

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : FAL 48 BOWL.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] LLI-18210-4

[TESTLAB] LightLab International (www.LightLabInternational.com)

[MANUFAC] Justice Design Group, Los Angeles, CA 90071

[LUMCAT] LumenAria Faux Alabaster (FAL) 48" Bowl

[LUMINAIRE] Justice Design Group - Pendant mount luminaire. Product ID: FAL 48" Bowl

[MORE] Extruded base plate with resin bowl lens.

[MORE] 126 LEDs with 21 in each of six arrays with white plastic lenses.

[MORE] No driver.

[MORE] Operating at 120 VAC and 60 Hz.

[OTHER] Absolute test - lamp lumens value set to -1

[MORE] NA conventions used for C0 plane alignment and C-plane rotation direction.

[MORE] The sample was tested at a distance of 8m.

[MORE] This IES file created by LightLab/LSA Report program version 3.820a.

[DATE] This file created: Friday, August 17, 2018 1:06:24 PM

[ISSUEDATE] Friday, August 17, 2018 1:06:24 PM

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3130
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	46
Total Luminaire Watts	68.2
Ballast Factor	1.00
CIE Type	Semi-Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Circular w/ Sides
Luminous Length (0-180)	1.22 m (Diameter)
Luminous Width (90-270)	1.22 m (Diameter)
Luminous Height	0.31 m

**IES INDOOR REPORT**  
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**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	245	245	245
55	213	213	213
65	176	176	176
75	133	133	133
85	86	86	86

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : FAL 48 BOWL.IES

CANDELA TABULATION

	<u>0</u>
0.0	404.179
0.5	404.143
1.0	404.107
1.5	404.018
2.0	403.865
2.5	403.713
3.0	403.551
3.5	403.255
4.0	402.995
4.5	402.681
5.0	402.340
5.5	401.964
6.0	401.524
6.5	401.058
7.0	400.618
7.5	400.062
8.0	399.479
8.5	398.914
9.0	398.223
9.5	397.550
10.0	396.833
10.5	396.052
11.0	395.272
11.5	394.447
12.0	393.604
12.5	392.707
13.0	391.819
13.5	390.787
14.0	389.818
14.5	388.832
15.0	387.728
15.5	386.643
16.0	385.477
16.5	384.302
17.0	383.073
17.5	381.826
18.0	380.507
18.5	379.279
19.0	377.942
19.5	376.516
20.0	375.143
20.5	373.699
21.0	372.237
21.5	370.703
22.0	369.124
22.5	367.546
23.0	365.976
23.5	364.299
24.0	362.621
24.5	360.953
25.0	359.204
25.5	357.401
26.0	355.616
26.5	353.759

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : FAL 48 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	351.902
<b>27.5</b>	350.009
<b>28.0</b>	348.081
<b>28.5</b>	346.125
<b>29.0</b>	344.143
<b>29.5</b>	342.125
<b>30.0</b>	340.098
<b>30.5</b>	337.981
<b>31.0</b>	335.846
<b>31.5</b>	333.747
<b>32.0</b>	331.657
<b>32.5</b>	329.441
<b>33.0</b>	327.199
<b>33.5</b>	324.911
<b>34.0</b>	322.678
<b>34.5</b>	320.328
<b>35.0</b>	318.031
<b>35.5</b>	315.690
<b>36.0</b>	313.295
<b>36.5</b>	310.954
<b>37.0</b>	308.523
<b>37.5</b>	306.038
<b>38.0</b>	303.581
<b>38.5</b>	301.051
<b>39.0</b>	298.486
<b>39.5</b>	295.956
<b>40.0</b>	293.436
<b>40.5</b>	290.780
<b>41.0</b>	288.197
<b>41.5</b>	285.596
<b>42.0</b>	282.896
<b>42.5</b>	280.196
<b>43.0</b>	277.496
<b>43.5</b>	274.814
<b>44.0</b>	271.988
<b>44.5</b>	269.261
<b>45.0</b>	266.472
<b>45.5</b>	263.754
<b>46.0</b>	260.910
<b>46.5</b>	258.094
<b>47.0</b>	255.232
<b>47.5</b>	252.344
<b>48.0</b>	249.447
<b>48.5</b>	246.514
<b>49.0</b>	243.679
<b>49.5</b>	240.701
<b>50.0</b>	237.840
<b>50.5</b>	234.879
<b>51.0</b>	231.883
<b>51.5</b>	228.896
<b>52.0</b>	225.909
<b>52.5</b>	222.905
<b>53.0</b>	219.864
<b>53.5</b>	216.895
<b>54.0</b>	213.809
<b>54.5</b>	210.876

