FARR YACHT DESIGN



PERFORMANCE PREDICTION

Design #622
Beneteau 35
For
Chantiers Beneteau
Shallow Keel

Farr Yacht Design, Ltd.
Copyright December 11, 2008

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DESCRIPTION OF SYMBOLS IN VPP OUTPUT

The accompanying document contains a large amount information about the predicted performance of your boat. To allow this document to be used as a valuable racing tool we have prepared the following explanation of the important terms it contains.

General Terms:

Vt or TWS	True Wind Speed
Bt or TWA	True Wind Angle
V or Vs	Boat Speed
VMG	Boat Velocity Made Good
HEEL	Heel Angle
REEF	Measure of Reduction in Sail Area
FLAT	Measure of Reduction in Sail Lift
Va, AWS	Apparent Wind Speed
Ba, AWA	Apparent Wind Angle
Lee	Leeway Angle
Sail	Sail Combination Designator (Upwind or Downwind)
Flot	Flotation Designator (Varies Only For Water Ballasted Boats)

VPP Polar Diagram

This is a graphical representation of the boats performance across a range of windspeeds and true wind directions. Optimal upwind and downwind conditions are marked as small rectangles on the boat speed contours for each windspeed.

Best Boatspeeds

The upper portion of this page gives a numerical representation of the polar diagram. Boatspeeds in knots are given for a series of true windspeeds at masthead height, across a range of true wind angles. All boatspeeds and windspeeds are given in knots. The shaded cells lie beyond the upwind and downwind optimum points. The two tables on the lower portion of the page provide a ready reference of useful details about the optimum upwind and downwind sailing conditions as a function of the true windspeeds (Vt's) across the top of the page. In addition to indicating the optimum upwind and downwind boat speeds in knots, they are also expressed in seconds/mile and in seconds/boat length. VMG is also expressed in seconds/mile.

Course Times

This page shows the predicted boat performance over a series of 1.0 nautical mile courses in various windspeeds. Times around the course are expressed as seconds. The courses reflect five different course conditions:- LEEWARD, LINEAR RANDOM (LR), WINDWARD-LEEWARD (WL), WINDWARD and CIRCULAR-RANDOM (CR).

Times for 1 nm (secs)

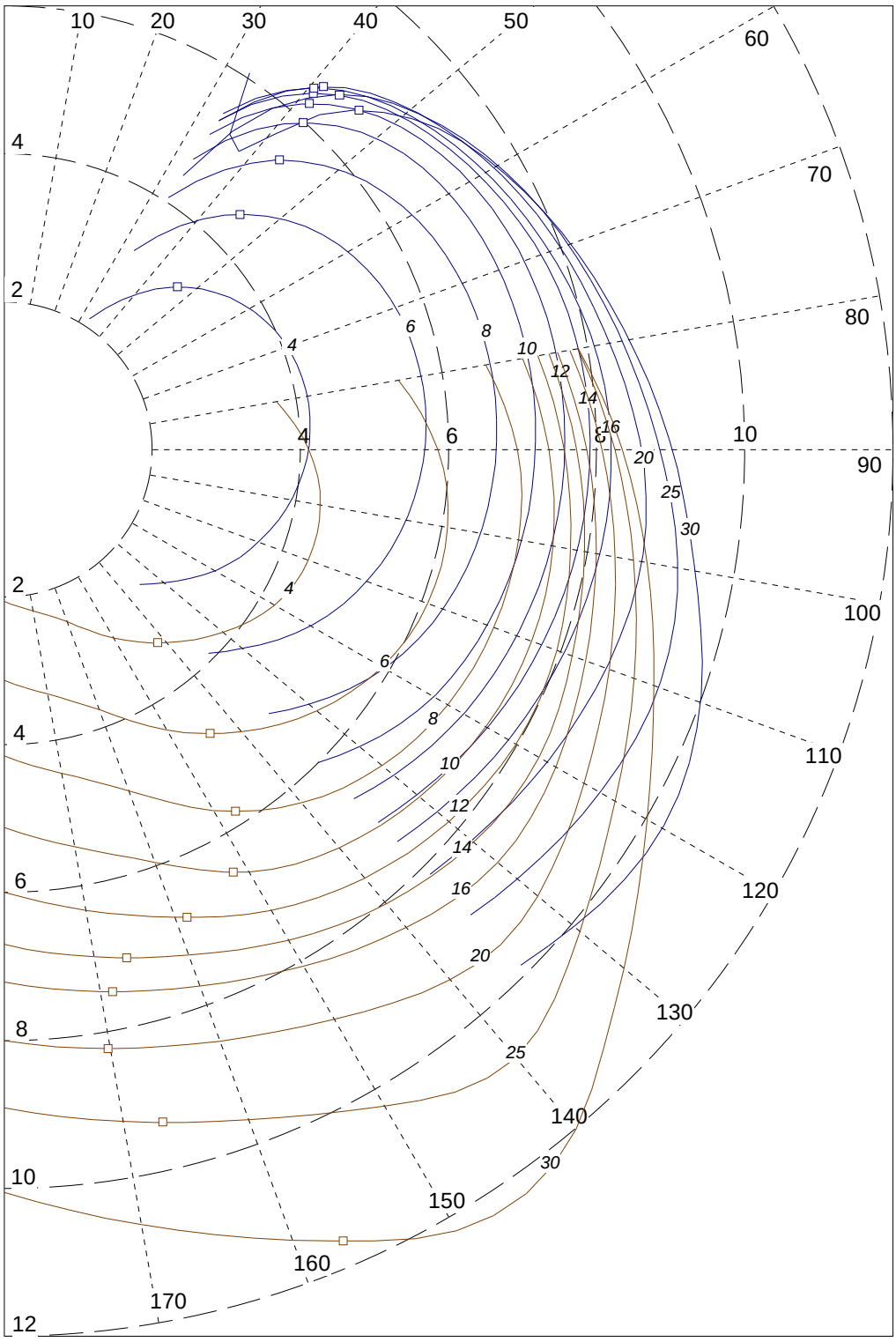
This page is similar to the Best Boatspeeds page in that it represents the boatspeeds for a series of true windspeeds and true wind angles. Boatspeeds are expressed as seconds/nautical mile. Shaded areas again depict the off optimum conditions. Optimum upwind and downwind values, in terms of VMG, are presented underneath the table.

