

BOAT Name SONRISA Sail Nr USA 1416	GPH 555.3	HULL Length Overall 13.305m Maximum Beam 4.054m Displacement 9,698kg Draft 2.352m IMS Reg. Division Cruiser/Racer Dynamic Allowance 0.072% Fwd Accommodation Yes Hull Construction Cored Carbon Rudder No Crew Arm Extension
GENERAL Class XP44 Designer X-YACHTS Builder X-YACHTS Series 05/2011 Age 06/2016 Age Allowance 0.195% Offset File xp44sd.off - 28/07/2011 11:45:18 Measurement by Dobbs Davis - 19/04/2017		IMSL 12.386m VCGD -0.099m Sink 27.59kg/mm RL 10.423m VCGM -0.088m WS 37.24m² LSMO 12.197m Displacement/Length ratio 5.3447



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SCORING OPTIONS	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
	Low	Medium	High	Low	Medium	High
Time On Distance	541.0			610.8		
Time On Time	1.1090			1.1051		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	637.0	491.3	438.8	831.4	612.3	535.3
Time on Time	1.0597	1.3738	1.5383	0.8119	1.1024	1.2610

TIME ALLOWANCES	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	966.2	797.7	700.0	654.0	632.2	620.1	603.5
52°	625.1	522.1	467.1	447.7	439.6	435.4	428.3
60°	584.9	491.9	450.3	433.7	426.3	422.0	416.0
75°	551.4	470.6	438.7	421.0	408.1	400.1	392.5
90°	551.5	462.0	437.5	419.3	402.8	386.5	365.4
110°	548.0	456.1	422.8	407.6	395.2	383.2	359.5
120°	562.2	463.8	427.4	402.7	382.9	369.3	343.9
135°	632.8	505.4	446.7	420.3	396.9	371.7	320.1
150°	752.1	600.3	504.3	451.1	429.3	411.6	369.6
Run VMG	868.5	693.1	582.3	520.5	493.3	463.0	417.9

Selected Courses	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Windward / Leeward	917.4	745.4	641.2	587.3	562.7	541.6	510.7
Circular Random	765.0	617.3	538.5	493.3	465.6	446.8	420.4
Ocean for PCS	940.7	726.3	605.7	532.2	484.4	450.8	402.4
Non Spinnaker	833.4	665.9	574.2	519.6	485.2	462.2	432.6

Velocity Prediction in Knots for True Wind Speeds	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat Angles	44.0°	42.7°	42.3°	40.8°	39.6°	38.9°	39.0°
Beat VMG	3.73	4.51	5.14	5.50	5.69	5.81	5.97
52°	5.76	6.90	7.71	8.04	8.19	8.27	8.41
60°	6.15	7.32	7.99	8.30	8.44	8.53	8.65
75°	6.53	7.65	8.21	8.55	8.82	9.00	9.17
90°	6.53	7.79	8.23	8.59	8.94	9.31	9.85
110°	6.57	7.89	8.51	8.83	9.11	9.39	10.01
120°	6.40	7.76	8.42	8.94	9.40	9.75	10.47
135°	5.69	7.12	8.06	8.57	9.07	9.68	11.24
150°	4.79	6.00	7.14	7.98	8.39	8.75	9.74
Run VMG	4.15	5.19	6.18	6.92	7.30	7.77	8.62
Gybe Angles	143.0°	146.2°	147.1°	150.9°	152.2°	175.3°	177.6°

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Number **US6166**
ORC Ref **USA00000940**
Issued On **20/04/2017**
VPP Ver. **2017 1.00**
Valid until **28/02/2018**

Crew Weight

Declared **914kg**
Default* **914kg**
Non Manual Pwr **No**

Special Scoring

ToD ToT
Non Spin GPH **592.8 1.0121**
Non Spin OSN **578.1 1.0378**

Sails Limitations

Headsails	Spinnakers
6	4

Class Division Length

CDL = 11.406

Storm Sails Areas


Heavy Weather Jib **44.93**
Storm Jib (JL=11.86) **16.64**
Storm Trysail **18.64**