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FAL 48 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>55.0</b>	207.790
<b>55.5</b>	204.713
<b>56.0</b>	201.681
<b>56.5</b>	198.614
<b>57.0</b>	195.537
<b>57.5</b>	192.442
<b>58.0</b>	189.419
<b>58.5</b>	186.325
<b>59.0</b>	183.293
<b>59.5</b>	180.162
<b>60.0</b>	177.068
<b>60.5</b>	174.054
<b>61.0</b>	170.905
<b>61.5</b>	167.784
<b>62.0</b>	164.707
<b>62.5</b>	161.648
<b>63.0</b>	158.554
<b>63.5</b>	155.558
<b>64.0</b>	152.418
<b>64.5</b>	149.359
<b>65.0</b>	146.328
<b>65.5</b>	143.260
<b>66.0</b>	140.183
<b>66.5</b>	137.115
<b>67.0</b>	134.093
<b>67.5</b>	131.016
<b>68.0</b>	128.110
<b>68.5</b>	125.051
<b>69.0</b>	122.064
<b>69.5</b>	119.131
<b>70.0</b>	116.144
<b>70.5</b>	113.237
<b>71.0</b>	110.259
<b>71.5</b>	107.344
<b>72.0</b>	104.501
<b>72.5</b>	101.666
<b>73.0</b>	98.814
<b>73.5</b>	95.997
<b>74.0</b>	93.216
<b>74.5</b>	90.418
<b>75.0</b>	87.718
<b>75.5</b>	84.964
<b>76.0</b>	82.291
<b>76.5</b>	79.618
<b>77.0</b>	77.061
<b>77.5</b>	74.559
<b>78.0</b>	71.921
<b>78.5</b>	69.401
<b>79.0</b>	66.916
<b>79.5</b>	64.494
<b>80.0</b>	62.099
<b>80.5</b>	59.758
<b>81.0</b>	57.435
<b>81.5</b>	55.192
<b>82.0</b>	52.968
<b>82.5</b>	50.770

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : FAL 48 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>83.0</b>	48.689
<b>83.5</b>	46.626
<b>84.0</b>	44.644
<b>84.5</b>	42.652
<b>85.0</b>	40.769
<b>85.5</b>	38.948
<b>86.0</b>	37.279
<b>86.5</b>	35.665
<b>87.0</b>	34.005
<b>87.5</b>	32.525
<b>88.0</b>	31.090
<b>88.5</b>	29.861
<b>89.0</b>	28.695
<b>89.5</b>	27.735
<b>90.0</b>	27.054
<b>90.5</b>	26.623
<b>91.0</b>	26.417
<b>91.5</b>	26.103
<b>92.0</b>	26.076
<b>92.5</b>	26.219
<b>93.0</b>	26.515
<b>93.5</b>	27.045
<b>94.0</b>	27.628
<b>94.5</b>	28.444
<b>95.0</b>	29.368
<b>95.5</b>	30.292
<b>96.0</b>	31.287
<b>96.5</b>	32.373
<b>97.0</b>	33.521
<b>97.5</b>	35.189
<b>98.0</b>	38.472
<b>98.5</b>	44.662
<b>99.0</b>	55.731
<b>99.5</b>	70.612
<b>100.0</b>	87.700
<b>100.5</b>	104.626
<b>101.0</b>	119.427
<b>101.5</b>	131.106
<b>102.0</b>	136.775
<b>102.5</b>	140.389
<b>103.0</b>	144.498
<b>103.5</b>	149.476
<b>104.0</b>	155.190
<b>104.5</b>	161.846
<b>105.0</b>	169.174
<b>105.5</b>	177.373
<b>106.0</b>	186.136
<b>106.5</b>	195.268
<b>107.0</b>	204.956
<b>107.5</b>	214.607
<b>108.0</b>	224.510
<b>108.5</b>	233.839
<b>109.0</b>	242.952
<b>109.5</b>	251.662
<b>110.0</b>	260.112
<b>110.5</b>	268.490