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Best Performance

This page is a detailed representation of the polar diagram showing a list of predicted performance variables for each windspeed over the range of true wind angles. All of those items listed in the "General Terms" section are listed and optimum upwind and downwind settings are included in bold type.

D622 - Beneteau 35 - Shallow Keel - Spinnaker on Pole
For Chantiers Beneteau



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Best Boatspeeds (kt)

	4	6	8	10	12	14	16	20	25	30
33.0	2.11	3.21	4.06	4.68	5.09	5.31	5.42	5.30	4.42	6.07
36.0	2.40	3.60	4.53	5.21	5.59	5.80	5.91	5.85	5.42	5.16
39.0	2.66	3.94	4.92	5.62	5.98	6.18	6.28	6.27	6.01	5.26
42.0	2.89	4.24	5.26	5.95	6.29	6.48	6.57	6.60	6.45	5.98
45.0	3.10	4.50	5.53	6.22	6.55	6.71	6.80	6.85	6.77	6.48
50.0	3.39	4.86	5.89	6.55	6.86	7.00	7.08	7.16	7.15	7.02
60.0	3.82	5.35	6.36	6.93	7.25	7.40	7.50	7.63	7.69	7.66
70.0	4.06	5.62	6.58	7.10	7.47	7.71	7.83	7.99	8.10	8.13
80.0	4.15	5.71	6.66	7.17	7.56	7.87	8.08	8.30	8.47	8.56
90.0	4.11	5.85	6.92	7.35	7.56	7.91	8.19	8.60	8.85	9.02
100.0	4.33	6.08	7.05	7.52	7.76	7.95	8.16	8.74	9.23	9.47
110.0	4.37	6.08	7.03	7.57	7.93	8.16	8.35	8.69	9.40	10.00
120.0	4.21	5.89	6.90	7.50	7.97	8.33	8.59	9.03	9.52	10.25
130.0	3.85	5.50	6.65	7.31	7.83	8.27	8.69	9.40	10.14	10.92
135.0	3.63	5.26	6.47	7.18	7.71	8.16	8.59	9.47	10.50	11.45
140.0	3.41	4.98	6.24	7.03	7.57	8.02	8.44	9.36	10.74	12.00
150.0	2.94	4.38	5.63	6.59	7.19	7.66	8.07	8.90	10.26	12.20
160.0	2.48	3.74	4.91	5.94	6.73	7.27	7.72	8.51	9.65	11.38
170.0	2.22	3.36	4.44	5.45	6.33	6.97	7.44	8.23	9.23	10.64
180.0	2.06	3.12	4.15	5.11	5.98	6.69	7.20	7.99	8.90	10.05
Up.Vs(kts)	3.21	4.50	5.40	5.99	6.23	6.37	6.43	6.53	6.59	6.63
Up.Vs(s/m)	1122.6	800.1	666.8	601.5	577.7	564.8	559.6	551.3	545.9	542.7
Up.Vs(s/L)	6.4	4.6	3.8	3.4	3.3	3.2	3.2	3.2	3.1	3.1
Up.Bt	46.8	45.1	43.5	42.4	41.4	40.9	40.6	41.3	43.4	46.3
Up.Vmg(kts)	2.20	3.18	3.91	4.42	4.68	4.82	4.89	4.91	4.79	4.59
Up.Vmg(s/m)	1638.6	1132.6	919.6	814.8	769.9	747.4	736.5	733.9	750.9	785.0
Up.Heel	2.3	5.0	8.7	13.9	18.7	20.8	22.5	23.0	23.4	23.6
Up.Reef	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.76	0.66
Up.Flat	1.00	1.00	1.00	1.00	0.92	0.79	0.68	0.69	0.75	0.83
Up.Va	6.62	9.71	12.45	14.89	16.99	19.00	20.93	24.74	29.36	33.82
Up.Ba	26.1	25.8	25.9	26.1	26.2	26.8	27.3	29.4	32.5	36.0
Up.Leewy	2.87	3.08	3.49	4.11	4.70	4.88	5.11	5.54	6.19	6.82
Dn.Vs(kts)	3.33	4.74	5.80	6.50	6.79	7.07	7.48	8.22	9.35	11.64
Dn.Vs(s/m)	1080.1	758.8	620.5	554.0	530.0	509.3	481.4	437.7	385.1	309.2
Dn.Vs(s/L)	6.2	4.4	3.6	3.2	3.0	2.9	2.8	2.5	2.2	1.8
Dn.Bt	141.6	144.1	147.5	151.6	158.7	166.5	168.7	170.2	166.8	156.8
Dn.Vmg(kts)	2.61	3.84	4.89	5.72	6.33	6.87	7.33	8.10	9.10	10.71
Dn.Vmg(s/m)	1377.5	937.0	735.9	629.7	568.8	523.8	490.9	444.2	395.5	336.3
Dn.Heel	0.6	1.2	1.5	1.6	1.2	0.9	1.0	1.5	3.6	11.1
Dn.Reef	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dn.Flat	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Dn.Va	2.49	3.52	4.40	5.28	6.18	7.32	8.79	11.98	16.04	19.70
Dn.Ba	85.5	91.9	102.4	115.8	135.2	153.5	159.1	163.4	159.2	144.0
Dn.Leewy	0.60	0.54	0.45	0.36	0.25	0.18	0.17	0.20	0.33	0.52