Owner

BOAT	
Name SONRISA	Sail Nr USA 1416
File US6166	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS		
Inclining Test Current Inclining		
Flotation date 19/04/2017	SG	1.0150
FFM 1.469	FF 1.480	SFFP 0.744
FAM 1.213	FA 1.216	SAFP 13.259
W1 101.0	PD1 445.0	WD 14.530
W2 101.0	PD2 448.0	GSA 1.0
W3 101.0	PD3 449.0	RSA 1.0
W4 101.0	PD4 447.0	PLM 9000.0
LCF from stem on CL / on sheer		7.405 / 7.664
Maximum beam station from stem		9.119
RM Measured		258.4kg·m
RM Default		266.9kg·m
Limit of positive stability / Stab.Index		125.8° / 131.2
Freeboard at mast at 5.255		1.328

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 17.885	E 5.955	MDT1 0.132	MW 0.260	
IG 18.189	J 4.970	MDL1 0.260	GO 0.275	
ISP 19.852	SFJ 0.285	MDT2 0.118	BD 0.301	
BAS 1.772	SPL 0.000	MDL2 0.191	MWT	
FSP 0.074	TPS 6.340	TL 1.600	MCG	




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IMS Measurement Certificate

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MIZZEN RIG AND SAILS	
N/A	

PROPELLER		
Installation Strut	PRD	0.460
Type Folding 2 blades	PBW	0.130
Twin Screw No	PIPA	0.0040
ST1 0.050	ST3 0.180	ST5 0.320
ST2 0.180	ST4 0.112	EDL 2.650

COMMENTS	

MOVEABLE BALLAST	
N/A	

CENTERBOARD	
N/A	

SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	0.150	1.37	2.34	3.85	4.96	63.78	65.04	P/8 · (E + 2·MQW + 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric									
Not Available									
Asymmetric	SLU	SLE	SL	SHW	SFL	Area	AS · (SFL + 4·SHW) / 6		
	22.04	18.90	20.47	11.55	11.83	197.98			

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
0.55	0.77	1.47	2.75	4.03	5.30	18.17	50.02					

