

BOAT		GPH	HULL			
Name RANGER Sail Nr 60059		525.7	Length Overall 12.411m			
			Maximum Beam 3.956m			
			Displacement 4,967kg			
			Draft 2.591m			
			IMS Reg. Division Performance			
			Dynamic Allowance 0.001%			
			Fwd Accommodation No			
			Hull Construction Cored			
			Carbon Rudder Yes			
			Crew Arm Extension			
			IMSL	11.218m	VCGD	-0.367m Sink 20.97kg/mm
			RL	11.270m	VCGM	-0.364m WS 27.67m ²
			LSM0	10.887m	Displacement/Length ratio 3.8492	



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	512.8			574.2		
Time on Time	1.1700			1.1755		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	584.2	472.4	419.3	749.2	579.6	507.2
Time on Time	1.1554	1.4288	1.6098	0.9010	1.1645	1.3309

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	843.0	698.2	649.0	629.0	615.7	602.2	601.3
52°	553.1	477.2	458.5	450.3	445.6	438.5	432.3
60°	522.0	463.5	445.3	436.1	430.2	424.1	412.8
75°	500.5	453.3	429.2	412.8	403.4	397.5	383.3
90°	502.9	453.0	425.3	400.0	381.7	370.8	358.9
110°	523.5	451.9	423.8	403.1	385.2	365.7	324.1
120°	537.1	455.1	418.0	390.4	372.6	354.0	317.4
135°	592.1	479.9	436.9	400.1	364.6	330.9	289.8
150°	702.3	558.1	481.0	439.4	405.8	373.3	305.3
Run VMG	810.9	644.4	555.4	500.0	463.0	429.8	352.5
Selected Courses							
Windward / Leeward	827.0	671.3	602.2	564.5	539.3	516.0	476.9
Circular Random	708.9	579.3	511.4	472.0	446.3	427.2	397.5
Coastal / Long Distance	825.4	633.5	546.2	493.6	460.9	430.7	380.3
Non Spinnaker	767.6	621.0	542.3	495.8	465.9	444.8	415.8

Certificate

Number **US6416**
ORC Ref **US00000109**
Issued On **29/05/2019**
VPP Ver. **2019 1.01**
Valid until **31/12/2019**

Crew Weight

Default 777kg
Maximum **760kg**
Minimum* **570kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring

	ToD	ToT
Non Spin GPH	558.4	1.0745
Non Spin OSN	546.5	1.0978

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	42.5°	40.7°	38.2°	37.7°	36.9°	36.3°	36.9°
Beat VMG	4.27	5.16	5.55	5.72	5.85	5.98	5.99
52°	6.51	7.54	7.85	7.99	8.08	8.21	8.33
60°	6.90	7.77	8.09	8.26	8.37	8.49	8.72
75°	7.19	7.94	8.39	8.72	8.92	9.06	9.39
90°	7.16	7.95	8.46	9.00	9.43	9.71	10.03
110°	6.88	7.97	8.50	8.93	9.35	9.84	11.11
120°	6.70	7.91	8.61	9.22	9.66	10.17	11.34
135°	6.08	7.50	8.24	9.00	9.87	10.88	12.42
150°	5.13	6.45	7.48	8.19	8.87	9.64	11.79
Run VMG	4.44	5.59	6.48	7.20	7.78	8.38	10.21
Gybe Angles	143.5°	143.4°	150.1°	157.0°	171.3°	155.7°	144.8°

Class Division Length

CDL = 11.245

Storm Sails Areas

Heavy Weather Jib	36.11
Storm Jib (JL=10.63)	13.38
Storm Trysail	17.25

Owner

BOAT									
Name	RANGER			Sail Nr	60059				
File	RangerFarr40OD			Data in	meters/kilograms				
RIG									
Forestay Tension	Aft			Spreaders	2				
Inner Stay	None Fitted			Runners	0				
Carbon Mast	Yes			Jumper Struts	None				
Taper Hollows	No			Jib Furler	No				
Fiber Rigging	No			Main Furler	No				
Lenticular Rigging	No			Without Backstay	No				
Articulated Bowsprit	No								
P	16.700	E	5.900	MDT1	0.121	MW	0.240		
IG	16.318	J	4.705	MDL1	0.240	GO	0.250		
ISP	18.300	SFJ	0.000	MDT2	0.090	BD	0.225		
BAS	1.760	SPL	5.200	MDL2	0.104	MWT	176.70		
FSP	0.068	TPS		TL	1.993	MCG	5.497		

INCLINING TEST AND FREEBOARDS									
Inclining Test Enter RM directly									
Flotation date 14/01/2019					SG				
					RMCE 171.6				
FFM	1.346	FF	1.346	SFFP	0.152				
FAM	1.026	FA	1.026	SAFP	11.954				
LCF from stem on CL / on sheer					6.834 / 7.087				
Maximum beam station from stem					8.199				
RM Measured					171.6kg-m				
RM Default					166.3kg-m				
Limit of positive stability / Stab.Index					131.2° / 127.6				
Freeboard at mast at 4.705					1.204				



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MIZZEN RIG AND SAILS									
N/A									

PROPELLER									
Installation	Strut			PRD	0.407				
Type	Folding 2 blades			PBW	0.100				
Twin Screw	No			PIPA	0.0038				
ST1	0.065	ST3	0.180	ST5	0.268				
ST2	0.180	ST4	0.110	EDL	0.702				