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Course Times

	Leeward 1.00 nm.	LR 1.00 nm.	WL 1.00 nm.	Windward 1.00 nm.	OLYMPIC 1.00 nm.	CR 1.00 nm.
4.0	1377.5	1070.6	1508.1	1638.6	1421.2	1128.7
6.0	937.0	751.0	1034.8	1132.6	979.5	786.1
8.0	735.9	621.3	827.7	919.6	790.8	644.3
10.0	629.7	560.3	722.2	814.8	698.7	576.9
12.0	568.8	527.4	669.3	769.9	653.6	542.3
14.0	523.8	505.3	635.6	747.4	626.2	520.3
16.0	490.9	489.2	613.7	736.5	608.2	505.2
20.0	444.2	465.1	589.1	733.9	588.0	485.2
25.0	395.5	440.4	573.2	750.9	578.6	469.2
30.0	336.3	415.5	560.6	785.0	579.2	459.0

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Times for 1 nm (secs)

	4	6	8	10	12	14	16	20	25	30
33.0	1707.7	1122.2	886.5	769.1	707.7	677.5	664.6	678.9	814.3	593.1
36.0	1502.2	999.0	795.4	691.4	644.1	620.3	609.5	615.0	664.0	698.2
39.0	1355.3	912.9	731.6	640.9	601.8	582.4	573.4	574.0	599.4	684.6
42.0	1245.7	849.3	685.0	605.4	572.0	555.5	547.8	545.2	558.4	602.5
45.0	1162.1	800.6	651.1	579.2	549.6	536.2	529.7	525.4	531.4	555.6
50.0	1061.2	741.3	611.2	549.4	524.6	514.3	508.6	502.8	503.4	512.8
60.0	942.5	672.3	566.4	519.5	496.4	486.3	480.0	472.1	468.2	469.7
70.0	885.9	640.8	547.0	506.8	482.2	467.1	459.8	450.6	444.5	442.6
80.0	867.0	630.0	540.5	501.8	476.2	457.5	445.3	434.0	425.2	420.3
90.0	875.8	615.3	520.0	490.0	475.9	455.4	439.4	418.6	406.8	399.3
100.0	831.3	592.6	510.8	478.8	463.9	452.8	441.2	412.1	390.1	380.3
110.0	824.3	592.0	512.0	475.3	453.7	441.4	431.3	414.4	383.0	360.1
120.0	855.4	611.6	521.5	480.0	451.5	432.1	419.1	398.5	378.2	351.2
130.0	935.5	654.7	541.2	492.3	460.0	435.5	414.3	383.1	355.0	329.8
135.0	990.9	684.9	556.5	501.1	467.0	441.3	418.9	380.0	342.7	314.5
140.0	1056.3	722.3	577.1	512.2	475.8	448.9	426.5	384.7	335.1	300.0
150.0	1223.6	822.1	638.9	546.0	500.4	469.8	446.1	404.5	351.0	295.0
160.0	1451.8	961.7	732.9	606.2	534.6	494.9	466.1	423.0	373.2	316.4
170.0	1624.1	1072.0	810.0	660.0	569.1	516.7	483.6	437.6	390.1	338.3
180.0	1750.8	1153.9	868.4	703.9	601.5	537.8	499.9	450.4	404.4	358.3
Up	1638.6	1132.6	919.6	814.8	769.9	747.4	736.5	733.9	750.9	785.0
Dn	1377.5	937.0	735.9	629.7	568.8	523.8	490.9	444.2	395.5	336.3

