

# **FARR<sup>®</sup>**

## **PERFORMANCE PREDICTION**



**DESIGN #486  
57' Cruising Yacht  
Standard Keel & Rig VPP for  
Beneteau**

Farr Yacht Design, Ltd.  
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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).

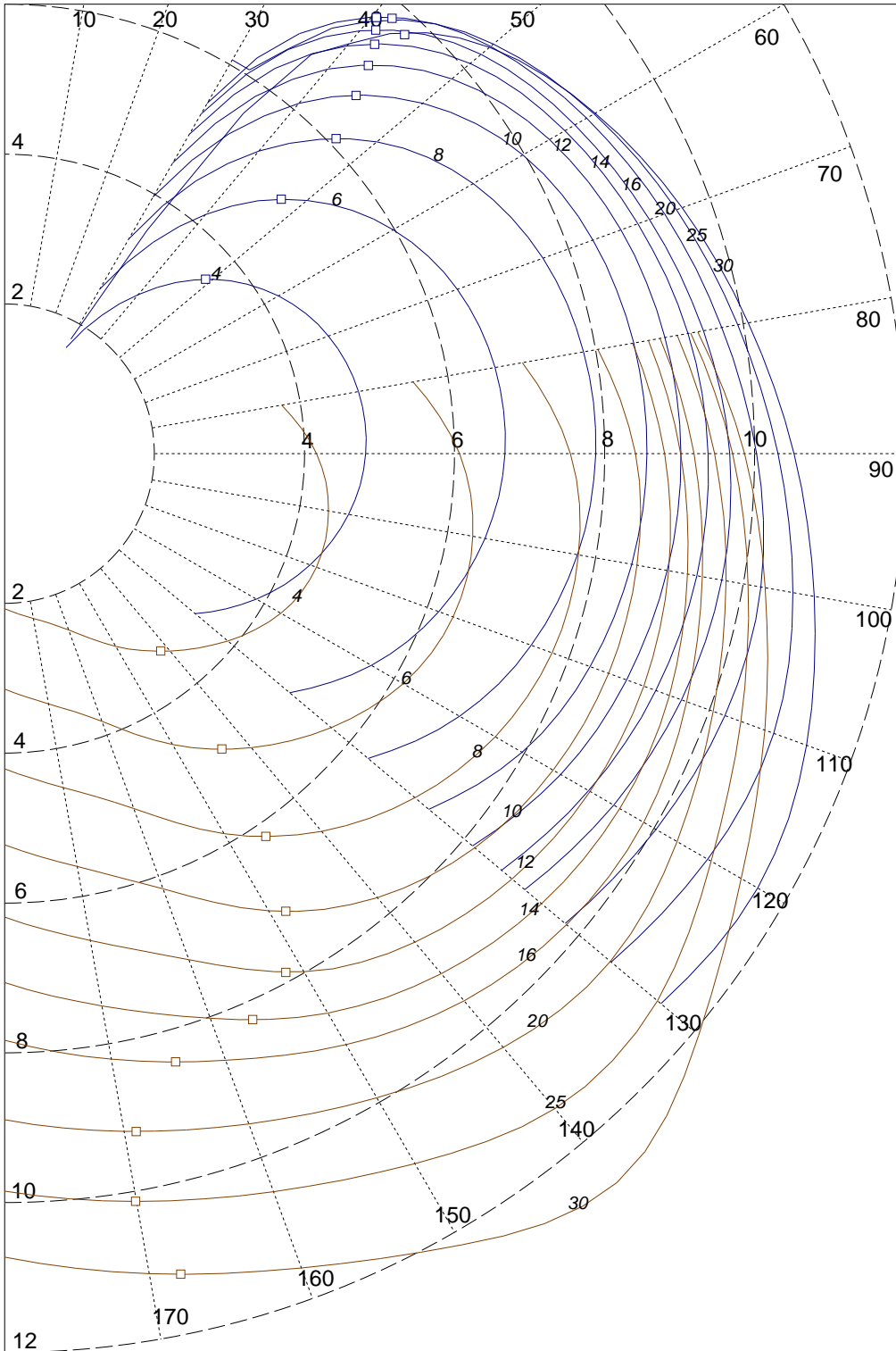
### **Times for 1 nm (secs)**

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.