Certificate									
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VPP Ver. 2019 1.01									
Valid until 31/12/2019									

COMMENTS									
MASTHEAD SPINNAKER VALID ONLY IN CONJUNCTION WITH FARR 40 CLASS CERTIFICATE									

MOVABLE BALLAST									
N/A									

CENTERBOARD									
N/A									

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SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.180	1.47	2.59	4.20	5.25	63.14	65.04	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric	SLU	SLE	SL	SHW	SFL	161.97		SL · (SFL + 4·SHW) / 6	
	18.50	18.50	18.50	10.50	10.53				
Asymmetric	Not Available								
Not Available									

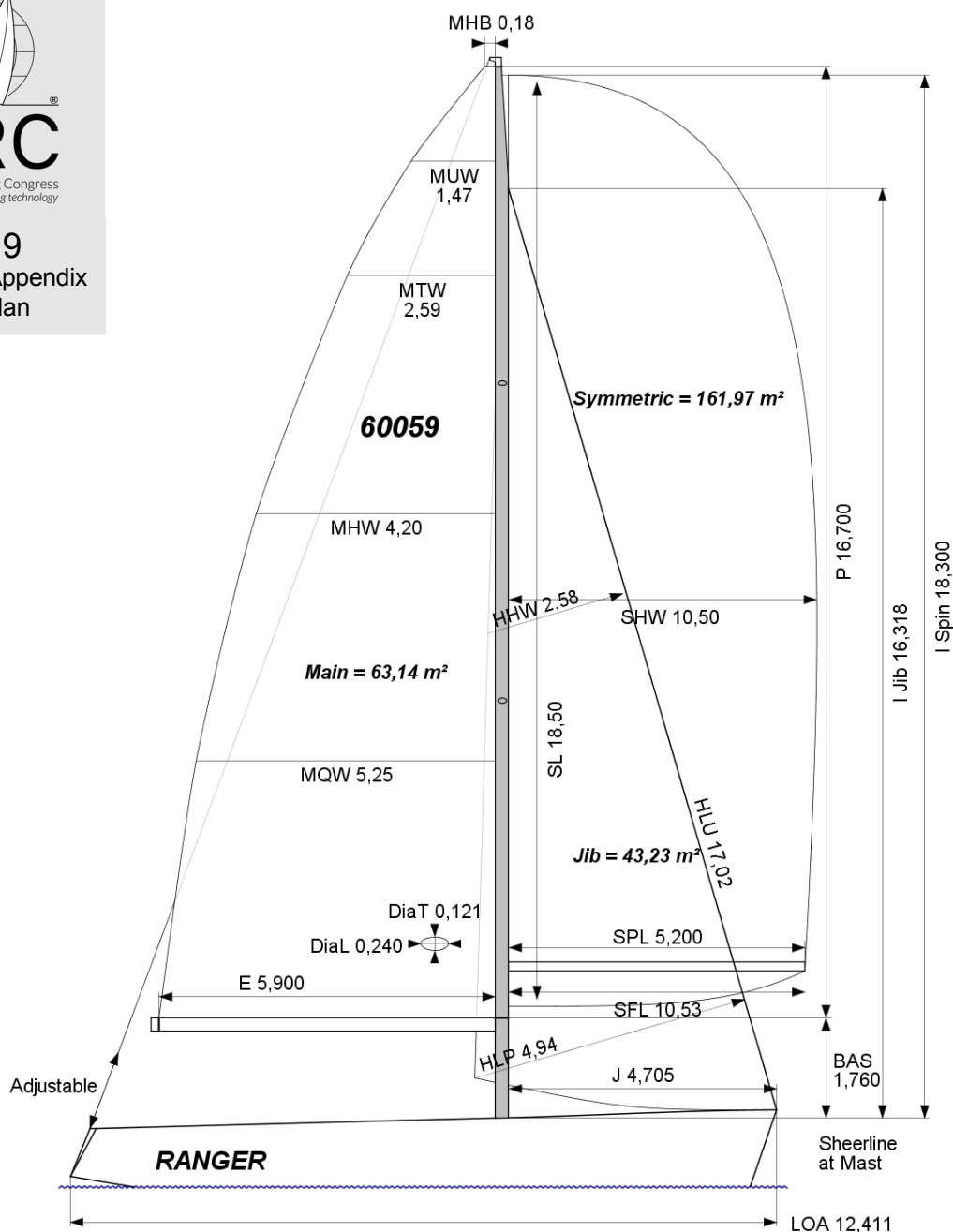
HEADSAILS									
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)									
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly
0.15	0.68	1.34	2.58	3.76	4.94	43.23			
							Meas.Date	Material	Comment
								Unknown	Class Rules



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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
ORC	0.18	1.47	2.59	4.20	5.25	63.14					Class Rules

HEADSAILS (1)

Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.15	0.68	1.34	2.58	3.76	4.94	17.02	105%	43.23							Unknown Class Rules

SYMMETRIC SPINNAKERS (1)

Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment
ORC	18.50	18.50	18.50	10.50	10.53	161.97					Class Rules

ASYMMETRIC SPINNAKERS (0)

Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment
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