Equivalent ILC Average (using IMS formula): 711.75

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Best Performance

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	4.0	33.0	2.108	1.768	1.7	1.000	1.000	5.88	21.7	5.04	Up	62ow
	4.0	36.0	2.396	1.939	1.9	1.000	1.000	6.10	22.6	4.26	Up	62ow
	4.0	39.0	2.656	2.064	2.0	1.000	1.000	6.29	23.6	3.72	Up	62ow
	4.0	42.0	2.890	2.148	2.2	1.000	1.000	6.44	24.5	3.32	Up	62ow
	4.0	45.0	3.098	2.191	2.3	1.000	1.000	6.57	25.5	3.02	Up	62ow
OptUp >	***4.0***	***46.8***	***3.207***	***2.197***	***2.3***	***1.000***	***1.000***	***6.62***	***26.1***	***2.87***	***Up***	***62ow***
	4.0	50.0	3.393	2.181	2.4	1.000	1.000	6.70	27.2	2.63	Up	62ow
	4.0	60.0	3.820	1.910	2.4	1.000	1.000	6.77	30.7	2.11	Up	62ow
	4.0	70.0	4.063	1.390	2.3	1.000	1.000	6.60	34.7	1.75	Up	62ow
	4.0	80.0	4.152	0.721	2.0	1.000	1.000	6.24	39.1	1.47	Up	62ow
	4.0	90.0	4.110	-0.000	2.8	1.000	1.000	5.73	44.2	1.71	Dn	62ow
	4.0	100.0	4.330	-0.752	2.8	1.000	1.000	5.36	47.3	1.52	Dn	62ow
	4.0	110.0	4.368	-1.494	2.5	1.000	1.000	4.81	51.4	1.34	Dn	62ow
	4.0	120.0	4.208	-2.104	2.0	1.000	1.000	4.11	57.5	1.14	Dn	62ow
	4.0	130.0	3.848	-2.474	1.3	1.000	1.000	3.32	67.4	0.90	Dn	62ow
	4.0	135.0	3.633	-2.569	1.0	1.000	1.000	2.94	74.1	0.77	Dn	62ow
	4.0	140.0	3.408	-2.611	0.7	1.000	1.000	2.59	82.4	0.65	Dn	62ow
OptDn >	***4.0***	***141.6***	***3.333***	***2.613***	***0.6***	***1.000***	***1.000***	***2.49***	***85.5***	***0.60***	***Dn***	***62ow***
	4.0	150.0	2.942	-2.548	0.3	1.000	1.000	2.07	104.6	0.39	Dn	62ow
	4.0	160.0	2.480	-2.330	0.1	1.000	1.000	1.87	133.1	0.20	Dn	62ow
	4.0	170.0	2.217	-2.183	0.0	1.000	1.000	1.86	158.0	0.10	Dn	62ow
	4.0	180.0	2.056	-2.056	0.0	1.000	1.000	1.94	180.0	-0.00	Dn	62ow
	6.0	33.0	3.208	2.690	4.0	1.000	1.000	8.86	21.6	4.92	Up	62ow
	6.0	36.0	3.604	2.915	4.3	1.000	1.000	9.16	22.6	4.21	Up	62ow
	6.0	39.0	3.944	3.065	4.6	1.000	1.000	9.39	23.6	3.73	Up	62ow
	6.0	42.0	4.239	3.150	4.9	1.000	1.000	9.57	24.7	3.37	Up	62ow
	6.0	45.0	4.497	3.180	5.0	1.000	1.000	9.71	25.8	3.08	Up	62ow
OptUp >	***6.0***	***45.1***	***4.499***	***3.179***	***5.0***	***1.000***	***1.000***	***9.71***	***25.8***	***3.08***	***Up***	***62ow***
	6.0	50.0	4.856	3.122	5.2	1.000	1.000	9.84	27.7	2.72	Up	62ow
	6.0	60.0	5.355	2.677	5.2	1.000	1.000	9.83	31.8	2.19	Up	62ow
	6.0	70.0	5.618	1.922	4.7	1.000	1.000	9.51	36.2	1.82	Up	62ow
	6.0	80.0	5.714	0.992	4.1	1.000	1.000	8.97	41.1	1.51	Up	62ow
	6.0	90.0	5.851	-0.000	6.6	1.000	1.000	8.35	45.5	1.85	Dn	62ow
	6.0	100.0	6.075	-1.055	6.5	1.000	1.000	7.73	49.4	1.66	Dn	62ow
	6.0	110.0	6.081	-2.080	5.6	1.000	1.000	6.91	54.3	1.43	Dn	62ow
	6.0	120.0	5.886	-2.943	4.2	1.000	1.000	5.93	60.9	1.18	Dn	62ow
	6.0	130.0	5.499	-3.535	2.8	1.000	1.000	4.88	70.3	0.91	Dn	62ow
	6.0	135.0	5.257	-3.717	2.2	1.000	1.000	4.36	76.6	0.77	Dn	62ow
	6.0	140.0	4.984	-3.818	1.6	1.000	1.000	3.87	84.3	0.64	Dn	62ow
OptDn >	***6.0***	***144.1***	***4.745***	***3.842***	***1.2***	***1.000***	***1.000***	***3.52***	***91.9***	***0.54***	***Dn***	***62ow***
	6.0	150.0	4.379	-3.793	0.7	1.000	1.000	3.11	105.2	0.39	Dn	62ow
	6.0	160.0	3.744	-3.518	0.3	1.000	1.000	2.79	132.7	0.20	Dn	62ow
	6.0	170.0	3.358	-3.307	0.1	1.000	1.000	2.76	157.8	0.10	Dn	62ow
	6.0	180.0	3.120	-3.120	0.0	1.000	1.000	2.88	180.0	-0.00	Dn	62ow

