

BOAT Name RIVAL Sail Nr USA 84002	GPH 480.0	HULL Length Overall 12.175m Maximum Beam 3.801m Displacement 4,040kg Draft 2.981m IMS Reg. Division Performance Dynamic Allowance 0.000% Fwd Accommodation No Hull Construction Light, Aramid Carbon Rudder Yes Crew Arm Extension IMSL 12.001m VCGD -0.914m Sink 21.32kg/mm RL 12.972m VCGM -0.922m WS 27.15m² LSM0 11.653m Displacement/Length ratio 2.5531
GENERAL Class Carkeek 40 Designer Carkeek Builder McConaghy Series 03/2012 Age 03/2012 Age Allowance 0.195% Offset File US42269.OFF - 03/06/2013 15:39:10 Measurement by - 25/04/2018		



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SCORING OPTIONS						
	COASTAL / LONG DISTANCE			WINDWARD / LEEWARD		
Time on Distance	470.8			534.0		
Time on Time	1.2744			1.2640		
Triple Number	Low	Medium	High	Low	Medium	High
Time on Distance	538.0	432.9	370.9	695.3	543.2	460.5
Time on Time	1.2547	1.5592	1.8198	0.9708	1.2426	1.4657

TIME ALLOWANCES							
Wind Velocity	6 kt	8 kt	10 kt	12 kt	14 kt	16 kt	20 kt
Beat VMG	755.6	648.7	605.5	586.3	572.2	560.4	556.8
52°	492.9	448.5	430.1	419.4	412.0	400.7	389.9
60°	466.9	432.5	413.0	399.1	390.2	381.6	365.6
75°	447.9	409.4	384.8	368.8	356.7	347.9	328.2
90°	445.1	401.4	365.8	345.7	330.6	318.0	301.6
110°	470.4	423.3	382.9	350.4	317.4	292.3	263.5
120°	500.1	427.6	379.5	348.6	316.5	283.9	249.1
135°	556.8	452.3	406.4	359.3	316.0	283.7	241.8
150°	666.0	526.3	453.7	410.4	371.4	328.1	253.5
Run VMG	769.1	607.7	525.9	476.7	428.8	378.9	292.8

Certificate
Number **US6287**
ORC Ref **USA00000542**
Issued On **07/05/2018**
VPP Ver. **2018 1.00**
Valid until **31/12/2018**

Crew Weight
Default 856kg
Maximum **856kg**
Minimum* **642kg**
**when applied by the NoR and SI*
Non Manual Pwr **No**

Special Scoring
ToD ToT
Non Spin GPH **521.8 1.1499**
Non Spin OSN **510.8 1.1747**

Selected Courses							
Windward / Leeward	762.4	628.2	565.7	531.5	500.5	469.6	424.8
Circular Random	649.2	531.3	467.8	428.6	401.0	379.6	347.1
Coastal / Long Distance	763.0	592.0	508.6	455.7	417.4	380.0	324.3
Non Spinnaker	722.9	583.3	507.0	460.4	428.9	405.6	371.4

Sails Limitations
Headsails **7** Spinnakers **5**

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°	39.9°	37.8°	36.6°	35.7°	35.0°	35.4°
Beat VMG	4.76	5.55	5.95	6.14	6.29	6.42	6.47
52°	7.30	8.03	8.37	8.58	8.74	8.99	9.23
60°	7.71	8.32	8.72	9.02	9.22	9.43	9.85
75°	8.04	8.79	9.36	9.76	10.09	10.35	10.97
90°	8.09	8.97	9.84	10.41	10.89	11.32	11.94
110°	7.65	8.50	9.40	10.27	11.34	12.32	13.66
120°	7.20	8.42	9.49	10.33	11.37	12.68	14.45
135°	6.47	7.96	8.86	10.02	11.39	12.69	14.89
150°	5.41	6.84	7.93	8.77	9.69	10.97	14.20
Run VMG	4.68	5.92	6.85	7.55	8.39	9.50	12.30
Gybe Angles	141.9°	144.5°	151.4°	151.3°	146.0°	143.6°	143.3°

