

## Shadow J/29 FR OB 32159

Class: J/29 FR OB Configuration: Sail Number: 32159 Year Built: 1983 Builder: J Boats Owner(s): Buck, Chip					
Certificate #: EZ11807 Valid Year: 2023 Type: New Cert Issue Date: 2023-08-27 Exp. Date: 2023-12-31 Offsets_file: US17305.OFF Cert Group: ORR-Ez SOCAL Comment:					
Rig Type: Sloop Forestay: Fractional Keel Type: Fixed Prop Type: None					
LOA: 29.49 ft LWL: 25.00 ft Rated Length: 25.93 ft Beam Max: 11.12 ft Draft: 5.81 ft Disp Empty: 6255 lbs Disp Sailing: 7410 lbs Crew: 1265 lbs Water Ballast: lbs Wetted Area: 198.8 ft <sup>2</sup> LPS: 101.0 ° RM20: 450.0 ft-lbs Stab Index: 92 °					
Spinnaker: Both Symmetrical & Asymmetrical flown with spin pole Code Zero: Yes Genoa/Jib Leech: No Roach - Leech is straight Large Roach Headsail: No Jib Furler: No Main Roller Furling: No					
<b>Rig Dimensions</b> IG: 35.00 ft ISP: 35.00 ft J: 11.50 ft P: 38.80 ft E: 13.00 ft SPL: 12.50 ft		<b>Mainsail Meas.</b> HB: 0.50 ft MGT: 2.87 ft MGU: 5.12 ft MGM: 8.45 ft MGL: 11.31 ft Area: 313.4 ft <sup>2</sup>	<b>Jib/Genoa Meas.</b> LP: 17.25 ft LPG %: 150.0 % J Luff: 35.93 ft J Leech: 33.25 ft Area: 309.9 ft <sup>2</sup>	<b>Asymmetric Spin. Meas.</b> ASLU: 38.30 ft ASLE: 33.14 ft AMG: 22.50 ft ASF: 22.50 ft Area: 669.7 ft <sup>2</sup>	<b>Symmetric Spin. Meas.</b> SL: 35.30 ft SMW: 22.50 ft SF: 22.50 ft Area: 661.9 ft <sup>2</sup>

### Shadow J/29 FR OB 32159

#### Table of Time Allowances (sec/mile)\* (at True Wind Angles)

True Wind Speed	4 kts	6 kts	8 kts	10 kts	12 kts	16 kts	20 kts	24 kts
Opt Beat Angle	45.3	44.2	42.8	39.7	37.6	35.7	35.2	35.7
Beat VMG	1,497.8	1,082.3	886.0	799.2	759.4	723.0	710.6	709.2
52°	939.73	698.93	592.75	556.01	539.67	523.05	515.39	511.66
60°	850.00	649.77	571.08	537.39	522.44	506.46	495.68	488.60
75°	793.11	613.32	547.59	514.11	496.39	473.38	459.15	449.11
90°	765.32	592.47	529.75	494.32	474.40	446.22	427.44	413.21
110°	767.54	597.58	538.58	503.79	475.37	422.57	388.57	365.75
120°	804.88	622.92	556.77	521.04	492.77	440.53	379.24	346.11
135°	1,071.8	758.47	613.32	559.93	525.29	472.27	421.99	359.36
150°	1,312.7	926.6	738.4	618.96	563.27	500.08	451.71	401.82
165°	1,464.1	1,033.5	823.5	688.4	602.67	523.27	473.48	428.37
Run VMG	1,515.7	1,069.9	852.6	712.7	623.6	536.9	485.5	440.8
Opt Run Angle	134.2	137.0	140.8	153.3	166.9	173.7	173.5	172.5

\* Sec/mile rating assume gybing downwind when target angles are deeper than best VMG angles.

#### Performance Metrics

SA/D Dnwind:	41.390
SA/D Average:	33.82
SA/D Upwind:	26.240
D/Length:	189.7
Ave Perf Screen:	17.800
DnWind Perf Screen:	21.8

#### Standard Ratings

	TOT (Spin)				TOD (Spin)			
	V.Light	Light	Medium	Heavy	V.Light	Light	Medium	Heavy
RANDOM LEG	0.388	0.611	0.809	0.952	1,232.2	783.2	591.1	502.4
W50/L50	0.381	0.610	0.826	0.967	1,539.3	961.2	709.6	606.0
W60/L40	0.389	0.620	0.828	0.952	1,537.3	965.4	722.7	628.9
MOSTLY WW	0.423	0.657	0.833	0.910	1,425.4	917.8	722.9	662.2
MOSTLY LW	0.386	0.597	0.799	1.006	1,224.9	791.7	591.3	469.4

#### Benchmark Ratings

	TOT (Spin)	TOD (Spin)
GPH	0.807	654.2
IR#	0.820	651.5

#### ORR-Ez PHRF

TOD (Spin)
115.2

ORR-Ez PHRF are based on the Farr 40 MH as Scratch Boat.

