

# Photometric Toolbox

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : HVB505400L30XX\_IES.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TESTDATE] 8/10/2017  
 [LUMCAT] HVB505400L30-JT  
 [LUMINAIRE]  
 [LAMP] LED  
 [TEST] 102929574CHI-007  
 [TESTLAB] Intertek  
 [ISSUEDATE]  
 [MANUFAC] AFX

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3545
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	39
Total Luminaire Watts	89.9
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.38 ft
Luminous Width (90-270)	4.00 ft
Luminous Height	0.38 ft

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3362	2954	2614
55	3486	3015	2453
65	3608	3060	2188
75	3730	3105	1679
85	3924	3243	667

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**CANDELA TABULATION**

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>	<u>202.5</u>
<b>0.0</b>	421.7	421.7	421.7	421.7	421.7	421.7	421.7	421.7	421.7	421.7
<b>2.5</b>	437.8	433.3	424.3	416.3	416.2	416.4	420.9	425.6	429.1	425.6
<b>5.0</b>	449.0	443.1	431.2	418.1	414.8	415.3	419.7	424.6	428.3	424.6
<b>7.5</b>	462.1	454.2	437.5	420.2	412.6	413.2	417.8	422.5	426.2	422.5
<b>10.0</b>	477.2	466.7	444.3	421.4	409.4	410.1	414.8	419.5	423.1	419.5
<b>12.5</b>	493.5	480.2	451.8	421.9	405.3	406.1	411.0	415.7	418.7	415.7
<b>15.0</b>	509.9	494.2	459.6	421.7	400.4	401.2	406.1	410.8	413.3	410.8
<b>17.5</b>	526.8	508.1	467.7	421.3	394.7	395.5	400.6	405.2	407.2	405.2
<b>20.0</b>	543.4	522.1	475.5	420.5	388.1	389.1	394.0	398.5	400.1	398.5
<b>22.5</b>	558.1	535.5	482.8	419.1	380.7	381.7	386.8	391.2	392.4	391.2
<b>25.0</b>	574.0	548.3	489.7	417.1	372.6	373.6	378.8	383.3	384.1	383.3
<b>27.5</b>	589.0	560.2	496.1	414.4	363.6	364.9	370.1	374.5	375.1	374.5
<b>30.0</b>	602.4	571.5	501.8	411.6	353.8	355.5	360.6	364.9	365.3	364.9
<b>32.5</b>	615.0	581.9	506.8	408.0	343.5	345.4	350.3	354.6	355.2	354.6
<b>35.0</b>	627.4	591.4	510.6	403.9	332.5	334.7	339.4	344.3	344.8	344.3
<b>37.5</b>	638.5	599.8	513.3	398.6	320.9	323.0	328.0	333.2	333.5	333.2
<b>40.0</b>	648.3	607.2	515.3	392.9	308.5	311.1	316.1	321.6	321.5	321.6
<b>42.5</b>	656.4	613.3	516.4	386.7	295.7	298.6	303.5	309.2	309.3	309.2
<b>45.0</b>	663.2	618.5	516.7	379.9	282.0	285.3	290.4	296.8	296.8	296.8
<b>47.5</b>	668.8	622.5	515.6	372.1	268.1	271.4	277.2	283.8	284.3	283.8
<b>50.0</b>	673.0	625.3	513.9	363.8	253.5	256.9	263.3	271.0	272.2	271.0
<b>52.5</b>	675.8	626.8	511.2	355.4	238.4	241.9	249.5	258.6	259.7	258.6
<b>55.0</b>	677.3	627.1	507.7	346.1	222.5	226.5	234.7	246.1	247.5	246.1
<b>57.5</b>	677.4	626.1	502.2	335.5	206.5	210.3	220.1	233.4	235.3	233.4
<b>60.0</b>	676.2	623.3	495.8	324.0	190.1	193.9	206.2	220.6	222.8	220.6
<b>62.5</b>	673.4	619.1	488.0	311.7	172.9	177.0	193.0	207.2	208.8	207.2
<b>65.0</b>	668.8	613.7	479.6	299.2	154.9	160.0	179.1	193.3	196.0	193.3
<b>67.5</b>	662.6	607.0	470.0	285.9	136.6	143.0	164.9	180.4	184.5	180.4
<b>70.0</b>	655.6	598.7	459.2	271.4	118.5	126.2	150.2	168.6	174.2	168.6
<b>72.5</b>	647.2	588.8	447.4	256.6	100.1	111.0	136.8	157.7	165.7	157.7
<b>75.0</b>	637.2	578.3	435.7	241.6	81.8	97.6	124.8	151.0	162.3	151.0
<b>77.5</b>	626.6	567.7	423.4	226.8	63.6	83.7	114.8	146.6	155.1	146.6
<b>80.0</b>	614.8	556.0	410.3	211.7	46.2	70.4	109.6	136.9	142.9	136.9
<b>82.5</b>	603.0	544.4	397.7	197.4	30.3	59.0	101.2	125.5	132.0	125.5
<b>85.0</b>	593.0	534.8	387.9	185.7	16.8	51.6	91.6	115.5	121.5	115.5
<b>87.5</b>	585.0	527.5	380.7	177.9	6.8	44.7	83.5	105.8	112.0	105.8
<b>90.0</b>	586.3	528.1	380.1	175.4	2.1	40.8	79.6	102.3	109.2	102.3
<b>92.5</b>	590.0	530.9	382.7	177.0	2.9	46.6	86.3	110.1	117.9	110.1
<b>95.0</b>	589.6	531.2	384.6	179.8	6.7	46.9	95.4	120.6	129.3	120.6
<b>97.5</b>	590.8	533.0	387.5	184.5	12.6	46.2	97.2	128.4	138.3	128.4
<b>100.0</b>	592.2	534.8	391.1	190.8	19.9	45.9	93.5	128.9	140.4	128.9
<b>102.5</b>	592.8	535.6	394.5	197.5	28.2	47.5	91.5	125.1	136.1	125.1
<b>105.0</b>	593.4	536.3	397.8	203.8	37.0	50.6	88.9	121.8	132.3	121.8
<b>107.5</b>	592.8	536.5	400.7	209.6	45.9	57.0	85.4	118.1	128.4	118.1
<b>110.0</b>	590.8	535.5	402.4	215.1	54.8	64.2	84.8	113.8	124.2	113.8
<b>112.5</b>	587.6	533.2	403.0	220.6	63.7	71.5	88.2	108.9	119.6	108.9
<b>115.0</b>	583.5	530.3	403.5	225.9	72.7	78.8	92.3	107.9	115.2	107.9
<b>117.5</b>	578.5	526.8	403.9	230.4	81.6	86.2	98.1	111.0	116.8	111.0
<b>120.0</b>	572.2	522.2	403.2	234.0	90.2	93.8	105.0	115.6	120.6	115.6
<b>122.5</b>	564.6	516.3	401.1	237.2	98.7	101.6	111.7	119.5	125.0	119.5
<b>125.0</b>	556.1	509.1	398.0	240.1	106.7	109.3	118.0	125.6	129.1	125.6
<b>127.5</b>	546.6	501.1	394.3	242.2	114.2	116.7	124.3	131.9	135.2	131.9
<b>130.0</b>	535.9	492.4	390.1	243.7	121.5	123.8	130.5	137.8	141.2	137.8
<b>132.5</b>	524.3	482.8	385.0	244.6	128.9	130.8	136.6	143.2	146.8	143.2