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : FAL 48 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>111.0</b>	276.940
<b>111.5</b>	284.968
<b>112.0</b>	292.583
<b>112.5</b>	300.020
<b>113.0</b>	306.926
<b>113.5</b>	313.860
<b>114.0</b>	320.579
<b>114.5</b>	327.279
<b>115.0</b>	333.765
<b>115.5</b>	340.008
<b>116.0</b>	346.000
<b>116.5</b>	351.543
<b>117.0</b>	356.827
<b>117.5</b>	361.688
<b>118.0</b>	366.729
<b>118.5</b>	371.681
<b>119.0</b>	376.704
<b>119.5</b>	381.700
<b>120.0</b>	386.616
<b>120.5</b>	391.487
<b>121.0</b>	396.178
<b>121.5</b>	400.546
<b>122.0</b>	404.547
<b>122.5</b>	408.404
<b>123.0</b>	411.893
<b>123.5</b>	415.338
<b>124.0</b>	418.442
<b>124.5</b>	421.420
<b>125.0</b>	424.236
<b>125.5</b>	426.730
<b>126.0</b>	429.197
<b>126.5</b>	431.349
<b>127.0</b>	433.457
<b>127.5</b>	435.287
<b>128.0</b>	437.135
<b>128.5</b>	438.768
<b>129.0</b>	440.292
<b>129.5</b>	441.826
<b>130.0</b>	443.163
<b>130.5</b>	444.410
<b>131.0</b>	445.585
<b>131.5</b>	446.625
<b>132.0</b>	447.711
<b>132.5</b>	448.679
<b>133.0</b>	449.558
<b>133.5</b>	450.402
<b>134.0</b>	451.182
<b>134.5</b>	451.944
<b>135.0</b>	452.716
<b>135.5</b>	453.407
<b>136.0</b>	454.026
<b>136.5</b>	454.734
<b>137.0</b>	455.407
<b>137.5</b>	456.008
<b>138.0</b>	456.573
<b>138.5</b>	457.084

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FAL 48 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>139.0</b>	457.605
<b>139.5</b>	458.071
<b>140.0</b>	458.484
<b>140.5</b>	458.771
<b>141.0</b>	459.103
<b>141.5</b>	459.452
<b>142.0</b>	459.695
<b>142.5</b>	459.847
<b>143.0</b>	460.062
<b>143.5</b>	460.260
<b>144.0</b>	460.340
<b>144.5</b>	460.412
<b>145.0</b>	460.520
<b>145.5</b>	460.565
<b>146.0</b>	460.529
<b>146.5</b>	460.511
<b>147.0</b>	460.466
<b>147.5</b>	460.305
<b>148.0</b>	460.197
<b>148.5</b>	459.991
<b>149.0</b>	459.874
<b>149.5</b>	459.524
<b>150.0</b>	459.282
<b>150.5</b>	458.932
<b>151.0</b>	458.484
<b>151.5</b>	458.062
<b>152.0</b>	457.596
<b>152.5</b>	457.084
<b>153.0</b>	456.582
<b>153.5</b>	456.089
<b>154.0</b>	455.559
<b>154.5</b>	455.084
<b>155.0</b>	454.564
<b>155.5</b>	453.999
<b>156.0</b>	453.407
<b>156.5</b>	452.833
<b>157.0</b>	452.285
<b>157.5</b>	451.747
<b>158.0</b>	451.200
<b>158.5</b>	450.581
<b>159.0</b>	449.935
<b>159.5</b>	449.334
<b>160.0</b>	448.733
<b>160.5</b>	448.105
<b>161.0</b>	447.495
<b>161.5</b>	446.885
<b>162.0</b>	446.258
<b>162.5</b>	445.692
<b>163.0</b>	445.100
<b>163.5</b>	444.472
<b>164.0</b>	443.880
<b>164.5</b>	443.324
<b>165.0</b>	442.768
<b>165.5</b>	442.042
<b>166.0</b>	441.225
<b>166.5</b>	440.364



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FAL 48 BOWL.IES**

**CANDELA TABULATION - (Cont.)**

<b>167.0</b>	439.449
<b>167.5</b>	438.373
<b>168.0</b>	437.296
<b>168.5</b>	436.283
<b>169.0</b>	435.108
<b>169.5</b>	433.996
<b>170.0</b>	432.883
<b>170.5</b>	431.798
<b>171.0</b>	430.775
<b>171.5</b>	429.762
<b>172.0</b>	428.802
<b>172.5</b>	427.887
<b>173.0</b>	427.017
<b>173.5</b>	426.290
<b>174.0</b>	425.510
<b>174.5</b>	424.730
<b>175.0</b>	423.967
<b>175.5</b>	423.142
<b>176.0</b>	422.281
<b>176.5</b>	421.375
<b>177.0</b>	420.451
<b>177.5</b>	419.581
<b>178.0</b>	418.657
<b>178.5</b>	417.715
<b>179.0</b>	416.773
<b>179.5</b>	415.804
<b>180.0</b>	414.889