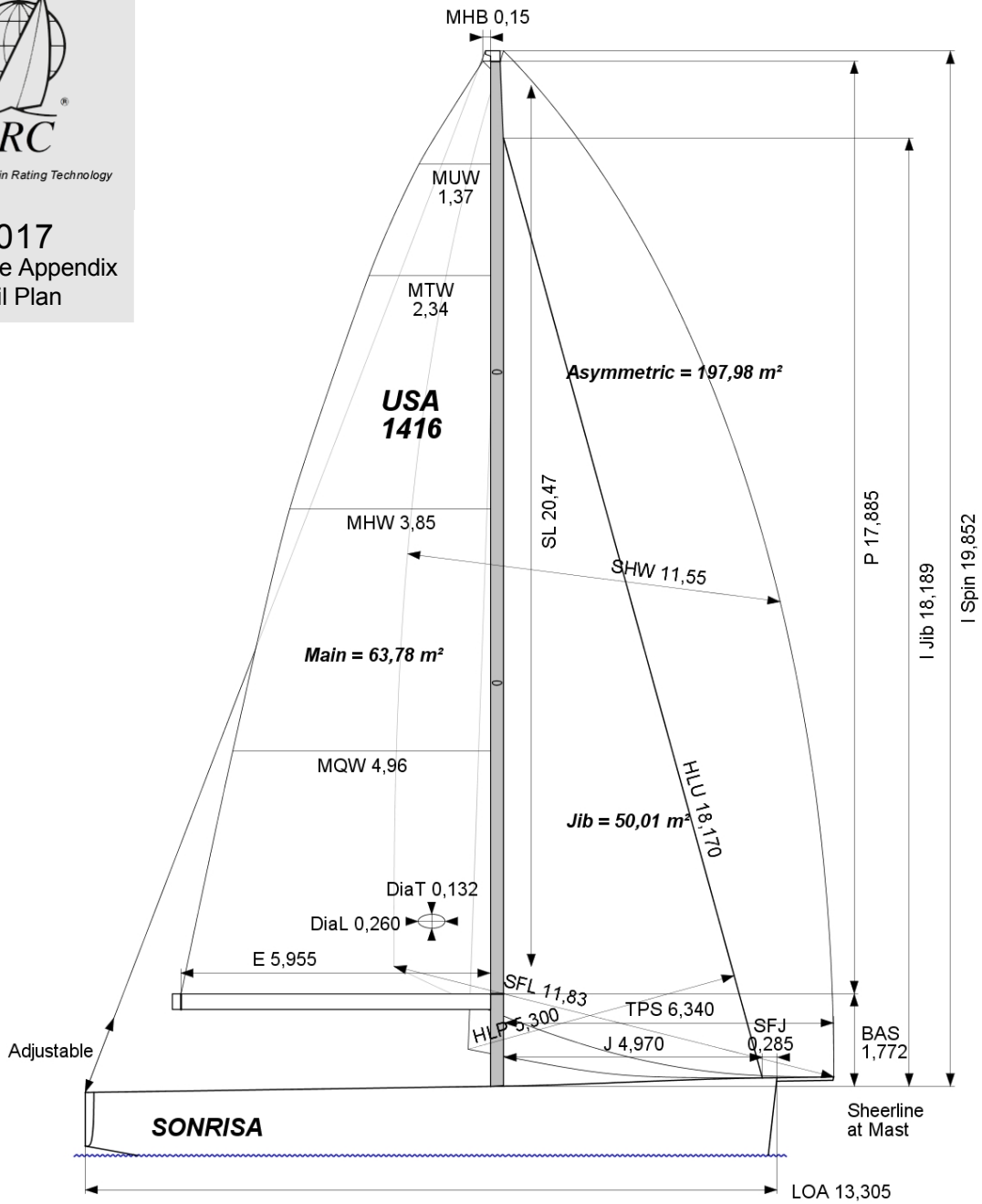
MEASUREMENT INVENTORY				
Measurer Dobbs Davis				
Date 19/04/2017				
Comment				
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>
<i>Id</i>	<i>Item</i>	<i>Maker</i>	<i>Model</i>	
1	Engine	Volvo	4JH57 57 HP	
<i>Id</i>	<i>Item</i>	<i>Weight Description</i>		

MEASUREMENT INVENTORY								
<i>Id</i>	<i>Item</i>	<i>Tank Use</i>	<i>Tank Type</i>	<i>Capcty</i>	<i>Dist.</i>	<i>VCG</i>	<i>Condtn</i>	<i>Description</i>
4	Tank	Waste	PVC	50.0	4.50	0.00	0-0	
3	Tank	Water	PVC	200.0	6.30	-0.20	0-0	
2	Tank	Fuel	Aluminum	200.0	6.30	-0.20	100-0	
1	Tank	Waste	PVC	50.0	8.20	0.00	0-0	Holding tank
<i>Id</i>	<i>Item</i>	<i>Weight</i>	<i>Distance</i>	<i>VCG Description</i>				
3	Battery	20.0	2.30	-0.10 12V 110 Ah windlass battery				
2	Battery	80.0	2.50	-0.10 2 12V house batteries				
1	Battery	20.0	9.80	-0.20 12V AGM 70 engine battery				
4	Misc	40.0	7.30	-0.10 Refrigerator/freezer				
3	Misc	40.0	5.10	-0.10 AC system				
2	Misc	50.0	2.10	-0.30 Bow thruster				
1	Misc	20.0	0.50	0.80 Windlass				



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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					
1	0.150	1.37	2.34	3.85	4.96	63.78										
HEADSAILS (1)																
Id	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
1	0.55	0.77	1.47	2.75	4.03	5.30	18.17	107%	50.02							
SYMMETRIC SPINNAKERS (0)																
Id	SLU	SLE	SL	SHW	SFL	Area	Measurer	Meas.Date	Manufacture	Material	Comment					
ASYMMETRIC SPINNAKERS (1)																
Id	SLU	SLE	SL	SHW	SFL	Area	Kind	Measurer	Meas.Date	Manufacture	Material	Comment				
1	22.04	18.90	20.47	11.55	11.83	197.98	asym									