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**CANDELA TABULATION - (Cont.)**

<b>135.0</b>	511.8	472.2	378.9	245.5	136.0	137.4	142.4	148.6	151.8	148.6
<b>137.5</b>	498.1	460.5	372.3	246.2	142.6	143.8	148.3	153.9	157.0	153.9
<b>140.0</b>	484.1	448.4	365.0	246.2	148.9	149.8	154.1	159.1	161.9	159.1
<b>142.5</b>	469.4	435.5	357.0	245.3	154.9	155.6	159.8	164.1	167.0	164.1
<b>145.0</b>	453.9	421.6	348.1	244.2	160.9	161.1	165.1	169.0	171.6	169.0
<b>147.5</b>	437.4	406.6	338.7	242.8	166.6	166.4	170.2	173.8	176.2	173.8
<b>150.0</b>	420.0	391.1	328.7	240.8	171.7	171.3	175.0	178.4	180.6	178.4
<b>152.5</b>	401.8	375.3	318.4	238.6	176.6	175.8	179.4	182.6	184.8	182.6
<b>155.0</b>	382.8	358.9	307.7	236.1	181.2	180.0	183.4	186.5	188.8	186.5
<b>157.5</b>	363.1	341.7	296.5	233.5	185.4	183.9	187.0	190.0	192.4	190.0
<b>160.0</b>	342.5	323.9	284.6	230.7	189.2	187.4	190.3	193.0	195.4	193.0
<b>162.5</b>	321.6	306.2	272.8	227.5	192.5	190.5	193.1	195.7	198.2	195.7
<b>165.0</b>	301.3	288.9	261.3	224.4	195.4	193.2	195.5	198.0	200.9	198.0
<b>167.5</b>	281.6	272.2	250.2	221.3	197.9	195.4	197.6	200.1	203.5	200.1
<b>170.0</b>	262.2	255.8	239.1	217.9	200.1	197.4	199.4	201.7	205.7	201.7
<b>172.5</b>	244.5	240.6	229.2	214.6	201.7	199.0	200.8	202.9	207.1	202.9
<b>175.0</b>	230.1	227.4	220.4	211.4	202.9	200.3	201.9	203.7	207.2	203.7
<b>177.5</b>	217.9	216.0	212.6	207.8	203.7	201.1	202.8	204.4	206.7	204.4
<b>180.0</b>	204.6	204.6	204.6	204.6	204.6	204.6	204.6	204.6	204.6	204.6