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Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	8.0	33.0	4.061	3.406	7.1	1.000	1.000	11.61	21.9	5.27	Up	62ow
	8.0	36.0	4.526	3.662	7.7	1.000	1.000	11.94	23.0	4.53	Up	62ow
	8.0	39.0	4.921	3.824	8.2	1.000	1.000	12.20	24.1	4.02	Up	62ow
	8.0	42.0	5.256	3.906	8.6	1.000	1.000	12.39	25.3	3.64	Up	62ow
OptUp >	***8.0***	***43.5***	***5.399***	***3.915***	***8.7***	***1.000***	***1.000***	***12.45***	***25.9***	***3.49***	***Up***	***62ow***
	8.0	45.0	5.529	3.909	8.8	1.000	1.000	12.50	26.6	3.35	Up	62ow
	8.0	50.0	5.890	3.786	8.9	1.000	1.000	12.58	28.8	2.97	Up	62ow
	8.0	60.0	6.356	3.178	8.5	1.000	1.000	12.42	33.5	2.41	Up	62ow
	8.0	70.0	6.581	2.251	7.5	1.000	1.000	11.93	38.7	1.99	Up	62ow
	8.0	80.0	6.660	1.157	6.3	1.000	1.000	11.23	44.2	1.65	Up	62ow
	8.0	90.0	6.924	-0.000	13.0	1.000	1.000	10.43	48.4	2.29	Dn	62ow
	8.0	100.0	7.048	-1.224	11.8	1.000	1.000	9.56	53.7	2.02	Dn	62ow
	8.0	110.0	7.032	-2.405	9.4	1.000	1.000	8.57	59.9	1.67	Dn	62ow
	8.0	120.0	6.904	-3.452	6.8	1.000	1.000	7.47	67.1	1.30	Dn	62ow
	8.0	130.0	6.652	-4.276	4.6	1.000	1.000	6.29	76.1	0.96	Dn	62ow
	8.0	135.0	6.469	-4.574	3.6	1.000	1.000	5.70	81.8	0.80	Dn	62ow
	8.0	140.0	6.238	-4.778	2.7	1.000	1.000	5.14	88.8	0.66	Dn	62ow
OptDn >	***8.0***	***147.5***	***5.802***	***4.892***	***1.5***	***1.000***	***1.000***	***4.40***	***102.4***	***0.45***	***Dn***	***62ow***
	8.0	150.0	5.635	-4.880	1.2	1.000	1.000	4.20	107.9	0.39	Dn	62ow
	8.0	160.0	4.912	-4.616	0.0	1.000	1.000	3.78	133.6	0.20	Dn	62ow
	8.0	170.0	4.444	-4.377	0.0	1.000	1.000	3.70	158.0	0.10	Dn	62ow
	8.0	180.0	4.145	-4.145	0.0	1.000	1.000	3.85	180.0	-0.00	Dn	62ow
	10.0	33.0	4.681	3.925	11.4	1.000	1.000	14.12	22.2	5.96	Up	62ow
	10.0	36.0	5.207	4.212	12.5	1.000	1.000	14.48	23.3	5.11	Up	62ow
	10.0	39.0	5.617	4.366	13.3	1.000	1.000	14.72	24.6	4.56	Up	62ow
	10.0	42.0	5.947	4.419	13.8	1.000	1.000	14.87	25.9	4.16	Up	62ow
OptUp >	***10.0***	***42.4***	***5.985***	***4.418***	***13.9***	***1.000***	***1.000***	***14.89***	***26.1***	***4.11***	***Up***	***62ow***
	10.0	45.0	6.215	4.395	14.1	1.000	1.000	14.95	27.3	3.83	Up	62ow
	10.0	50.0	6.553	4.212	14.1	1.000	1.000	14.96	29.8	3.41	Up	62ow
	10.0	60.0	6.930	3.465	12.7	1.000	1.000	14.62	35.3	2.78	Up	62ow
	10.0	70.0	7.104	2.430	10.7	1.000	1.000	14.00	41.3	2.29	Up	62ow
	10.0	80.0	7.174	1.246	8.7	1.000	1.000	13.20	47.5	1.88	Up	62ow
	10.0	90.0	7.347	-0.000	22.0	0.986	1.000	11.83	51.6	3.00	Dn	62ow
	10.0	100.0	7.518	-1.306	19.8	1.000	1.000	10.92	58.0	2.57	Dn	62ow
	10.0	110.0	7.574	-2.591	14.5	1.000	1.000	10.00	65.5	1.99	Dn	62ow
	10.0	120.0	7.500	-3.750	9.9	1.000	1.000	8.89	73.7	1.50	Dn	62ow
	10.0	130.0	7.313	-4.700	6.5	1.000	1.000	7.66	83.4	1.08	Dn	62ow
	10.0	135.0	7.184	-5.080	5.0	1.000	1.000	7.04	89.1	0.89	Dn	62ow
	10.0	140.0	7.028	-5.384	3.8	1.000	1.000	6.44	95.6	0.71	Dn	62ow
	10.0	150.0	6.593	-5.710	1.8	1.000	1.000	5.41	112.5	0.40	Dn	62ow
OptDn >	***10.0***	***151.6***	***6.498***	***5.717***	***1.6***	***1.000***	***1.000***	***5.28***	***115.8***	***0.36***	***Dn***	***62ow***
	10.0	160.0	5.938	-5.580	0.0	1.000	1.000	4.86	135.3	0.21	Dn	62ow
	10.0	170.0	5.454	-5.371	0.0	1.000	1.000	4.72	158.4	0.10	Dn	62ow
	10.0	180.0	5.115	-5.115	0.0	1.000	1.000	4.89	180.0	-0.00	Dn	62ow