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	147.64	N.A.	4.70
0-30	313.14	N.A.	10.00
0-40	512.05	N.A.	16.40
0-60	903.34	N.A.	28.90
0-80	1141.31	N.A.	36.50
0-90	1187.07	N.A.	37.90
10-90	1148.84	N.A.	36.70
20-40	364.42	N.A.	11.60
20-50	569.95	N.A.	18.20
40-70	536.19	N.A.	17.10
60-80	237.96	N.A.	7.60
70-80	93.06	N.A.	3.00
80-90	45.77	N.A.	1.50
90-110	223.55	N.A.	7.10
90-120	550.36	N.A.	17.60
90-130	927.63	N.A.	29.60
90-150	1566.55	N.A.	50.00
90-180	1943.25	N.A.	62.10
110-180	1719.7	N.A.	54.90
0-180	3130.33	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	38.23
10-20	109.41
20-30	165.50
30-40	198.91
40-50	205.53
50-60	185.76
60-70	144.91
70-80	93.06
80-90	45.77
90-100	38.12
100-110	185.42
110-120	326.81
120-130	377.27
130-140	349.98
140-150	288.94
150-160	210.46
160-170	125.51
170-180	40.73

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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0	
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38	0
1	95	90	86	83	86	82	79	75	66	64	62	52	51	49	39	38	37	31	0
2	86	78	72	67	78	71	66	62	58	54	51	46	43	41	34	32	31	26	0
3	78	69	61	56	71	63	56	51	51	46	42	40	37	34	30	28	26	21	0
4	71	61	53	47	65	55	48	43	45	40	36	36	32	29	27	24	22	18	0
5	66	54	46	40	59	49	42	37	40	35	31	32	28	25	24	21	19	16	0
6	60	48	40	34	54	44	37	32	36	31	27	29	25	22	22	19	17	14	0
7	56	43	36	30	50	40	33	28	33	27	23	26	22	19	20	17	15	12	0
8	52	39	32	26	47	36	29	24	30	24	21	24	20	17	18	15	13	11	0
9	48	36	28	23	43	33	26	22	27	22	18	22	18	15	17	14	12	10	0
10	45	33	26	21	40	30	24	19	25	20	17	20	16	14	15	13	11	9	0