### **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.

**Design 486 - 57' Cruising Yacht - Standard Keel and Rig  
for Chantiers Beneteau S.A.**



Best Boatspeeds (kt)										
	4	6	8	10	12	14	16	20	25	30
30.0	1.64	2.54	3.32	3.96	4.48	4.93	5.24	5.40	6.07	1.77
33.0	2.03	3.11	4.04	4.77	5.36	5.82	6.14	6.41	6.13	3.93
36.0	2.37	3.60	4.62	5.41	6.02	6.47	6.77	7.02	6.86	6.19
39.0	2.68	4.04	5.12	5.95	6.55	6.97	7.24	7.48	7.39	6.98
42.0	2.97	4.43	5.56	6.40	6.97	7.36	7.62	7.84	7.79	7.52
45.0	3.23	4.78	5.94	6.77	7.32	7.69	7.92	8.12	8.12	7.95
50.0	3.62	5.26	6.48	7.28	7.79	8.10	8.29	8.46	8.51	8.44
60.0	4.22	5.98	7.21	7.98	8.39	8.63	8.78	8.96	9.07	9.09
70.0	4.60	6.42	7.64	8.34	8.74	8.98	9.15	9.36	9.53	9.61
80.0	4.79	6.64	7.84	8.51	8.94	9.25	9.46	9.71	9.92	10.07
90.0	4.81	6.67	7.88	8.56	9.01	9.38	9.66	10.02	10.31	10.52
100.0	4.66	6.50	7.77	8.56	8.99	9.37	9.71	10.24	10.67	10.96
110.0	4.42	6.36	7.76	8.57	9.06	9.43	9.68	10.21	10.91	11.37
120.0	4.25	6.13	7.55	8.44	9.01	9.47	9.83	10.35	10.87	11.59
130.0	3.88	5.68	7.14	8.18	8.83	9.34	9.78	10.54	11.36	12.07
140.0	3.44	5.12	6.58	7.73	8.51	9.06	9.53	10.34	11.41	12.70
150.0	2.97	4.48	5.85	7.04	7.98	8.62	9.10	9.92	10.94	12.19
160.0	2.50	3.80	5.04	6.18	7.19	8.02	8.62	9.52	10.48	11.56
170.0	2.23	3.39	4.52	5.60	6.60	7.48	8.20	9.18	10.13	11.11
180.0	2.07	3.14	4.20	5.22	6.18	7.06	7.83	8.89	9.84	10.72
Up.Vs(ks)	3.55	5.02	6.10	6.70	7.10	7.36	7.51	7.65	7.78	7.73
Up.Vs(s/m)	1013.6	717.6	589.9	537.6	507.2	488.9	479.1	470.7	463.0	465.7
Up.Vs(s/L)	9.2	6.5	5.4	4.9	4.6	4.4	4.3	4.3	4.2	4.2
Up.Bt	49.0	47.4	46.4	44.4	43.1	42.1	41.2	40.4	41.6	43.6
Up.Vmg(ks)	2.33	3.40	4.21	4.78	5.18	5.47	5.65	5.82	5.81	5.59
Up.Vmg(s/m)	1546.6	1059.6	855.8	752.6	694.5	658.7	636.8	618.2	619.4	643.5
Up.Heel	2.9	6.2	10.5	13.8	16.6	18.9	20.7	23.5	24.6	24.9
Up.Reef	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.79
Up.Flat	1.00	1.00	1.00	0.90	0.80	0.71	0.63	0.50	0.49	0.53
Up.Va	6.87	10.09	12.94	15.42	17.70	19.85	21.90	25.78	30.47	34.92
Up.Ba	26.0	25.8	26.1	26.2	26.3	26.6	26.8	27.5	29.7	32.5
Up.Leewy	3.29	3.52	3.91	4.17	4.41	4.61	4.84	5.31	5.82	6.61
Dn.Vs(ks)	3.36	4.89	6.18	7.17	7.87	8.25	8.43	9.21	10.13	11.20