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Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	12.0	33.0	5.087	4.266	15.0	1.000	0.890	16.41	22.6	6.18	Up	62ow
	12.0	36.0	5.589	4.522	16.7	1.000	0.901	16.72	23.8	5.46	Up	62ow
	12.0	39.0	5.982	4.649	17.9	1.000	0.910	16.91	25.1	4.98	Up	62ow
OptUp >	***12.0***	***41.4***	***6.231***	***4.676***	***18.7***	***1.000***	***0.919***	***16.99***	***26.2***	***4.70***	***Up***	***62ow***
	12.0	42.0	6.294	4.677	18.9	1.000	0.921	17.00	26.5	4.63	Up	62ow
	12.0	45.0	6.550	4.632	19.7	1.000	0.939	17.03	28.0	4.38	Up	62ow
	12.0	50.0	6.862	4.411	20.7	1.000	0.978	16.92	30.5	4.11	Up	62ow
	12.0	60.0	7.251	3.626	18.7	1.000	1.000	16.51	36.6	3.35	Up	62ow
	12.0	70.0	7.465	2.553	15.0	1.000	1.000	15.89	43.3	2.67	Up	62ow
	12.0	80.0	7.559	1.313	11.6	1.000	1.000	15.07	50.2	2.14	Up	62ow
	12.0	90.0	7.565	-0.000	8.8	1.000	1.000	14.07	57.5	1.71	Up	62ow
	12.0	100.0	7.760	-1.347	22.6	0.937	1.000	12.30	62.5	2.81	Dn	62ow
	12.0	110.0	7.935	-2.714	21.6	1.000	1.000	11.16	69.9	2.43	Dn	62ow
	12.0	120.0	7.973	-3.986	14.2	1.000	1.000	10.27	78.9	1.74	Dn	62ow
	12.0	130.0	7.827	-5.031	8.7	1.000	1.000	9.09	89.3	1.22	Dn	62ow
	12.0	135.0	7.710	-5.451	6.7	1.000	1.000	8.46	95.3	1.00	Dn	62ow
	12.0	140.0	7.566	-5.796	5.0	1.000	1.000	7.85	102.0	0.79	Dn	62ow
	12.0	150.0	7.194	-6.230	2.4	1.000	1.000	6.79	118.1	0.44	Dn	62ow
OptDn >	***12.0***	***158.7***	***6.792***	***6.329***	***1.2***	***1.000***	***1.000***	***6.18***	***135.2***	***0.25***	***Dn***	***62ow***
	12.0	160.0	6.734	-6.327	1.1	1.000	1.000	6.12	137.9	0.24	Dn	62ow
	12.0	170.0	6.326	-6.229	0.0	1.000	1.000	5.87	159.2	0.11	Dn	62ow
	12.0	180.0	5.985	-5.985	0.0	1.000	1.000	6.02	180.0	-0.00	Dn	62ow
	14.0	33.0	5.313	4.456	17.7	1.000	0.769	18.54	23.1	6.37	Up	62ow
	14.0	36.0	5.803	4.695	19.1	1.000	0.772	18.81	24.4	5.59	Up	62ow
	14.0	39.0	6.181	4.804	20.3	1.000	0.781	18.96	25.8	5.11	Up	62ow
OptUp >	***14.0***	***40.9***	***6.373***	***4.817***	***20.8***	***1.000***	***0.787***	***19.00***	***26.8***	***4.88***	***Up***	***62ow***
	14.0	42.0	6.480	4.816	21.1	1.000	0.791	19.01	27.4	4.76	Up	62ow
	14.0	45.0	6.714	4.748	21.8	1.000	0.807	18.99	28.9	4.52	Up	62ow
	14.0	50.0	7.000	4.499	22.6	1.000	0.842	18.81	31.7	4.24	Up	62ow
	14.0	60.0	7.403	3.702	23.5	1.000	0.941	18.20	37.7	3.86	Up	62ow
	14.0	70.0	7.708	2.636	20.8	1.000	1.000	17.53	44.5	3.19	Up	62ow
	14.0	80.0	7.869	1.366	15.7	1.000	1.000	16.80	52.2	2.46	Up	62ow
	14.0	90.0	7.905	-0.000	11.3	1.000	1.000	15.84	60.1	1.92	Up	62ow
	14.0	100.0	7.950	-1.381	22.9	0.862	1.000	13.85	66.5	2.88	Dn	62ow
	14.0	110.0	8.156	-2.789	23.4	0.937	1.000	12.54	74.4	2.57	Dn	62ow
	14.0	120.0	8.331	-4.165	20.2	1.000	1.000	11.46	83.3	2.05	Dn	62ow
	14.0	130.0	8.267	-5.314	11.7	1.000	1.000	10.53	94.0	1.38	Dn	62ow
	14.0	135.0	8.158	-5.768	8.7	1.000	1.000	9.94	100.1	1.12	Dn	62ow
	14.0	140.0	8.020	-6.144	6.4	1.000	1.000	9.34	106.8	0.88	Dn	62ow
	14.0	150.0	7.662	-6.636	3.1	1.000	1.000	8.29	122.6	0.49	Dn	62ow
	14.0	160.0	7.275	-6.836	1.6	1.000	1.000	7.58	140.9	0.28	Dn	62ow
OptDn >	***14.0***	***166.5***	***7.069***	***6.873***	***0.9***	***1.000***	***1.000***	***7.32***	***153.5***	***0.18***	***Dn***	***62ow***
	14.0	170.0	6.968	-6.862	0.0	1.000	1.000	7.24	160.4	0.13	Dn	62ow
	14.0	180.0	6.695	-6.695	0.0	1.000	1.000	7.31	180.0	-0.00	Dn	62ow