**Vert. Angles**      **Horizontal Angles**

	<u><b>225.0</b></u>	<u><b>247.5</b></u>	<u><b>270.0</b></u>	<u><b>292.5</b></u>	<u><b>315.0</b></u>	<u><b>337.5</b></u>	<u><b>360.0</b></u>
<b>0.0</b>	421.7	421.7	421.7	421.7	421.7	421.7	421.7
<b>2.5</b>	420.9	416.4	416.2	416.3	424.3	433.3	437.8
<b>5.0</b>	419.7	415.3	414.8	418.1	431.2	443.1	449.0
<b>7.5</b>	417.8	413.2	412.6	420.2	437.5	454.2	462.1
<b>10.0</b>	414.8	410.1	409.4	421.4	444.3	466.7	477.2
<b>12.5</b>	411.0	406.1	405.3	421.9	451.8	480.2	493.5
<b>15.0</b>	406.1	401.2	400.4	421.7	459.6	494.2	509.9
<b>17.5</b>	400.6	395.5	394.7	421.3	467.7	508.1	526.8
<b>20.0</b>	394.0	389.1	388.1	420.5	475.5	522.1	543.4
<b>22.5</b>	386.8	381.7	380.7	419.1	482.8	535.5	558.1
<b>25.0</b>	378.8	373.6	372.6	417.1	489.7	548.3	574.0
<b>27.5</b>	370.1	364.9	363.6	414.4	496.1	560.2	589.0
<b>30.0</b>	360.6	355.5	353.8	411.6	501.8	571.5	602.4
<b>32.5</b>	350.3	345.4	343.5	408.0	506.8	581.9	615.0
<b>35.0</b>	339.4	334.7	332.5	403.9	510.6	591.4	627.4
<b>37.5</b>	328.0	323.0	320.9	398.6	513.3	599.8	638.5
<b>40.0</b>	316.1	311.1	308.5	392.9	515.3	607.2	648.3
<b>42.5</b>	303.5	298.6	295.7	386.7	516.4	613.3	656.4
<b>45.0</b>	290.4	285.3	282.0	379.9	516.7	618.5	663.2
<b>47.5</b>	277.2	271.4	268.1	372.1	515.6	622.5	668.8
<b>50.0</b>	263.3	256.9	253.5	363.8	513.9	625.3	673.0
<b>52.5</b>	249.5	241.9	238.4	355.4	511.2	626.8	675.8
<b>55.0</b>	234.7	226.5	222.5	346.1	507.7	627.1	677.3
<b>57.5</b>	220.1	210.3	206.5	335.5	502.2	626.1	677.4
<b>60.0</b>	206.2	193.9	190.1	324.0	495.8	623.3	676.2
<b>62.5</b>	193.0	177.0	172.9	311.7	488.0	619.1	673.4
<b>65.0</b>	179.1	160.0	154.9	299.2	479.6	613.7	668.8
<b>67.5</b>	164.9	143.0	136.6	285.9	470.0	607.0	662.6
<b>70.0</b>	150.2	126.2	118.5	271.4	459.2	598.7	655.6
<b>72.5</b>	136.8	111.0	100.1	256.6	447.4	588.8	647.2
<b>75.0</b>	124.8	97.6	81.8	241.6	435.7	578.3	637.2
<b>77.5</b>	114.8	83.7	63.6	226.8	423.4	567.7	626.6
<b>80.0</b>	109.6	70.4	46.2	211.7	410.3	556.0	614.8

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**CANDELA TABULATION - (Cont.)**