Dn.Vs(s/m)	1072.2	736.1	582.3	502.4	457.3	436.6	426.9	390.7	355.4	321.4
Dn.Vs(s/L)	9.7	6.7	5.3	4.6	4.2	4.0	3.9	3.5	3.2	2.9
Dn.Bt	141.7	143.7	145.7	148.4	151.5	156.3	164.3	169.0	170.1	167.9
Dn.Vmg(ks)	2.63	3.94	5.11	6.11	6.92	7.55	8.12	9.04	9.98	10.95
Dn.Vmg(s/m)	1366.9	913.6	704.8	589.7	520.1	476.7	443.5	398.0	360.8	328.8
Dn.Heel	0.6	1.1	1.7	2.0	2.0	1.7	1.3	1.4	2.1	4.0
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	3.55	4.53	5.41	6.31	7.24	8.21	11.10	15.12	19.19
Dn.Ba	84.9	89.1	95.4	104.5	115.1	129.2	148.2	159.9	163.4	160.9
Dn.Leewy	0.60	0.54	0.49	0.43	0.36	0.28	0.19	0.17	0.20	0.30

Shaded cells lie outside upwind and downwind optimum sailing angles.

Times for 1 nm (secs)

	4	6	8	10	12	14	16	20	25	30
30.0	2197.9	1415.8	1084.5	909.5	803.6	730.9	686.9	666.4	593.0	2035.4
33.0	1776.0	1157.5	891.0	754.4	671.6	618.7	586.3	561.8	586.9	916.1
36.0	1521.4	999.5	778.4	665.5	597.6	556.2	531.8	512.6	524.4	581.8
39.0	1344.2	891.5	703.0	605.5	549.2	516.8	497.3	481.1	487.2	515.9
42.0	1212.6	812.8	648.0	562.7	516.4	488.9	472.7	459.3	462.0	478.6
45.0	1113.0	753.7	606.2	531.7	491.6	468.3	454.6	443.4	443.4	452.8
50.0	993.8	684.1	555.5	494.6	462.3	444.2	434.1	425.5	423.1	426.6
60.0	853.7	601.8	499.1	451.1	429.2	417.4	410.0	402.0	396.8	396.0
70.0	783.2	560.4	471.5	431.4	411.8	400.8	393.6	384.5	377.8	374.6
80.0	751.7	542.4	459.4	422.8	402.8	389.2	380.7	370.9	362.8	357.7
90.0	748.0	539.8	456.9	420.5	399.3	383.9	372.5	359.2	349.2	342.1
100.0	773.2	553.7	463.4	420.6	400.6	384.3	370.9	351.7	337.4	328.6
110.0	813.8	565.8	463.6	420.3	397.2	381.8	372.1	352.5	330.0	316.5
120.0	846.1	586.9	476.8	426.4	399.5	380.2	366.0	347.9	331.0	310.6
130.0	927.0	633.4	504.0	440.0	407.8	385.4	368.2	341.5	317.0	298.1
140.0	1048.0	703.2	547.4	465.7	423.1	397.5	377.9	348.1	315.6	283.5
150.0	1213.3	803.3	614.9	511.1	450.9	417.7	395.4	362.7	329.1	295.3
160.0	1439.5	947.4	714.7	582.5	501.0	449.1	417.9	378.2	343.5	311.3
170.0	1612.5	1062.3	795.9	643.4	545.7	481.1	438.8	392.1	355.3	324.0
180.0	1740.7	1147.0	856.9	690.0	582.5	510.0	459.9	405.0	365.9	335.8
Up	1546.6	1059.6	855.8	752.6	694.5	658.7	636.8	618.2	619.4	643.5
Dn	1366.9	913.6	704.8	589.7	520.1	476.7	443.5	398.0	360.8	328.8