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Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	16.0	33.0	5.417	4.543	19.7	1.000	0.666	20.55	23.5	6.66	Up	62ow
	16.0	36.0	5.907	4.779	21.0	1.000	0.667	20.80	25.0	5.81	Up	62ow
	16.0	39.0	6.278	4.879	21.9	1.000	0.672	20.91	26.5	5.28	Up	62ow
OptUp >	***16.0***	***40.6***	***6.433***	***4.888***	***22.5***	***1.000***	***0.680***	***20.93***	***27.3***	***5.11***	***Up***	***62ow***
	16.0	42.0	6.572	4.884	22.8	1.000	0.685	20.93	28.1	4.94	Up	62ow
	16.0	45.0	6.796	4.805	23.1	0.980	0.731	20.89	29.9	4.69	Up	62ow
	16.0	50.0	7.078	4.550	23.2	0.946	0.828	20.70	33.0	4.41	Up	62ow
	16.0	60.0	7.500	3.750	23.2	0.912	1.000	20.06	39.4	3.99	Up	62ow
	16.0	70.0	7.830	2.678	23.7	0.965	1.000	19.15	46.0	3.54	Up	62ow
	16.0	80.0	8.085	1.404	20.8	1.000	1.000	18.30	53.6	2.88	Up	62ow
	16.0	90.0	8.192	-0.000	14.6	1.000	1.000	17.52	62.1	2.15	Up	62ow
	16.0	100.0	8.159	-1.417	10.1	1.000	1.000	16.42	70.9	1.64	Up	62ow
	16.0	110.0	8.347	-2.855	23.8	0.871	1.000	14.06	78.2	2.63	Dn	62ow
	16.0	120.0	8.590	-4.295	24.5	0.975	1.000	12.62	87.3	2.30	Dn	62ow
	16.0	130.0	8.690	-5.586	15.7	1.000	1.000	11.90	97.7	1.54	Dn	62ow
	16.0	135.0	8.594	-6.077	11.3	1.000	1.000	11.42	103.8	1.23	Dn	62ow
	16.0	140.0	8.440	-6.466	8.1	1.000	1.000	10.87	110.5	0.96	Dn	62ow
	16.0	150.0	8.070	-6.989	4.0	1.000	1.000	9.86	125.9	0.56	Dn	62ow
	16.0	160.0	7.724	-7.258	2.1	1.000	1.000	9.13	143.2	0.33	Dn	62ow
OptDn >	***16.0***	***168.7***	***7.478***	***7.333***	***1.0***	***1.000***	***1.000***	***8.79***	***159.1***	***0.17***	***Dn***	***62ow***
	16.0	170.0	7.444	-7.331	0.0	1.000	1.000	8.77	161.5	0.15	Dn	62ow
	16.0	180.0	7.201	-7.201	0.0	1.000	1.000	8.80	180.0	-0.00	Dn	62ow
	20.0	33.0	5.303	4.447	21.6	0.976	0.537	24.29	24.6	7.70	Up	62ow
	20.0	36.0	5.854	4.736	22.5	0.939	0.590	24.57	26.2	6.62	Up	62ow
	20.0	39.0	6.271	4.874	22.8	0.907	0.644	24.71	28.0	5.91	Up	62ow
OptUp >	***20.0***	***41.3***	***6.530***	***4.905***	***23.0***	***0.885***	***0.689***	***24.74***	***29.4***	***5.54***	***Up***	***62ow***
	20.0	42.0	6.603	4.907	23.0	0.879	0.702	24.75	29.8	5.44	Up	62ow
	20.0	45.0	6.852	4.845	23.2	0.856	0.763	24.69	31.8	5.15	Up	62ow
	20.0	50.0	7.160	4.602	23.4	0.824	0.871	24.46	35.1	4.81	Up	62ow
	20.0	60.0	7.626	3.813	23.6	0.813	1.000	23.72	42.0	4.26	Up	62ow
	20.0	70.0	7.989	2.732	24.0	0.862	1.000	22.68	49.2	3.75	Up	62ow
	20.0	80.0	8.296	1.441	24.3	0.926	1.000	21.47	56.8	3.31	Up	62ow
	20.0	90.0	8.600	-0.000	23.5	1.000	1.000	20.26	64.9	2.80	Up	62ow
	20.0	100.0	8.736	-1.517	15.8	1.000	1.000	19.67	74.5	1.99	Up	62ow
	20.0	110.0	8.687	-2.971	24.6	0.765	1.000	17.19	83.8	2.75	Dn	62ow
	20.0	120.0	9.034	-4.517	25.5	0.862	1.000	15.66	93.5	2.35	Dn	62ow
	20.0	130.0	9.396	-6.040	26.0	1.000	1.000	14.19	104.1	1.91	Dn	62ow
	20.0	135.0	9.473	-6.698	18.9	1.000	1.000	14.17	109.2	1.42	Dn	62ow
	20.0	140.0	9.359	-7.169	12.7	1.000	1.000	13.89	115.4	1.09	Dn	62ow
	20.0	150.0	8.900	-7.708	6.4	1.000	1.000	13.03	130.3	0.68	Dn	62ow
	20.0	160.0	8.511	-7.998	3.6	1.000	1.000	12.34	146.4	0.43	Dn	62ow
	20.0	170.0	8.228	-8.103	0.0	1.000	1.000	11.98	163.2	0.20	Dn	62ow
OptDn >	***20.0***	***170.2***	***8.225***	***8.104***	***1.5***	***1.000***	***1.000***	***11.98***	***163.4***	***0.20***	***Dn***	***62ow***
	20.0	180.0	7.992	-7.992	0.0	1.000	1.000	12.01	180.0	-0.00	Dn	62ow

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Best Performance (cont)

