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Report No: L041608812

Date: 5/20/2016



NVLAP LAB CODE 200927-0

Report No: L041608812

Prepared For: Number Eight Lighting Company
 526 Portal Street, Cotati, CA 94931

Model Number: 400-HI-15/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)

Test: Photometric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Catalog number is 400-HI-15/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB). Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 5/9/16

Date of Tests: 5/17/16 - 5/17/16

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Number Eight Lighting Company
Model Number:	400-HI-15/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
Driver Model Number:	INTUITIVE SYSTEMS ISD-601-1050-15-D
Total Lumens:	794.67
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	14.69
Input Power Factor:	0.97
Current ATHD @ 120V(%):	14%
Current ATHD @ 277V(%):	N/A
Efficacy:	54
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:45
Off State Power(W):	0.00

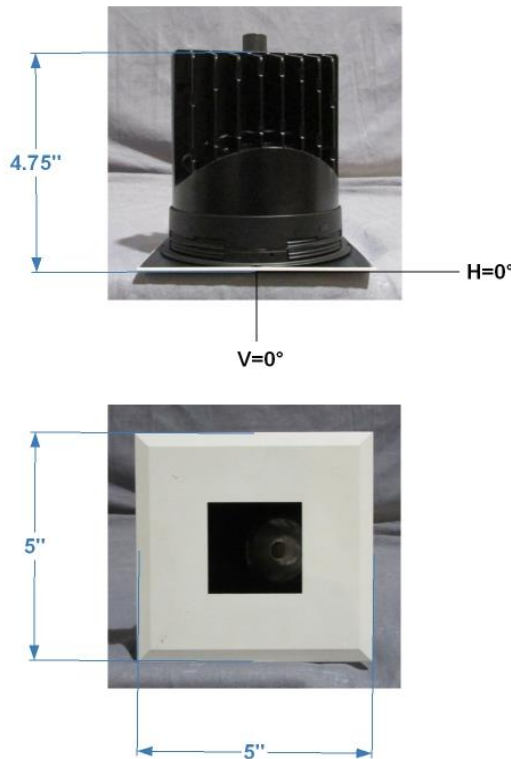


FIG.1 LUMINAIRE

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Dennis Malonzo

Test Report Released by:



Jeff Ahn
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 11*



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608812.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L41608812
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUE DATE] 05/20/2016
 [MANUFAC] Number Eight Lighting Company
 [LUMCAT] 400-HI-15/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
 [LUMINAIRE] 5"L. X 5"W. LED Recessed Adjustable Downlight, 90+ CRI, 15° Beam Spread,
 [MORE] 35° Aiming Angle, 2"x2" Aperture Trim LUMINAIRE
 [BALLASTCAT]
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 14.69
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	795
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	54
Total Luminaire Watts	14.69
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.18
Spacing Criterion (90-270)	0.72
Spacing Criterion (Diagonal)	1.40
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.17 ft
Luminous Width (90-270)	0.17 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	526	1052	2894
55	649	1297	2271
65	880	1761	2641
75	1438	2875	4313
85	4269	8539	12808

CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	77	77	77	77	77	77	77	77	77	77
2	59	59	59	60	60	61	62	63	64	65
4	45	46	46	46	47	48	49	51	52	54
6	34	34	35	35	36	37	39	40	42	44
8	26	26	26	27	28	29	30	32	34	36
10	19	19	19	20	20	21	23	24	26	29
12	13	13	13	14	14	15	17	19	20	23
14	9	9	10	10	11	11	13	14	16	18
16	7	7	7	7	8	9	10	11	12	14
18	5	5	5	6	6	7	7	8	10	11
20	4	4	4	5	5	5	6	7	8	9
22	4	4	4	4	4	4	5	5	6	7
24	3	3	3	3	3	4	4	5	5	6
26	3	3	3	3	3	3	3	4	4	5
28	3	3	3	3	3	3	3	3	4	4
30	2	2	2	2	2	3	3	3	3	4
32	2	2	2	2	2	2	3	3	3	4
34	2	2	2	2	2	2	2	3	3	3
35	2	2	2	2	2	2	2	3	3	3
36	2	2	2	2	2	2	2	2	3	3
38	1	1	1	1	2	2	2	2	3	3
40	1	1	1	1	1	1	2	2	2	3
42	1	1	1	1	1	1	1	2	2	3
44	1	1	1	1	1	1	1	1	2	2
46	1	1	1	1	1	1	1	1	2	2
48	1	1	1	1	1	1	1	1	1	2
50	1	1	1	1	1	1	1	1	1	2
52	1	1	1	1	1	1	1	1	1	2
54	1	1	1	1	1	1	1	1	1	2
56	1	1	1	1	1	1	1	1	2	2
58	1	1	1	1	1	1	1	1	2	2
60	1	1	1	1	1	1	1	1	2	2
62	1	1	1	1	1	1	1	1	2	2
64	1	1	1	1	1	1	1	1	2	2
66	1	1	1	1	1	1	1	1	2	2
68	1	1	1	1	1	1	1	1	2	2
70	1	1	1	1	1	1	1	1	2	2
75	1	1	1	1	1	1	1	1	2	2
80	1	1	1	1	1	1	1	1	2	2
85	1	1	1	1	1	1	1	1	1	2
90	0	0	0	0	0	0	0	0	0	0