Equivalent ILC Average (using IMS formula): 646.33

Shaded cells lie outside upwind and downwind optimum sailing angles.

**Best Performance**

	TWS	TWA	V	VMG	Heel	Reef	Flat	AWS	AWA	Lee	Sail	Flot
	4.0	30.0	1.638	1.418	1.3	1.000	0.787	5.48	21.4	7.18	Up	48td
	4.0	33.0	2.027	1.700	1.7	1.000	0.860	5.81	22.0	5.86	Up	48td
	4.0	36.0	2.366	1.914	2.0	1.000	0.922	6.08	22.8	5.12	Up	48td
	4.0	39.0	2.678	2.081	2.3	1.000	0.972	6.31	23.5	4.61	Up	48td
	4.0	42.0	2.969	2.206	2.5	1.000	1.000	6.52	24.2	4.16	Up	48td
	4.0	45.0	3.234	2.287	2.7	1.000	1.000	6.69	25.0	3.72	Up	48td
<b>OptUp &gt;</b>	<b>4.0</b>	<b>49.0</b>	<b>3.552</b>	<b>2.328</b>	<b>2.9</b>	<b>1.000</b>	<b>1.000</b>	<b>6.87</b>	<b>26.0</b>	<b>3.29</b>	<b>Up</b>	<b>48td</b>
	4.0	50.0	3.622	2.328	2.9	1.000	1.000	6.91	26.3	3.20	Up	48td
	4.0	60.0	4.217	2.108	3.1	1.000	1.000	7.11	29.1	2.52	Up	48td
	4.0	70.0	4.597	1.572	3.1	1.000	1.000	7.05	32.2	2.08	Up	48td
	4.0	80.0	4.789	0.832	2.8	1.000	1.000	6.75	35.7	1.75	Up	48td
	4.0	90.0	4.813	-0.000	2.4	1.000	1.000	6.26	39.7	1.47	Up	48td
	4.0	100.0	4.656	-0.808	1.7	1.000	1.000	5.59	44.8	1.22	Up	48td
	4.0	110.0	4.424	-1.513	2.2	1.000	1.000	4.84	50.9	1.30	Dn	48td
	4.0	120.0	4.255	-2.127	1.6	1.000	1.000	4.13	56.9	1.11	Dn	48td
	4.0	130.0	3.883	-2.496	1.1	1.000	1.000	3.33	66.8	0.89	Dn	48td
<b>OptDn &gt;</b>	<b>4.0</b>	<b>141.7</b>	<b>3.358</b>	<b>2.634</b>	<b>0.6</b>	<b>1.000</b>	<b>1.000</b>	<b>2.60</b>	<b>81.8</b>	<b>0.64</b>	<b>Dn</b>	<b>48td</b>
	4.0	150.0	2.967	-2.570	0.3	1.000	1.000	2.06	104.0	0.39	Dn	48td
	4.0	160.0	2.501	-2.350	0.1	1.000	1.000	1.86	132.6	0.20	Dn	48td
	4.0	170.0	2.233	-2.199	0.0	1.000	1.000	1.84	157.9	0.10	Dn	48td
	4.0	180.0	2.068	-2.068	-0.0	1.000	1.000	1.93	180.0	-0.00	Dn	48td
	6.0	30.0	2.543	2.202	3.0	1.000	0.779	8.30	21.2	6.75	Up	48td
	6.0	33.0	3.110	2.608	3.7	1.000	0.849	8.77	21.8	5.59	Up	48td
	6.0	36.0	3.602	2.914	4.4	1.000	0.901	9.16	22.6	4.90	Up	48td
	6.0	39.0	4.038	3.138	5.0	1.000	0.947	9.48	23.4	4.44	Up	48td
	6.0	42.0	4.429	3.292	5.7	1.000	0.990	9.74	24.2	4.12	Up	48td
	6.0	45.0	4.776	3.377	6.0	1.000	1.000	9.96	25.1	3.77	Up	48td
<b>OptUp &gt;</b>	<b>6.0</b>	<b>47.4</b>	<b>5.017</b>	<b>3.398</b>	<b>6.2</b>	<b>1.000</b>	<b>1.000</b>	<b>10.09</b>	<b>25.8</b>	<b>3.52</b>	<b>Up</b>	<b>48td</b>
	6.0	50.0	5.263	3.383	6.4	1.000	1.000	10.20	26.6	3.28	Up	48td
	6.0	60.0	5.982	2.991	6.7	1.000	1.000	10.36	29.9	2.61	Up	48td
	6.0	70.0	6.424	2.197	6.4	1.000	1.000	10.16	33.5	2.15	Up	48td
	6.0	80.0	6.638	1.153	5.7	1.000	1.000	9.67	37.4	1.80	Up	48td
	6.0	90.0	6.669	-0.000	4.8	1.000	1.000	8.96	41.9	1.50	Up	48td
	6.0	100.0	6.502	-1.129	3.7	1.000	1.000	8.04	47.2	1.24	Up	48td
	6.0	110.0	6.362	-2.176	4.9	1.000	1.000	7.08	52.5	1.35	Dn	48td
	6.0	120.0	6.134	-3.067	3.8	1.000	1.000	6.06	58.8	1.13	Dn	48td
	6.0	130.0	5.683	-3.653	2.5	1.000	1.000	4.94	68.3	0.89	Dn	48td
	6.0	140.0	5.119	-3.922	1.3	1.000	1.000	3.89	82.3	0.63	Dn	48td
<b>OptDn &gt;</b>	<b>6.0</b>	<b>143.7</b>	<b>4.891</b>	<b>3.941</b>	<b>1.1</b>	<b>1.000</b>	<b>1.000</b>	<b>3.55</b>	<b>89.1</b>	<b>0.54</b>	<b>Dn</b>	<b>48td</b>
	6.0	150.0	4.481	-3.881	0.6	1.000	1.000	3.08	103.4	0.39	Dn	48td
	6.0	160.0	3.800	-3.571	0.2	1.000	1.000	2.76	131.9	0.19	Dn	48td
	6.0	170.0	3.389	-3.337	0.1	1.000	1.000	2.73	157.5	0.10	Dn	48td
	6.0	180.0	3.139	-3.139	-0.0	1.000	1.000	2.86	180.0	-0.00	Dn	48td