Class Division Length
CDL = **12.488**

Storm Sails Areas
Heavy Weather Jib **36.13**
Storm Jib (JL=10.64) **13.38**
Storm Trysail **16.47**

Owner

BOAT		
Name	RIVAL	Sail Nr USA 84002
File	RIVAL Carkeek 40	Data in meters/kilograms

INCLINING TEST AND FREEBOARDS					
Inclining Test Boom Inclining			LCFD		
Flotation date 25/04/2018			SG 1.0100		
FFM	1.327	FF	1.331	SFFP	0.366
FAM	0.930	FA	0.932	SAFP	12.200
W1	142.4	PD1	276.0	WD	4.360
W2	142.4	PD2	275.0	GSA	1.0
W3	142.4	PD3	275.0	RSA	1.0
W4	142.4	PD4	271.0	PLM	9000.0
LCF from stem on CL / on sheer				6.741 / 7.050	
Maximum beam station from stem				8.845	
RM Measured				178.3kg-m	
RM Default				157.7kg-m	
Limit of positive stability / Stab.Index				138.3° / 134.5	
Freeboard at mast at 5.290				1.136	

RIG					
Forestay Tension	Forward	Spreaders	2		
Inner Stay	None Fitted	Runners	1		
Carbon Mast	Yes	Jumper Struts	None		
Taper Hollows	No	Jib Furler	No		
Fiber Rigging	Yes	Main Furler	No		
Lenticular Rigging	No	Without Backstay	Yes		
Articulated Bowsprit	No				
P	16.800	E	5.600	MDT1	0.125
IG	16.234	J	4.900	MDL1	0.247
ISP	18.745	SFJ	0.390	MDT2	0.091
BAS	1.834	SPL	0.000	MDL2	0.111
FSP	0.076	TPS	7.475	MWT	132.00
		TL	2.400	MCG	6.444



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MIZZEN RIG AND SAILS	
N/A	

PROPELLER	
Type No Propeller	

Certificate	
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VPP Ver.	2018 1.00
Valid until	31/12/2018

COMMENTS	

MOVABLE BALLAST	
N/A	



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CENTERBOARD	
N/A	

SAILS (Maximum Areas)									
Mainsail	MHB	MUW	MTW	MHW	MQW	Area	Area (r)	Formula	
	1.550	2.14	2.96	4.11	4.91	65.09	66.99	P/8 · (E + 2·MQW+ 2·MHW + 1.5·MTW + MUW + 0.5·MHB)	
Symmetric Not Available									
Asymmetric on centerline	SLU	SLE	SL	SHW	SFL	Area	Formula		
	20.86	17.80	19.33	11.18	11.16	180.03	AS · (SFL + 4·SHW) / 6		

