

BOAT Name RANGER Sail Nr 60059	GPH 526.5	HULL Length Overall 12.411m Maximum Beam 3.956m Displacement 4,967kg Draft 2.591m Plan Review IMS Reg. Division Performance Dynamic Allowance 0.000% Hull Construction Cored Carbon Rudder Yes Crew Arm Extension
GENERAL Class FARR 40 OD Designer FARR Builder CARROLL Series 05/1997 Age 05/1998 Age Allowance 0.487% Offset File farr40.OD - 10/01/2020 00:00:00 Measurement by - 01/01/2000		IMSL 11.218m VCGD -0.367m Sink 20.97kg/mm RL 11.139m VCGM -0.364m WS 27.67m² LSM0 10.887m Displacement/Length ratio 3.8492



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ORC International
One Design

Rating Office

Offshore
Racing
Congress

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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	513.9			575.9		
Time on Time	1.1676			1.1720		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	585.1	473.2	420.1	750.8	581.3	509.0
Time on Time	1.1536	1.4265	1.6066	0.8990	1.1611	1.3262

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	846.7	701.4	652.5	632.7	619.6	606.3	606.0
52°	554.6	478.0	459.3	451.2	446.7	439.5	433.7
60°	523.0	463.9	445.9	436.8	431.1	424.8	414.0
75°	501.0	453.4	429.3	413.3	404.0	398.2	383.8
90°	503.2	453.1	425.1	399.9	381.9	371.2	359.6
110°	523.7	452.1	423.8	402.9	383.6	365.1	323.8
120°	537.3	455.1	417.8	390.5	370.9	352.5	317.1
135°	592.2	479.8	436.7	399.6	364.0	330.3	289.5
150°	702.3	557.9	480.7	439.1	405.3	372.8	304.3
Run VMG	810.9	644.2	555.1	499.8	462.8	429.3	351.4

Certificate

Number **US6416**
ORC Ref **03410000NVL**
Issued On **04/08/2020**
VPP Ver. **2020 1.00**
Valid until **31/12/2020**

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	564.0	1.0638
Non Spin OSN	551.9	1.0872

Selected Courses							
Windward / Leeward	828.8	672.8	603.8	566.2	541.2	517.8	478.7
Circular Random	710.1	580.3	512.3	472.8	447.1	428.0	398.5
Coastal / Long Distance	827.0	634.7	547.3	494.7	461.6	431.3	380.9
Non Spinnaker	777.6	628.0	547.6	500.0	469.5	448.1	418.5

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	42.8°	40.9°	38.6°	37.9°	37.1°	36.8°	37.3°
Beat VMG	4.25	5.13	5.52	5.69	5.81	5.94	5.94
52°	6.49	7.53	7.84	7.98	8.06	8.19	8.30
60°	6.88	7.76	8.07	8.24	8.35	8.47	8.70
75°	7.19	7.94	8.38	8.71	8.91	9.04	9.38
90°	7.15	7.95	8.47	9.00	9.43	9.70	10.01
110°	6.87	7.96	8.50	8.94	9.38	9.86	11.12
120°	6.70	7.91	8.62	9.22	9.71	10.21	11.35
135°	6.08	7.50	8.24	9.01	9.89	10.90	12.43
150°	5.13	6.45	7.49	8.20	8.88	9.66	11.83
Run VMG	4.44	5.59	6.49	7.20	7.78	8.39	10.25
Gybe Angles	143.5°	143.5°	150.0°	157.0°	171.0°	155.0°	144.8°

Class Division Length

CDL = **11.172**

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 US6416	Data in meters/kilograms

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	

RIG	
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	
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
FSD 0.034	TPS TL 1.993 MCG 5.497



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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	
Number US6416	
ORC Ref 03410000NVL	
Issued On 04/08/2020	
VPP Ver. 2020 1.00	
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COMMENTS	
MASTHEAD SPINNAKER VALID ONLY IN CONJUNCTION WITH FARR 40 CLASS CERTIFICATE	

MOVABLE BALLAST	
N/A	

CENTERBOARD	
N/A	



SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.18	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				
	18.50	18.50	18.50	10.50	10.53	161.97		SL · (SFL + 4·SHW) / 6	
Asymmetric	Not Available								