**Best Performance (cont)**

	<i>TWS</i>	<i>TWA</i>	<i>V</i>	<i>VMG</i>	<i>Heel</i>	<i>Reef</i>	<i>Flat</i>	<i>AWS</i>	<i>AWA</i>	<i>Lee</i>	<i>Sail</i>	<i>Flot</i>
	8.0	30.0	3.320	2.875	5.2	1.000	0.760	10.99	21.2	6.79	Up	48td
	8.0	33.0	4.041	3.389	6.4	1.000	0.819	11.59	21.9	5.58	Up	48td
	8.0	36.0	4.625	3.741	7.4	1.000	0.867	12.04	22.8	4.94	Up	48td
	8.0	39.0	5.121	3.980	8.4	1.000	0.906	12.38	23.7	4.52	Up	48td
	8.0	42.0	5.556	4.129	9.3	1.000	0.941	12.66	24.7	4.20	Up	48td
	8.0	45.0	5.939	4.199	10.2	1.000	0.980	12.86	25.7	4.00	Up	48td
<b>OptUp &gt;</b>	<b>8.0</b>	<b>46.4</b>	<b>6.103</b>	<b>4.207</b>	<b>10.5</b>	<b>1.000</b>	<b>0.997</b>	<b>12.94</b>	<b>26.1</b>	<b>3.91</b>	<b>Up</b>	<b>48td</b>
	8.0	50.0	6.481	4.166	10.9	1.000	1.000	13.09	27.4	3.56	Up	48td
	8.0	60.0	7.212	3.606	11.0	1.000	1.000	13.11	31.2	2.85	Up	48td
	8.0	70.0	7.635	2.611	10.2	1.000	1.000	12.74	35.5	2.34	Up	48td
	8.0	80.0	7.837	1.361	8.9	1.000	1.000	12.07	40.2	1.94	Up	48td
	8.0	90.0	7.879	-0.000	7.4	1.000	1.000	11.18	45.2	1.59	Up	48td
	8.0	100.0	7.768	-1.349	9.8	1.000	1.000	10.05	50.6	1.74	Dn	48td
	8.0	110.0	7.765	-2.656	8.3	1.000	1.000	8.98	55.9	1.48	Dn	48td
	8.0	120.0	7.550	-3.775	6.3	1.000	1.000	7.75	62.7	1.20	Dn	48td
	8.0	130.0	7.143	-4.591	4.2	1.000	1.000	6.43	71.9	0.91	Dn	48td
	8.0	140.0	6.577	-5.038	2.5	1.000	1.000	5.16	85.0	0.64	Dn	48td
<b>OptDn &gt;</b>	<b>8.0</b>	<b>145.7</b>	<b>6.183</b>	<b>5.108</b>	<b>1.7</b>	<b>1.000</b>	<b>1.000</b>	<b>4.53</b>	<b>95.4</b>	<b>0.49</b>	<b>Dn</b>	<b>48td</b>
	8.0	150.0	5.855	-5.070	1.1	1.000	1.000	4.14	105.0	0.38	Dn	48td
	8.0	160.0	5.037	-4.733	0.4	1.000	1.000	3.69	132.2	0.19	Dn	48td
	8.0	170.0	4.523	-4.454	0.2	1.000	1.000	3.63	157.5	0.09	Dn	48td
	8.0	180.0	4.201	-4.201	-0.0	1.000	1.000	3.80	180.0	-0.00	Dn	48td
	10.0	30.0	3.958	3.428	7.6	1.000	0.722	13.56	21.4	6.94	Up	48td
	10.0	33.0	4.772	4.002	9.3	1.000	0.777	14.21	22.2	5.75	Up	48td
	10.0	36.0	5.409	4.376	10.8	1.000	0.825	14.68	23.2	5.16	Up	48td
	10.0	39.0	5.945	4.620	12.0	1.000	0.854	15.03	24.2	4.69	Up	48td
	10.0	42.0	6.398	4.754	13.1	1.000	0.880	15.29	25.2	4.36	Up	48td
<b>OptUp &gt;</b>	<b>10.0</b>	<b>44.4</b>	<b>6.696</b>	<b>4.784</b>	<b>13.8</b>	<b>1.000</b>	<b>0.900</b>	<b>15.42</b>	<b>26.2</b>	<b>4.17</b>	<b>Up</b>	<b>48td</b>
	10.0	45.0	6.771	4.788	14.0	1.000	0.905	15.45	26.4	4.12	Up	48td
	10.0	50.0	7.279	4.679	15.2	1.000	0.947	15.57	28.3	3.82	Up	48td
	10.0	60.0	7.980	3.990	15.9	1.000	1.000	15.42	32.7	3.26	Up	48td
	10.0	70.0	8.344	2.854	14.3	1.000	1.000	14.88	37.7	2.66	Up	48td
	10.0	80.0	8.514	1.478	12.1	1.000	1.000	14.06	43.2	2.18	Up	48td
	10.0	90.0	8.561	-0.000	9.9	1.000	1.000	13.05	49.0	1.76	Up	48td
	10.0	100.0	8.559	-1.486	14.9	1.000	1.000	11.71	54.4	2.10	Dn	48td
	10.0	110.0	8.566	-2.930	12.2	1.000	1.000	10.53	60.7	1.71	Dn	48td
	10.0	120.0	8.443	-4.221	9.0	1.000	1.000	9.22	68.1	1.32	Dn	48td
	10.0	130.0	8.182	-5.259	6.1	1.000	1.000	7.82	77.0	0.97	Dn	48td
	10.0	140.0	7.731	-5.922	3.6	1.000	1.000	6.42	89.4	0.66	Dn	48td
<b>OptDn &gt;</b>	<b>10.0</b>	<b>148.4</b>	<b>7.166</b>	<b>6.105</b>	<b>2.0</b>	<b>1.000</b>	<b>1.000</b>	<b>5.41</b>	<b>104.5</b>	<b>0.43</b>	<b>Dn</b>	<b>48td</b>
	10.0	150.0	7.044	-6.100	1.6	1.000	1.000	5.25	107.9	0.39	Dn	48td
	10.0	160.0	6.180	-5.807	0.6	1.000	1.000	4.70	133.2	0.20	Dn	48td
	10.0	170.0	5.596	-5.511	0.2	1.000	1.000	4.59	157.8	0.10	Dn	48td
	10.0	180.0	5.218	-5.218	-0.0	1.000	1.000	4.78	180.0	-0.00	Dn	48td