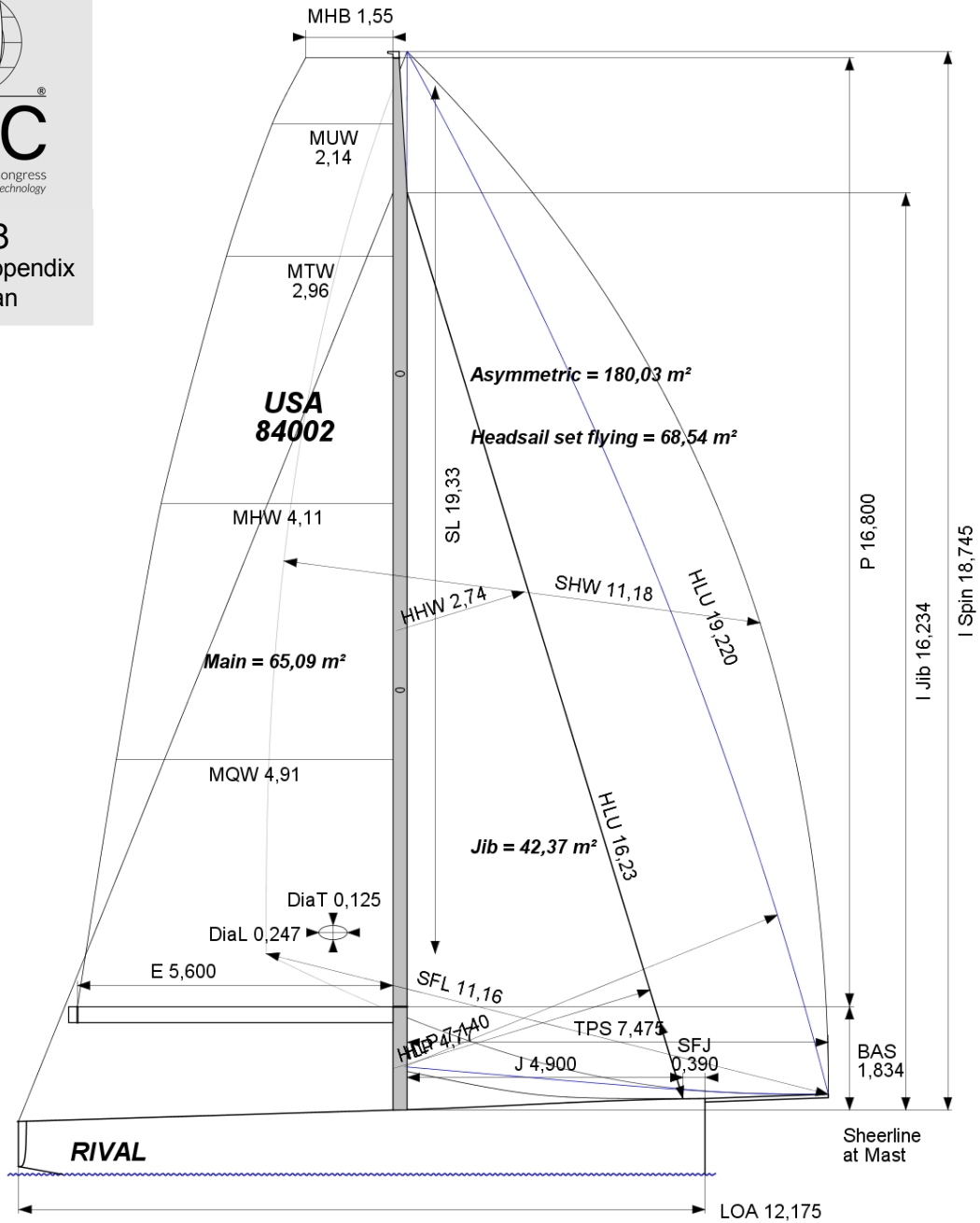
HEADSAILS												
Area = 0.1125·HLU · (1.445·HLP + 2·HQW + 2·HHW + 1.5·HTW + HUW + 0.5·HHB)												
HHB	HUW	HTW	HHW	HQW	HLP	HLU	Area	Btn	Fly	Meas.Date	Material	Comment
	0.90	1.77	3.53	5.35	7.14	19.22	68.55		Y	05/03/2018	Unknow	
	0.13	0.84	1.50	2.74	3.84	4.77	16.23	42.37	Y	05/03/2018	Carbon	



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Sail Plan



SAILS INVENTORY

MAINSAIL (1)																	
Id	MHB	MUW	MTW	MHW	MQW	Area	Measurer	Meas.Date	Manufacture	Material	Comment						
1	1.55	2.14	2.96	4.11	4.91	65.09		05/03/2018	North	Carbon							
HEADSAILS (2)																	
Id	M/H	HHB	HUW	HTW	HHW	HQW	HLP	HLU	Ovrlp	Area	Btn	Fly	Measurer	Meas.Date	Manufacture	Material	Comment
J1		0.13	0.84	1.50	2.74	3.84	4.77	16.23	97%	42.37	Y			05/03/2018	North	Carbon	Unknow
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					
A2	20.86	17.80	19.33	11.18	11.16	180.03	asym		05/03/2018	North	Nylon						