82.5	101.2	59.0	30.3	197.4	397.7	544.4	603.0
85.0	91.6	51.6	16.8	185.7	387.9	534.8	593.0
87.5	83.5	44.7	6.8	177.9	380.7	527.5	585.0
90.0	79.6	40.8	2.1	175.4	380.1	528.1	586.3
92.5	86.3	46.6	2.9	177.0	382.7	530.9	590.0
95.0	95.4	46.9	6.7	179.8	384.6	531.2	589.6
97.5	97.2	46.2	12.6	184.5	387.5	533.0	590.8
100.0	93.5	45.9	19.9	190.8	391.1	534.8	592.2
102.5	91.5	47.5	28.2	197.5	394.5	535.6	592.8
105.0	88.9	50.6	37.0	203.8	397.8	536.3	593.4
107.5	85.4	57.0	45.9	209.6	400.7	536.5	592.8
110.0	84.8	64.2	54.8	215.1	402.4	535.5	590.8
112.5	88.2	71.5	63.7	220.6	403.0	533.2	587.6
115.0	92.3	78.8	72.7	225.9	403.5	530.3	583.5
117.5	98.1	86.2	81.6	230.4	403.9	526.8	578.5
120.0	105.0	93.8	90.2	234.0	403.2	522.2	572.2
122.5	111.7	101.6	98.7	237.2	401.1	516.3	564.6
125.0	118.0	109.3	106.7	240.1	398.0	509.1	556.1
127.5	124.3	116.7	114.2	242.2	394.3	501.1	546.6
130.0	130.5	123.8	121.5	243.7	390.1	492.4	535.9
132.5	136.6	130.8	128.9	244.6	385.0	482.8	524.3
135.0	142.4	137.4	136.0	245.5	378.9	472.2	511.8
137.5	148.3	143.8	142.6	246.2	372.3	460.5	498.1
140.0	154.1	149.8	148.9	246.2	365.0	448.4	484.1
142.5	159.8	155.6	154.9	245.3	357.0	435.5	469.4
145.0	165.1	161.1	160.9	244.2	348.1	421.6	453.9
147.5	170.2	166.4	166.6	242.8	338.7	406.6	437.4
150.0	175.0	171.3	171.7	240.8	328.7	391.1	420.0
152.5	179.4	175.8	176.6	238.6	318.4	375.3	401.8
155.0	183.4	180.0	181.2	236.1	307.7	358.9	382.8
157.5	187.0	183.9	185.4	233.5	296.5	341.7	363.1
160.0	190.3	187.4	189.2	230.7	284.6	323.9	342.5
162.5	193.1	190.5	192.5	227.5	272.8	306.2	321.6
165.0	195.5	193.2	195.4	224.4	261.3	288.9	301.3
167.5	197.6	195.4	197.9	221.3	250.2	272.2	281.6
170.0	199.4	197.4	200.1	217.9	239.1	255.8	262.2
172.5	200.8	199.0	201.7	214.6	229.2	240.6	244.5
175.0	201.9	200.3	202.9	211.4	220.4	227.4	230.1
177.5	202.8	201.1	203.7	207.8	212.6	216.0	217.9
180.0	204.6	204.6	204.6	204.6	204.6	204.6	204.6

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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	163.14	N.A.	4.60
0-30	361.98	N.A.	10.20
0-40	623.87	N.A.	17.60
0-60	1249.43	N.A.	35.20
0-80	1839.59	N.A.	51.90
0-90	2079.15	N.A.	58.60
10-90	2038.4	N.A.	57.50
20-40	460.73	N.A.	13.00
20-50	764.92	N.A.	21.60
40-70	936.66	N.A.	26.40
60-80	590.15	N.A.	16.60
70-80	279.06	N.A.	7.90
80-90	239.56	N.A.	6.80
90-110	472.55	N.A.	13.30
90-120	703.84	N.A.	19.90
90-130	922.17	N.A.	26.00
90-150	1270.4	N.A.	35.80
90-180	1466.07	N.A.	41.40
110-180	993.52	N.A.	28.00
0-180	3545.22	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	40.75
10-20	122.39
20-30	198.84
30-40	261.89
40-50	304.19
50-60	321.38
60-70	311.09
70-80	279.06
80-90	239.56
90-100	234.65
100-110	237.90
110-120	231.29
120-130	218.34
130-140	192.67
140-150	155.55
150-160	111.07
160-170	64.27
170-180	20.35