**Best Performance (cont)**

	<i>TWS</i>	<i>TWA</i>	<i>V</i>	<i>VMG</i>	<i>Heel</i>	<i>Reef</i>	<i>Flat</i>	<i>AWS</i>	<i>AWA</i>	<i>Lee</i>	<i>Sail</i>	<i>Flot</i>
	12.0	30.0	4.480	3.880	10.3	1.000	0.686	16.00	21.7	7.25	Up	48td
	12.0	33.0	5.360	4.495	12.3	1.000	0.731	16.69	22.5	5.99	Up	48td
	12.0	36.0	6.024	4.873	13.9	1.000	0.755	17.16	23.5	5.26	Up	48td
	12.0	39.0	6.555	5.094	15.3	1.000	0.778	17.47	24.6	4.81	Up	48td
	12.0	42.0	6.972	5.181	16.3	1.000	0.797	17.66	25.9	4.49	Up	48td
<b>OptUp &gt;</b>	<b>12.0</b>	<b>43.1</b>	<b>7.097</b>	<b>5.183</b>	<b>16.6</b>	<b>1.000</b>	<b>0.804</b>	<b>17.70</b>	<b>26.3</b>	<b>4.41</b>	<b>Up</b>	<b>48td</b>
	12.0	45.0	7.323	5.178	17.2	1.000	0.816	17.77	27.1	4.25	Up	48td
	12.0	50.0	7.786	5.005	18.3	1.000	0.851	17.79	29.4	3.95	Up	48td
	12.0	60.0	8.387	4.194	19.8	1.000	0.946	17.39	34.2	3.62	Up	48td
	12.0	70.0	8.741	2.990	18.7	1.000	1.000	16.70	39.7	3.12	Up	48td
	12.0	80.0	8.938	1.552	15.7	1.000	1.000	15.84	45.9	2.50	Up	48td
	12.0	90.0	9.015	-0.000	12.5	1.000	1.000	14.78	52.4	1.99	Up	48td
	12.0	100.0	8.987	-1.561	20.7	1.000	1.000	13.03	58.0	2.58	Dn	48td
	12.0	110.0	9.064	-3.100	16.4	1.000	1.000	11.90	65.4	2.01	Dn	48td
	12.0	120.0	9.011	-4.506	12.0	1.000	1.000	10.60	73.5	1.51	Dn	48td
	12.0	130.0	8.828	-5.675	8.1	1.000	1.000	9.17	83.0	1.08	Dn	48td
	12.0	140.0	8.509	-6.518	4.8	1.000	1.000	7.72	95.1	0.71	Dn	48td
	12.0	150.0	7.984	-6.914	2.3	1.000	1.000	6.46	111.9	0.40	Dn	48td
<b>OptDn &gt;</b>	<b>12.0</b>	<b>151.5</b>	<b>7.873</b>	<b>6.922</b>	<b>2.0</b>	<b>1.000</b>	<b>1.000</b>	<b>6.31</b>	<b>115.1</b>	<b>0.36</b>	<b>Dn</b>	<b>48td</b>
	12.0	160.0	7.185	-6.752	0.9	1.000	1.000	5.79	134.9	0.21	Dn	48td
	12.0	170.0	6.597	-6.497	0.4	1.000	1.000	5.62	158.2	0.10	Dn	48td
	12.0	180.0	6.181	-6.181	-0.0	1.000	1.000	5.82	180.0	-0.00	Dn	48td
	14.0	30.0	4.925	4.266	12.8	1.000	0.636	18.37	21.8	7.41	Up	48td
	14.0	33.0	5.818	4.880	15.1	1.000	0.667	19.04	22.7	6.13	Up	48td
	14.0	36.0	6.472	5.236	16.6	1.000	0.682	19.47	23.9	5.38	Up	48td
	14.0	39.0	6.965	5.413	17.9	1.000	0.696	19.72	25.2	4.93	Up	48td
	14.0	42.0	7.363	5.472	18.9	1.000	0.710	19.86	26.5	4.61	Up	48td
<b>OptUp &gt;</b>	<b>14.0</b>	<b>42.1</b>	<b>7.364</b>	<b>5.465</b>	<b>18.9</b>	<b>1.000</b>	<b>0.711</b>	<b>19.85</b>	<b>26.6</b>	<b>4.61</b>	<b>Up</b>	<b>48td</b>
	14.0	45.0	7.688	5.436	19.7	1.000	0.728	19.90	27.9	4.38	Up	48td
	14.0	50.0	8.104	5.209	20.8	1.000	0.762	19.82	30.4	4.11	Up	48td
	14.0	60.0	8.625	4.313	22.0	1.000	0.848	19.25	35.7	3.78	Up	48td
	14.0	70.0	8.983	3.072	22.4	1.000	0.957	18.37	41.4	3.52	Up	48td
	14.0	80.0	9.249	1.606	19.7	1.000	1.000	17.46	48.0	2.89	Up	48td
	14.0	90.0	9.378	-0.000	15.6	1.000	1.000	16.42	55.2	2.24	Up	48td
	14.0	100.0	9.368	-1.627	11.7	1.000	1.000	15.18	62.8	1.72	Up	48td
	14.0	110.0	9.430	-3.225	21.3	1.000	1.000	13.10	69.3	2.37	Dn	48td
	14.0	120.0	9.469	-4.734	15.6	1.000	1.000	11.94	78.1	1.72	Dn	48td
	14.0	130.0	9.340	-6.004	10.4	1.000	1.000	10.56	88.1	1.21	Dn	48td
	14.0	140.0	9.056	-6.937	6.1	1.000	1.000	9.10	100.6	0.78	Dn	48td
	14.0	150.0	8.619	-7.464	3.0	1.000	1.000	7.82	116.6	0.43	Dn	48td
<b>OptDn &gt;</b>	<b>14.0</b>	<b>156.3</b>	<b>8.246</b>	<b>7.553</b>	<b>1.7</b>	<b>1.000</b>	<b>1.000</b>	<b>7.24</b>	<b>129.2</b>	<b>0.28</b>	<b>Dn</b>	<b>48td</b>
	14.0	160.0	8.017	-7.533	1.2	1.000	1.000	7.02	137.0	0.22	Dn	48td
	14.0	170.0	7.483	-7.369	0.5	1.000	1.000	6.76	158.9	0.10	Dn	48td
	14.0	180.0	7.058	-7.058	-0.0	1.000	1.000	6.94	180.0	-0.00	Dn	48td