Vert. Horizontal Angles

Angles	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0	77	77	77	77	77	77	77	77	77	77
2	66	67	68	70	71	72	74	75	77	79
4	56	57	60	62	64	67	70	72	76	79
6	46	49	51	54	57	61	65	69	74	79
8	38	41	44	47	51	55	60	65	70	77
10	31	34	38	41	45	49	55	61	67	75
12	25	28	32	35	40	44	49	55	63	72
14	20	23	26	30	35	39	45	51	58	67
16	17	19	22	26	31	35	41	47	54	63

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PHOTOMETRIC FILENAME : L041608812.IES

CANDELA TABULATION - (Cont.)

18	13	17	19	23	26	31	36	42	49	59
20	11	13	17	19	23	28	33	38	45	54
22	9	11	13	17	20	25	29	34	41	49
24	7	9	11	14	18	21	26	31	37	44
26	6	8	10	12	17	19	23	27	33	40
28	5	7	8	10	13	17	21	25	29	36
30	5	6	7	9	12	15	18	21	25	31
32	4	5	6	8	10	13	16	18	21	25
34	4	4	5	7	8	11	13	14	17	20
35	3	4	5	6	8	10	11	13	14	17
36	3	4	4	5	7	9	10	11	12	16
38	3	3	4	5	6	7	8	9	10	11
40	3	3	4	4	5	5	6	7	7	9
42	3	3	3	4	4	5	5	6	6	7
44	3	3	3	3	4	4	5	5	6	6
46	2	3	3	3	4	4	4	5	5	5
48	2	3	3	3	3	4	4	4	5	5
50	2	2	3	3	3	4	4	4	4	4
52	2	2	3	3	3	3	4	4	4	4
54	2	2	2	3	3	3	3	4	4	4
56	2	2	2	3	3	3	3	3	3	4
58	2	2	2	3	3	3	3	3	3	3
60	2	2	2	3	3	3	3	3	3	3
62	2	2	2	3	3	3	3	3	3	3
64	2	2	2	3	3	3	3	3	3	3
66	2	2	2	3	3	3	3	3	3	3
68	2	2	2	3	3	3	3	3	3	3
70	2	2	2	3	3	3	3	3	3	3
75	2	2	2	3	3	3	3	3	3	3
80	2	2	2	3	3	3	3	3	3	3
85	2	2	2	3	3	3	3	3	3	3
90	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles									
	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
0	77	77	77	77	77	77	77	77	77	77
2	80	82	83	85	87	88	89	90	92	93
4	83	86	90	93	97	100	104	107	110	112
6	84	89	95	101	107	113	119	125	131	136
8	84	92	100	108	117	127	137	146	156	166
10	84	94	105	116	128	142	156	171	187	202
12	81	93	106	121	137	155	175	196	220	245
14	75	92	107	124	144	168	194	225	259	295
16	74	90	107	127	151	180	213	255	302	358
18	71	86	105	127	168	192	234	283	350	432
20	66	77	99	124	168	196	249	317	400	500
22	60	73	95	120	167	202	262	337	445	577
24	55	69	90	115	165	200	264	348	475	637
26	50	64	76	106	160	188	256	357	491	667
28	44	56	72	96	129	179	249	343	491	698
30	38	49	64	79	119	168	228	327	475	681
32	31	40	54	73	104	163	211	297	449	668
34	25	32	43	61	80	142	186	274	415	616
35	22	28	38	55	75	119	178	259	393	604
36	19	24	34	48	71	109	172	238	370	575

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PHOTOMETRIC FILENAME : L041608812.IES**

CANDELA TABULATION - (Cont.)