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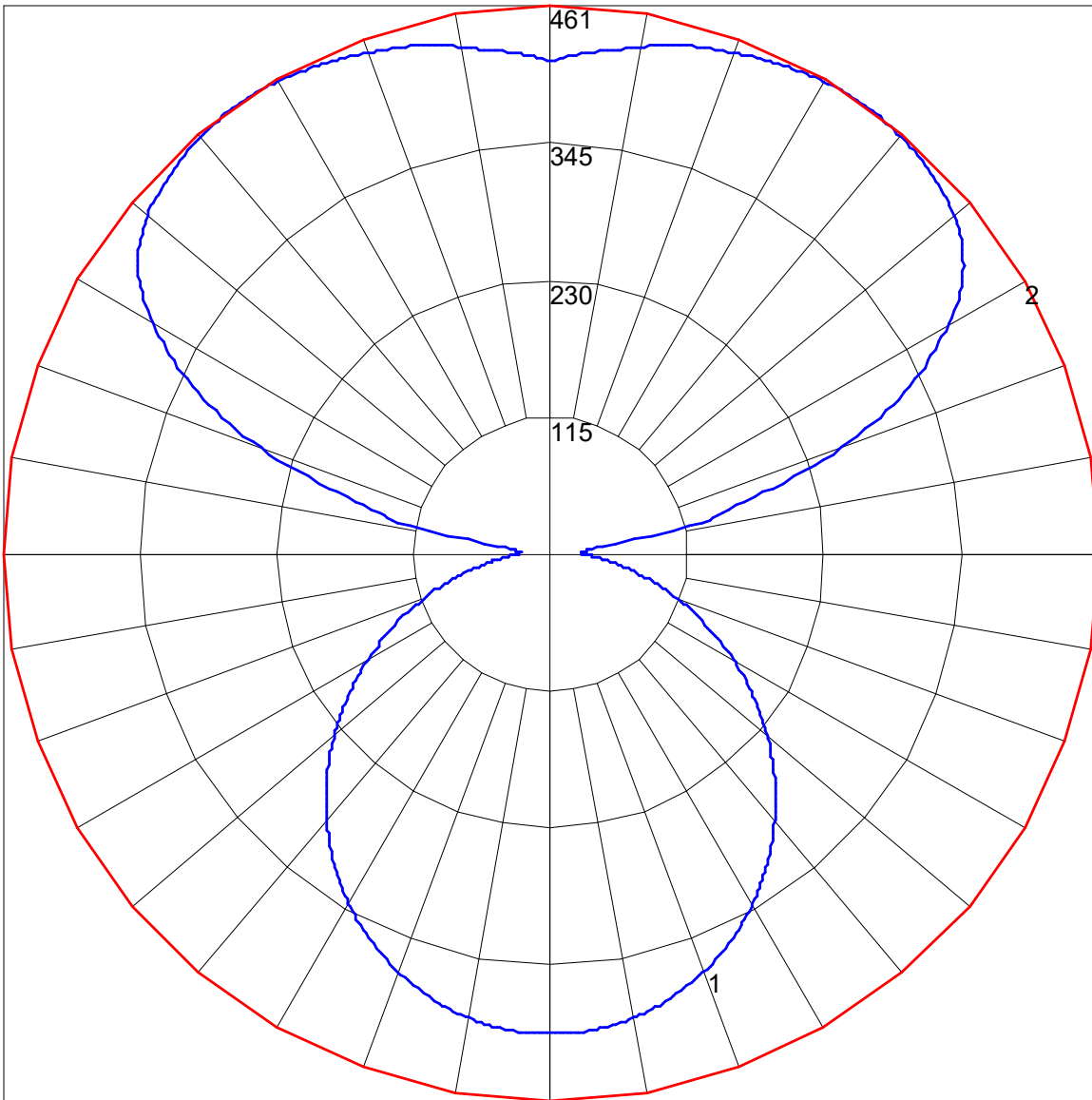
**UGR TABLE - CORRECTED**

Reflectances										
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size		UGR Viewed Crosswise					UGR Viewed Endwise				
X=2H	Y=2H	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
	3H	4.0	4.0	4.0	4.2	5.6	4.0	4.0	4.0	4.2	5.6
	4H	4.0	4.0	4.1	4.8	6.2	4.0	4.0	4.1	4.8	6.2
	6H	4.0	4.1	4.6	5.2	6.7	4.0	4.1	4.6	5.2	6.7
	8H	4.0	4.3	4.8	5.3	6.8	4.0	4.3	4.8	5.3	6.8
	12H	4.0	4.4	4.9	5.4	6.9	4.0	4.4	4.9	5.4	6.9
4H	2H	4.0	4.0	4.0	4.0	4.4	4.0	4.0	4.0	4.0	4.4
	3H	4.0	4.0	4.1	4.7	6.2	4.0	4.0	4.1	4.7	6.2
	4H	4.0	4.3	4.9	5.4	6.9	4.0	4.3	4.9	5.4	6.9
	6H	4.4	4.9	5.5	6.0	7.4	4.4	4.9	5.5	6.0	7.4
	8H	4.6	5.1	5.7	6.2	7.7	4.6	5.1	5.7	6.2	7.7
	12H	4.8	5.2	5.9	6.3	7.8	4.8	5.2	5.9	6.3	7.8
8H	4H	4.0	4.4	5.1	5.5	7.0	4.0	4.4	5.1	5.5	7.0
	6H	4.8	5.1	5.9	6.2	7.7	4.8	5.1	5.9	6.2	7.7
	8H	5.1	5.4	6.2	6.5	8.0	5.1	5.4	6.2	6.5	8.0
	12H	5.4	5.6	6.5	6.7	8.3	5.4	5.6	6.5	6.7	8.3
12H	4H	4.0	4.4	5.1	5.5	7.0	4.0	4.4	5.1	5.5	7.0
	6H	4.8	5.1	5.9	6.2	7.8	4.8	5.1	5.9	6.2	7.8
	8H	5.2	5.4	6.3	6.5	8.1	5.2	5.4	6.3	6.5	8.1

Maximum UGR = 8.3

POLAR GRAPH



Maximum Candela = 460.565 Located At Horizontal Angle = 0, Vertical Angle = 145.5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (145.5) (Through Max. Cd.)