**Best Performance (cont)**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	16.0	30.0	5.241	4.539	15.1	1.000	0.579	20.60	22.0	7.62	Up	48td
	16.0	33.0	6.140	5.149	17.2	1.000	0.596	21.26	23.1	6.22	Up	48td
	16.0	36.0	6.770	5.477	18.9	1.000	0.611	21.63	24.3	5.53	Up	48td
	16.0	39.0	7.240	5.626	20.1	1.000	0.622	21.83	25.7	5.08	Up	48td
<b>OptUp &gt;</b>	<b>16.0</b>	<b>41.2</b>	<b>7.514</b>	<b>5.653</b>	<b>20.7</b>	<b>1.000</b>	<b>0.631</b>	<b>21.90</b>	<b>26.8</b>	<b>4.84</b>	<b>Up</b>	<b>48td</b>
	16.0	42.0	7.617	5.660	21.0	1.000	0.634	21.92	27.1	4.75	Up	48td
	16.0	45.0	7.919	5.600	21.7	1.000	0.648	21.92	28.7	4.52	Up	48td
	16.0	50.0	8.293	5.331	22.7	1.000	0.679	21.75	31.3	4.26	Up	48td
	16.0	60.0	8.780	4.390	23.7	1.000	0.759	21.03	37.1	3.94	Up	48td
	16.0	70.0	9.147	3.128	24.0	1.000	0.858	20.06	43.2	3.63	Up	48td
	16.0	80.0	9.456	1.642	23.8	1.000	0.986	18.91	49.7	3.34	Up	48td
	16.0	90.0	9.665	-0.000	19.1	1.000	1.000	17.95	57.4	2.54	Up	48td
	16.0	100.0	9.706	-1.685	14.2	1.000	1.000	16.77	65.6	1.91	Up	48td
	16.0	110.0	9.675	-3.309	24.5	0.971	1.000	14.31	72.9	2.65	Dn	48td
	16.0	120.0	9.835	-4.917	19.6	1.000	1.000	13.18	82.0	1.98	Dn	48td
	16.0	130.0	9.778	-6.285	12.9	1.000	1.000	11.96	92.4	1.34	Dn	48td
	16.0	140.0	9.527	-7.298	7.5	1.000	1.000	10.56	105.0	0.85	Dn	48td
	16.0	150.0	9.105	-7.885	3.7	1.000	1.000	9.29	120.8	0.47	Dn	48td
	16.0	160.0	8.615	-8.095	1.6	1.000	1.000	8.44	139.6	0.25	Dn	48td
<b>OptDn &gt;</b>	<b>16.0</b>	<b>164.3</b>	<b>8.432</b>	<b>8.118</b>	<b>1.3</b>	<b>1.000</b>	<b>1.000</b>	<b>8.21</b>	<b>148.2</b>	<b>0.19</b>	<b>Dn</b>	<b>48td</b>
	16.0	170.0	8.205	-8.080	0.7	1.000	1.000	8.05	159.8	0.12	Dn	48td
	16.0	180.0	7.828	-7.828	-0.0	1.000	1.000	8.17	180.0	-0.00	Dn	48td
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	20.0	30.0	5.402	4.678	18.2	1.000	0.470	24.63	22.7	8.61	Up	48td
	20.0	33.0	6.408	5.374	20.5	1.000	0.482	25.33	23.8	6.79	Up	48td
	20.0	36.0	7.023	5.682	22.0	1.000	0.489	25.64	25.2	5.98	Up	48td
	20.0	39.0	7.483	5.816	23.0	1.000	0.496	25.78	26.7	5.46	Up	48td
<b>OptUp &gt;</b>	<b>20.0</b>	<b>40.4</b>	<b>7.648</b>	<b>5.823</b>	<b>23.5</b>	<b>1.000</b>	<b>0.501</b>	<b>25.78</b>	<b>27.5</b>	<b>5.31</b>	<b>Up</b>	<b>48td</b>
	20.0	42.0	7.838	5.825	24.0	1.000	0.509	25.78	28.3	5.16	Up	48td
	20.0	45.0	8.118	5.740	24.7	1.000	0.521	25.70	30.0	4.91	Up	48td
	20.0	50.0	8.460	5.438	24.8	0.962	0.592	25.45	33.1	4.63	Up	48td
	20.0	60.0	8.956	4.478	24.6	0.913	0.737	24.64	39.7	4.21	Up	48td
	20.0	70.0	9.362	3.202	24.7	0.905	0.850	23.54	46.5	3.85	Up	48td
	20.0	80.0	9.707	1.686	24.7	0.913	0.966	22.22	53.6	3.52	Up	48td
	20.0	90.0	10.024	-0.000	24.9	0.974	1.000	20.73	61.1	3.15	Up	48td
	20.0	100.0	10.236	-1.777	20.0	1.000	1.000	19.70	69.9	2.36	Up	48td
	20.0	110.0	10.214	-3.493	14.2	1.000	1.000	18.53	79.5	1.71	Up	48td
	20.0	120.0	10.349	-5.175	26.2	0.966	1.000	15.54	88.7	2.45	Dn	48td
	20.0	130.0	10.541	-6.775	19.1	1.000	1.000	14.66	99.1	1.64	Dn	48td
	20.0	140.0	10.342	-7.922	10.8	1.000	1.000	13.57	111.5	1.00	Dn	48td
	20.0	150.0	9.925	-8.595	5.5	1.000	1.000	12.40	126.6	0.57	Dn	48td
	20.0	160.0	9.518	-8.944	2.9	1.000	1.000	11.52	143.6	0.33	Dn	48td
<b>OptDn &gt;</b>	<b>20.0</b>	<b>169.0</b>	<b>9.214</b>	<b>9.045</b>	<b>1.4</b>	<b>1.000</b>	<b>1.000</b>	<b>11.10</b>	<b>159.9</b>	<b>0.17</b>	<b>Dn</b>	<b>48td</b>
	20.0	170.0	9.182	-9.043	1.1	1.000	1.000	11.07	161.7	0.15	Dn	48td
	20.0	180.0	8.888	-8.888	-0.0	1.000	1.000	11.11	180.0	-0.00	Dn	48td