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	25.0	33.0	4.421	3.708	20.8	0.872	0.523	28.40	26.6	12.01	Up	62ow
	25.0	36.0	5.421	4.386	22.3	0.826	0.596	29.03	27.9	8.59	Up	62ow
	25.0	39.0	6.006	4.668	22.8	0.793	0.659	29.28	29.7	7.21	Up	62ow
	25.0	42.0	6.446	4.791	23.2	0.767	0.723	29.37	31.6	6.41	Up	62ow
OptUp >	***25.0***	***43.4***	***6.594***	***4.795***	***23.4***	***0.756***	***0.754***	***29.36***	***32.5***	***6.19***	***Up***	***62ow***
	25.0	45.0	6.774	4.790	23.5	0.744	0.790	29.34	33.6	5.91	Up	62ow
	25.0	50.0	7.151	4.597	23.6	0.717	0.899	29.11	37.1	5.39	Up	62ow
	25.0	60.0	7.689	3.844	24.1	0.717	1.000	28.25	44.4	4.67	Up	62ow
	25.0	70.0	8.099	2.770	24.5	0.761	1.000	27.09	52.1	4.08	Up	62ow
	25.0	80.0	8.466	1.470	24.9	0.819	1.000	25.75	60.2	3.57	Up	62ow
	25.0	90.0	8.850	-0.000	25.3	0.898	1.000	24.27	68.6	3.08	Up	62ow
	25.0	100.0	9.227	-1.602	25.8	1.000	1.000	22.70	77.6	2.63	Up	62ow
	25.0	110.0	9.400	-3.215	17.4	1.000	1.000	22.44	87.8	1.82	Up	62ow
	25.0	120.0	9.519	-4.759	26.8	0.756	1.000	19.55	98.8	2.42	Dn	62ow
	25.0	130.0	10.140	-6.518	28.5	0.895	1.000	17.84	109.4	1.89	Dn	62ow
	25.0	135.0	10.504	-7.428	29.6	0.990	1.000	16.97	115.0	1.64	Dn	62ow
	25.0	140.0	10.742	-8.229	22.3	1.000	1.000	17.08	119.5	1.16	Dn	62ow
	25.0	150.0	10.256	-8.882	10.7	1.000	1.000	16.75	132.9	0.74	Dn	62ow
	25.0	160.0	9.648	-9.066	5.9	1.000	1.000	16.25	148.4	0.51	Dn	62ow
OptDn >	***25.0***	***166.8***	***9.349***	***9.101***	***3.6***	***1.000***	***1.000***	***16.04***	***159.2***	***0.33***	***Dn***	***62ow***
	25.0	170.0	9.228	-9.088	0.0	1.000	1.000	15.99	164.2	0.25	Dn	62ow
	25.0	180.0	8.902	-8.902	0.0	1.000	1.000	16.10	180.0	-0.00	Dn	62ow
	30.0	33.0	6.070	5.091	35.0	0.953	0.955	33.98	23.2	0.72	Up	62ow
	30.0	36.0	5.156	4.171	32.6	0.798	0.797	32.97	26.8	0.00	Up	62ow
	30.0	39.0	5.259	4.087	22.5	0.712	0.664	33.48	31.4	10.29	Up	62ow
	30.0	42.0	5.976	4.441	23.2	0.685	0.734	33.76	33.1	8.22	Up	62ow
	30.0	45.0	6.479	4.582	23.5	0.663	0.801	33.84	35.1	7.11	Up	62ow
OptUp >	***30.0***	***46.3***	***6.633***	***4.586***	***23.6***	***0.656***	***0.829***	***33.82***	***36.0***	***6.82***	***Up***	***62ow***
	30.0	50.0	7.020	4.513	24.0	0.639	0.909	33.65	38.6	6.20	Up	62ow
	30.0	60.0	7.664	3.832	24.6	0.641	1.000	32.74	46.2	5.20	Up	62ow
	30.0	70.0	8.134	2.782	25.2	0.681	1.000	31.45	54.2	4.50	Up	62ow
	30.0	80.0	8.565	1.487	25.6	0.735	1.000	29.99	62.7	3.90	Up	62ow
	30.0	90.0	9.016	-0.000	26.2	0.807	1.000	28.38	71.5	3.34	Up	62ow
	30.0	100.0	9.465	-1.644	26.8	0.899	1.000	26.70	80.8	2.83	Up	62ow
	30.0	110.0	9.998	-3.419	26.4	0.999	1.000	25.25	90.6	2.25	Up	62ow
	30.0	120.0	10.250	-5.125	18.2	1.000	1.000	25.13	100.9	1.51	Up	62ow
	30.0	130.0	10.917	-7.017	30.2	0.806	1.000	21.55	112.8	1.80	Dn	62ow
	30.0	135.0	11.445	-8.093	31.2	0.892	1.000	20.61	118.3	1.48	Dn	62ow
	30.0	140.0	11.999	-9.192	32.3	0.992	1.000	19.66	124.0	1.21	Dn	62ow
	30.0	150.0	12.202	-10.567	17.7	1.000	1.000	19.85	134.0	0.65	Dn	62ow
OptDn >	***30.0***	***156.8***	***11.645***	***10.706***	***11.1***	***1.000***	***1.000***	***19.70***	***144.0***	***0.52***	***Dn***	***62ow***
	30.0	160.0	11.378	-10.692	8.9	1.000	1.000	19.63	148.9	0.46	Dn	62ow
	30.0	170.0	10.641	-10.480	3.8	1.000	1.000	19.60	164.6	0.25	Dn	62ow
	30.0	180.0	10.047	-10.047	0.0	1.000	1.000	19.95	180.0	-0.00	Dn	62ow

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Best Performance (cont)

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