKERS (2)

ID	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
OUK4011276	18.10	14.85	16.48	9.64	9.10	130.87	asym		04/06/2020	North Sails	Unknown	2020 A2
Code 0	16.04	14.50	15.27	5.92	7.80	80.12	asy76		07/07/2020	North	Unknown	