**Best Performance (cont)**

	<b>TWS</b>	<b>TWA</b>	<b>V</b>	<b>VMG</b>	<b>Heel</b>	<b>Reef</b>	<b>Flat</b>	<b>AWS</b>	<b>AWA</b>	<b>Lee</b>	<b>Sail</b>	<b>Flot</b>
	25.0	30.0	6.071	5.258	30.2	1.000	1.000	29.75	21.3	15.00	Up	48td
	25.0	33.0	6.134	5.144	22.9	0.999	0.376	29.86	24.8	8.38	Up	48td
	25.0	36.0	6.865	5.554	23.9	0.965	0.411	30.24	26.4	7.09	Up	48td
	25.0	39.0	7.389	5.743	24.4	0.930	0.452	30.41	28.1	6.32	Up	48td
<b>OptUp &gt;</b>	<b>25.0</b>	<b>41.6</b>	<b>7.775</b>	<b>5.812</b>	<b>24.6</b>	<b>0.903</b>	<b>0.487</b>	<b>30.47</b>	<b>29.7</b>	<b>5.82</b>	<b>Up</b>	<b>48td</b>
	25.0	42.0	7.793	5.791	24.7	0.900	0.495	30.44	30.0	5.83	Up	48td
	25.0	45.0	8.119	5.741	24.8	0.872	0.542	30.38	31.9	5.48	Up	48td
	25.0	50.0	8.509	5.469	24.9	0.836	0.623	30.09	35.2	5.11	Up	48td
	25.0	60.0	9.072	4.536	25.0	0.799	0.762	29.16	42.3	4.58	Up	48td
	25.0	70.0	9.528	3.259	25.1	0.792	0.879	27.92	49.7	4.15	Up	48td
	25.0	80.0	9.922	1.723	25.1	0.799	1.000	26.47	57.4	3.76	Up	48td
	25.0	90.0	10.308	-0.000	25.6	0.872	1.000	24.78	65.4	3.33	Up	48td
	25.0	100.0	10.669	-1.853	26.4	0.969	1.000	22.95	74.0	2.94	Up	48td
	25.0	110.0	10.908	-3.731	20.8	1.000	1.000	22.09	83.9	2.14	Up	48td
	25.0	120.0	10.875	-5.437	27.6	0.856	1.000	19.26	94.8	2.56	Dn	48td
	25.0	130.0	11.356	-7.300	28.3	1.000	1.000	17.51	105.6	2.07	Dn	48td
	25.0	140.0	11.408	-8.739	16.2	1.000	1.000	17.27	116.6	1.15	Dn	48td
	25.0	150.0	10.937	-9.472	8.7	1.000	1.000	16.35	130.9	0.70	Dn	48td
	25.0	160.0	10.480	-9.848	4.9	1.000	1.000	15.55	146.8	0.44	Dn	48td
	25.0	170.0	10.132	-9.978	2.1	1.000	1.000	15.12	163.3	0.20	Dn	48td
<b>OptDn &gt;</b>	<b>25.0</b>	<b>170.1</b>	<b>10.130</b>	<b>9.978</b>	<b>2.1</b>	<b>1.000</b>	<b>1.000</b>	<b>15.12</b>	<b>163.4</b>	<b>0.20</b>	<b>Dn</b>	<b>48td</b>
	25.0	180.0	9.838	-9.838	-0.0	1.000	1.000	15.16	180.0	-0.00	Dn	48td
	30.0	30.0	1.769	1.532	17.5	0.768	0.003	31.22	27.3	7.30	Up	48td
	30.0	33.0	3.930	3.296	35.0	0.500	0.698	32.02	24.7	15.00	Up	48td
	30.0	36.0	6.188	5.006	23.5	0.867	0.414	34.49	28.0	9.42	Up	48td
	30.0	39.0	6.978	5.423	24.3	0.832	0.462	34.84	29.6	7.77	Up	48td
	30.0	42.0	7.522	5.590	24.8	0.804	0.508	34.94	31.4	6.91	Up	48td
<b>OptUp &gt;</b>	<b>30.0</b>	<b>43.6</b>	<b>7.730</b>	<b>5.594</b>	<b>24.9</b>	<b>0.790</b>	<b>0.534</b>	<b>34.92</b>	<b>32.5</b>	<b>6.61</b>	<b>Up</b>	<b>48td</b>
	30.0	45.0	7.951	5.622	25.0	0.778	0.556	34.93	33.4	6.29	Up	48td
	30.0	50.0	8.440	5.425	25.2	0.744	0.639	34.66	36.9	5.71	Up	48td
	30.0	60.0	9.092	4.546	26.1	0.762	0.669	33.54	44.1	4.96	Up	48td
	30.0	70.0	9.610	3.287	25.6	0.707	0.894	32.27	52.0	4.51	Up	48td
	30.0	80.0	10.065	1.748	25.7	0.720	1.000	30.70	60.2	4.04	Up	48td
	30.0	90.0	10.522	-0.000	26.5	0.788	1.000	28.85	68.6	3.56	Up	48td
	30.0	100.0	10.956	-1.902	27.2	0.877	1.000	26.90	77.7	3.11	Up	48td
	30.0	110.0	11.374	-3.890	28.1	0.992	1.000	24.90	87.4	2.71	Up	48td
	30.0	120.0	11.590	-5.795	20.4	1.000	1.000	24.58	98.0	1.82	Up	48td
	30.0	130.0	12.075	-7.762	31.4	0.927	1.000	20.91	110.2	2.15	Dn	48td
	30.0	140.0	12.697	-9.727	23.0	1.000	1.000	20.51	120.1	1.23	Dn	48td
	30.0	150.0	12.190	-10.557	12.9	1.000	1.000	20.10	133.3	0.77	Dn	48td
	30.0	160.0	11.564	-10.867	7.3	1.000	1.000	19.49	148.5	0.51	Dn	48td
<b>OptDn &gt;</b>	<b>30.0</b>	<b>167.9</b>	<b>11.200</b>	<b>10.950</b>	<b>4.0</b>	<b>1.000</b>	<b>1.000</b>	<b>19.19</b>	<b>160.9</b>	<b>0.30</b>	<b>Dn</b>	<b>48td</b>
	30.0	170.0	11.113	-10.944	3.2	1.000	1.000	19.15	164.2	0.24	Dn	48td
	30.0	180.0	10.721	-10.721	-0.0	1.000	1.000	19.28	180.0	-0.00	Dn	48td

**Best Performance (cont)**

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