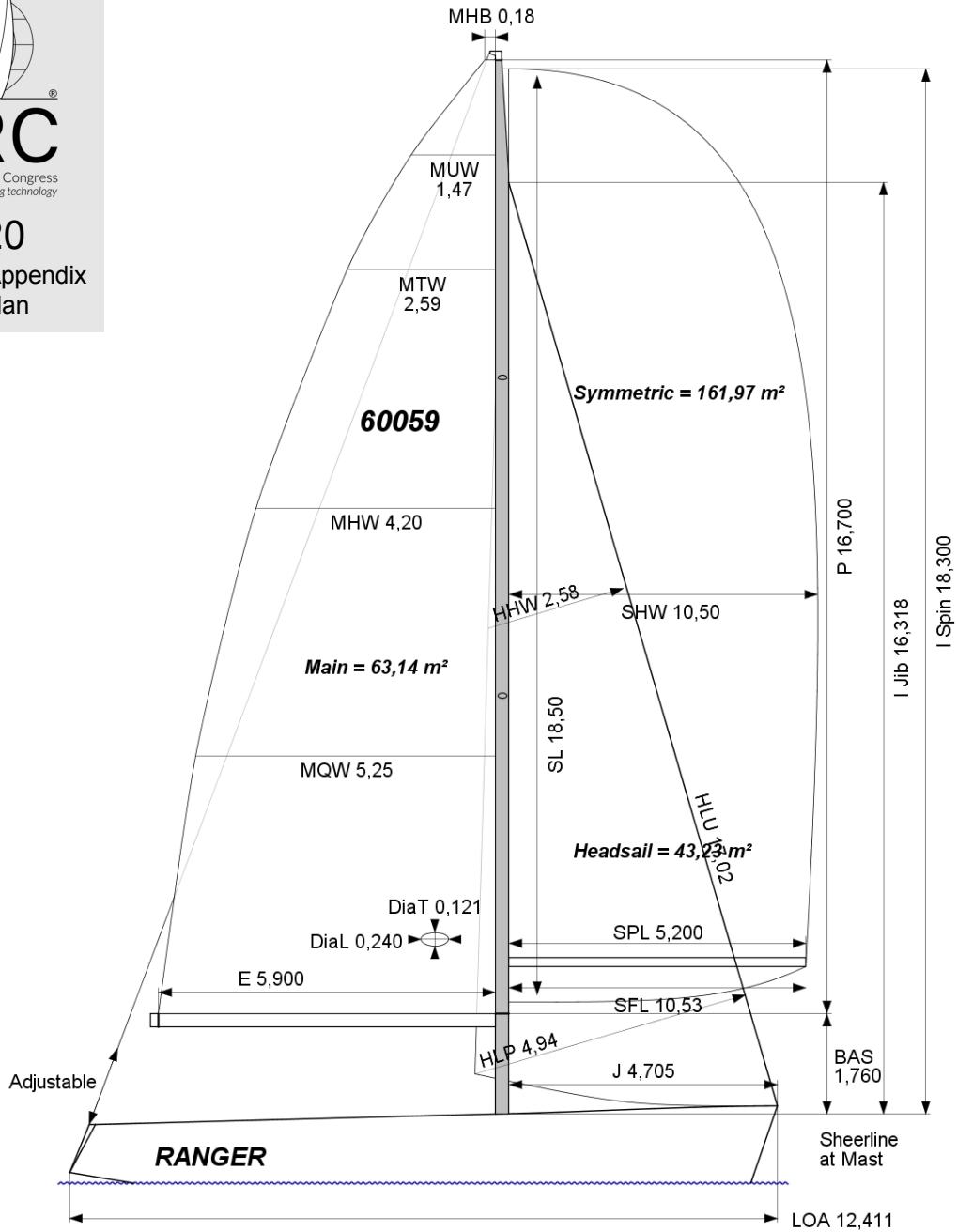
HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HNB)												
HNB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Flying	Meas.Date	Material	Comment
0.15	0.68	1.34	2.58	3.76	4.94	43.23		No			Unknow	Class Rules



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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	Flying	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.15	0.68	1.34	2.58	3.76	4.94		105%	43.23		No					Unknow 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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