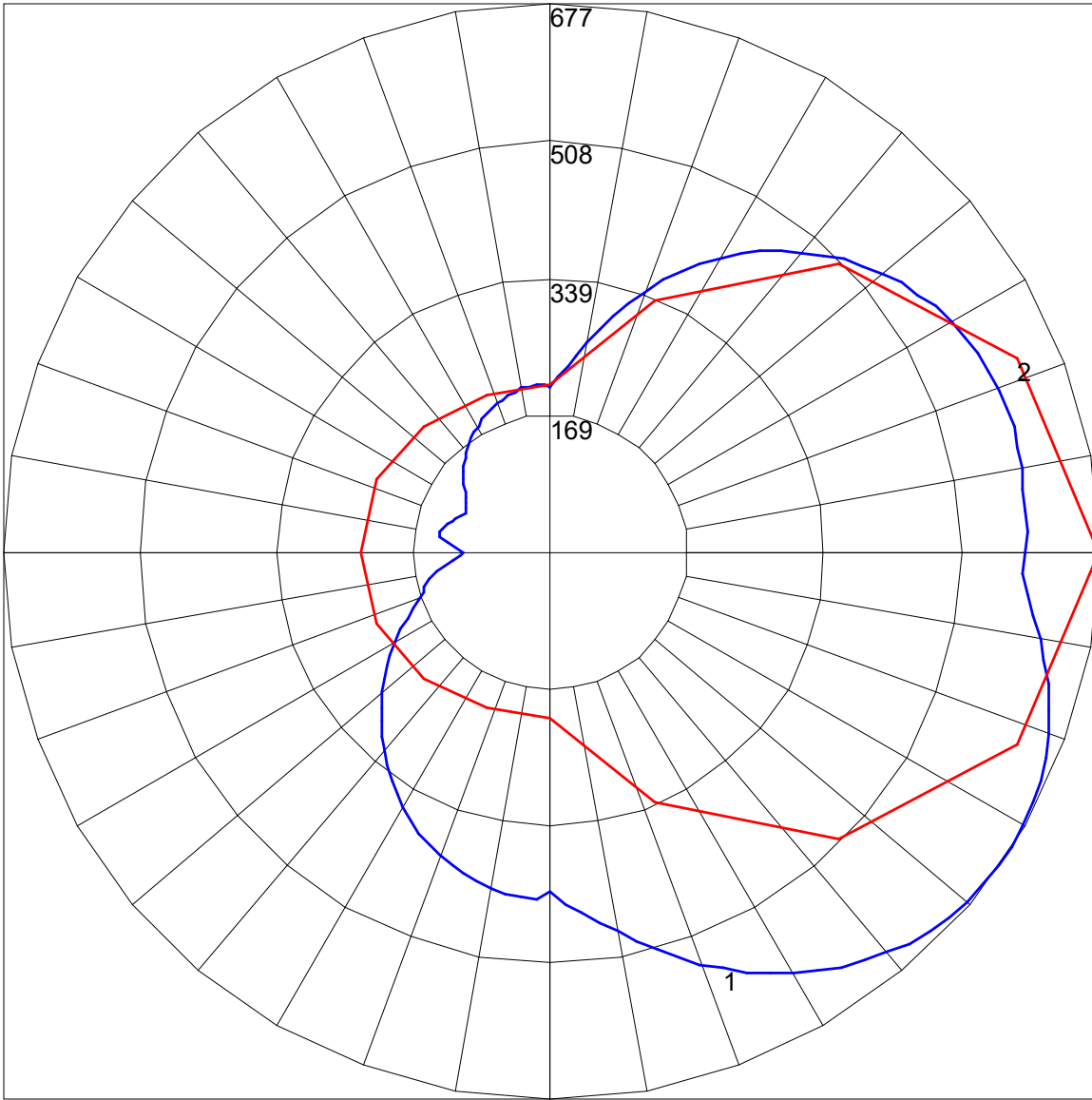
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59
1	96	91	86	81	89	84	80	76	73	69	66	62	59	56	52	50	48	43
2	87	77	70	64	80	72	65	60	62	56	52	52	48	45	43	40	38	33
3	78	67	58	51	72	62	55	48	53	47	42	45	40	36	38	34	31	27
4	71	59	50	43	66	55	46	40	47	40	35	40	34	30	33	29	26	22
5	65	52	43	36	60	48	40	34	41	35	30	35	30	26	29	25	22	18
6	60	46	37	31	55	43	35	29	37	30	26	32	26	22	26	22	19	16
7	55	42	33	27	51	39	31	25	33	27	22	29	23	19	24	20	16	14
8	51	38	29	23	47	35	27	22	30	24	19	26	21	17	22	18	14	12
9	47	34	26	21	44	32	25	19	28	22	17	24	19	15	20	16	13	11
10	44	31	24	18	41	29	22	17	26	20	15	22	17	13	19	15	12	10

POLAR GRAPH



Maximum Candela = 677.4 Located At Horizontal Angle = 0, Vertical Angle = 57.5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (57.5) (Through Max. Cd.)