#### Standard PCS Ratings

	TOD (Spin)							
	4	6	8	10	12	16	20	24
RANDOM LEG	1,233.1	887.9	723.7	636.1	585.8	532.0	501.2	478.2
W50/L50	1,539.1	1,096.1	883.5	767.7	701.1	636.6	603.8	580.5
W60/L40	1,537.1	1,098.1	887.9	776.8	714.7	655.4	626.5	607.6
MOSTLY WW	1,425.1	1,032.1	847.1	760.1	717.4	676.7	659.8	652.7
MOSTLY LW	1,225.1	892.4	737.6	644.7	584.9	517.0	465.5	429.8

#### ORR-Ez PHRF Time Allowance 4 Winds

	TOD (Spin)			
	V.Light	Light	Medium	Heavy
RANDOM LEG	241.8	149.9	109.2	98.8
W50/L50	332.4	192.8	122.9	119.6
W60/L40	321.2	190.8	126.6	123.4
MOSTLY WW	258.3	167.1	123.2	120.8
MOSTLY LW	280.4	171.8	113.5	95.3

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#### Table of Time Allowances (sec/mile)\* (at True Wind Angles)

True Wind Speed	4 kts	6 kts	8 kts	10 kts	12 kts	16 kts	20 kts	24 kts
Opt Beat Angle	45.3	44.2	42.8	39.7	37.6	35.7	35.2	35.7
Beat VMG	1,497.8	1,082.3	886.0	799.2	759.4	723.0	710.6	709.2
52°	939.73	698.93	592.75	556.01	539.67	523.05	515.39	511.66
60°	850.00	649.77	571.08	537.39	522.44	506.46	498.33	493.80
75°	788.30	613.32	552.23	518.75	500.09	482.20	471.85	464.35
90°	781.25	609.43	550.75	517.43	492.30	462.97	448.88	438.03
110°	862.65	660.07	580.86	544.14	516.68	472.11	431.59	412.00
120°	1,000.19	735.46	614.92	567.75	536.24	488.84	446.46	405.90
135°	1,327.04	925.28	727.33	621.78	571.10	510.78	465.95	422.23
150°	1,630.95	1,095.09	827.24	688.20	603.50	527.28	479.11	436.05
165°	1,704.14	1,154.51	880.13	722.91	622.89	532.71	480.15	434.60
Run VMG	1,733.8	1,173.4	893.7	733.0	630.9	538.7	486.0	440.8
Opt Run Angle	171.9	172.0	172.1	172.2	172.4	173.6	173.5	172.5

\* Sec/mile rating assume gybing downwind when target angles are deeper than best VMG angles.

#### Performance Metrics

SA/D:	26.24
D/Length:	189.7
Perf Screen:	13.8

#### Standard Ratings

	TOT (Non-Spin)				TOD (Non-Spin)			
	V.Light	Light	Medium	Heavy	V.Light	Light	Medium	Heavy
RANDOM LEG	0.365	0.581	0.782	0.918	1,312.2	822.9	612.0	521.0
W50/L50	0.361	0.593	0.822	0.967	1,624.1	988.4	712.9	606.1
W60/L40	0.373	0.606	0.825	0.951	1,604.7	987.3	725.4	629.0
MOSTLY WW	0.417	0.651	0.831	0.907	1,444.7	925.4	725.4	664.4
MOSTLY LW	0.338	0.555	0.772	0.957	1,396.6	851.4	611.7	493.6

#### Benchmark Ratings

	TOT (Non-Spin)	TOD (Non-Spin)
GPH	0.773	682.6
IR#	0.809	661.6

#### ORR-Ez PHRF

TOD (Non-Spin)
125.3

ORR-Ez PHRF are based on the Farr 40 MH as Scratch Boat.

#### Standard PCS Ratings

	TOD (Non-Spin)							
	4	6	8	10	12	16	20	24
RANDOM LEG	1,318.2	941.0	759.4	662.6	606.6	549.4	519.7	499.4
W50/L50	1,636.1	1,146.1	905.7	777.9	705.3	637.4	604.1	580.5
W60/L40	1,614.1	1,138.1	905.7	785.0	718.0	656.1	626.8	607.6
MOSTLY WW	1,447.1	1,044.1	853.3	764.4	719.9	678.5	662.0	655.2
MOSTLY LW	1,412.1	989.1	781.4	673.5	605.9	537.2	492.6	453.7

#### ORR-Ez PHRF Allowance 4 Winds

	TOD (Non-Spin)			
	V.Light	Light	Medium	Heavy
RANDOM LEG	321.8	189.6	130.1	117.4
W50/L50	417.2	220.0	126.2	119.7
W60/L40	388.6	212.7	129.3	123.5
MOSTLY WW	277.6	174.7	125.7	123.0
MOSTLY LW	452.1	231.5	133.9	119.5