38	14	18	25	37	57	79	161	211	327	509
40	10	13	18	27	42	69	113	179	281	452
42	8	10	13	20	31	52	78	161	231	380
44	7	8	10	16	22	37	64	111	189	302
46	6	7	8	11	17	26	48	75	166	242
48	5	6	6	8	11	18	33	62	112	181
50	5	5	5	6	8	15	23	42	74	161
52	4	4	5	5	7	9	17	28	56	87
54	4	4	4	4	5	7	11	18	35	67
56	4	4	4	4	4	5	7	13	22	41
58	3	4	4	4	4	4	5	8	16	23
60	3	3	3	3	3	3	4	5	8	14
62	3	3	3	3	3	3	3	4	5	8
64	3	3	3	3	3	3	3	3	4	5
66	3	3	3	2	2	2	2	2	3	3
68	3	3	3	2	2	2	2	2	2	2
70	3	3	3	2	2	2	2	2	2	2
75	3	3	3	2	2	2	2	1	1	1
80	3	3	3	2	2	2	2	1	1	1
85	3	3	3	2	2	2	2	1	1	1
90	0	0	0	0	0	0	0	0	0	0

Vert. Horizontal Angles

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0	77	77	77	77	77	77	77
2	93	94	94	95	95	95	95
4	115	117	119	120	121	122	122
6	141	146	150	153	155	156	157
8	174	182	190	197	201	204	206
10	218	234	247	259	268	274	275
12	271	299	325	346	363	372	375
14	338	381	426	463	491	509	516
16	423	486	553	606	648	677	687
18	519	609	698	784	842	884	899
20	620	736	877	997	1094	1152	1172
22	720	904	1089	1269	1405	1502	1535
24	769	1049	1309	1565	1796	1964	2023
26	912	1194	1506	1886	2263	2546	2649
28	954	1291	1723	2213	2745	3203	3384
30	991	1378	1845	2494	3266	3929	4182
32	1133	1367	1936	2683	3604	4463	4827
34	828	1344	1878	2713	3771	4713	5082
35	811	1285	1867	2673	3730	4675	5041
36	789	1239	1808	2637	3569	4497	4894
38	745	1158	1636	2369	3252	4002	4346
40	687	1025	1493	2114	2744	3357	3610
42	576	805	1288	1788	2270	2708	2882
44	486	734	1062	1461	1857	2130	2242
46	384	599	794	1197	1467	1660	1722
48	308	486	683	931	1140	1266	1293
50	223	355	520	688	1006	897	917
52	156	251	365	484	588	660	686
54	108	160	234	322	405	480	509
56	70	114	141	189	247	300	325
58	40	62	83	109	133	149	156

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608812.IES

CANDELA TABULATION - (Cont.)

60	22	34	46	54	59	62	62
62	12	17	21	25	29	31	31
64	7	9	11	13	14	16	16
66	4	5	5	6	7	8	8
68	2	3	3	3	4	4	4
70	2	2	2	2	2	2	2
75	1	1	1	1	1	1	1
80	1	1	1	0	0	0	0
85	1	1	1	0	0	0	0
90	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608812.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	55.78	N.A.	7.00
0-30	230.83	N.A.	29.00
0-40	549.54	N.A.	69.20
0-60	786.99	N.A.	99.00
0-80	793.29	N.A.	99.80
0-90	794.67	N.A.	100.00
10-90	786.18	N.A.	98.90
20-40	493.76	N.A.	62.10
20-50	682.96	N.A.	85.90
40-70	241.79	N.A.	30.40
60-80	6.29	N.A.	0.80
70-80	1.95	N.A.	0.20
80-90	1.38	N.A.	0.20
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	794.67	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	8.49
10-20	47.30
20-30	175.04
30-40	318.72
40-50	189.20
50-60	48.25
60-70	4.34
70-80	1.95
80-90	1.38
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

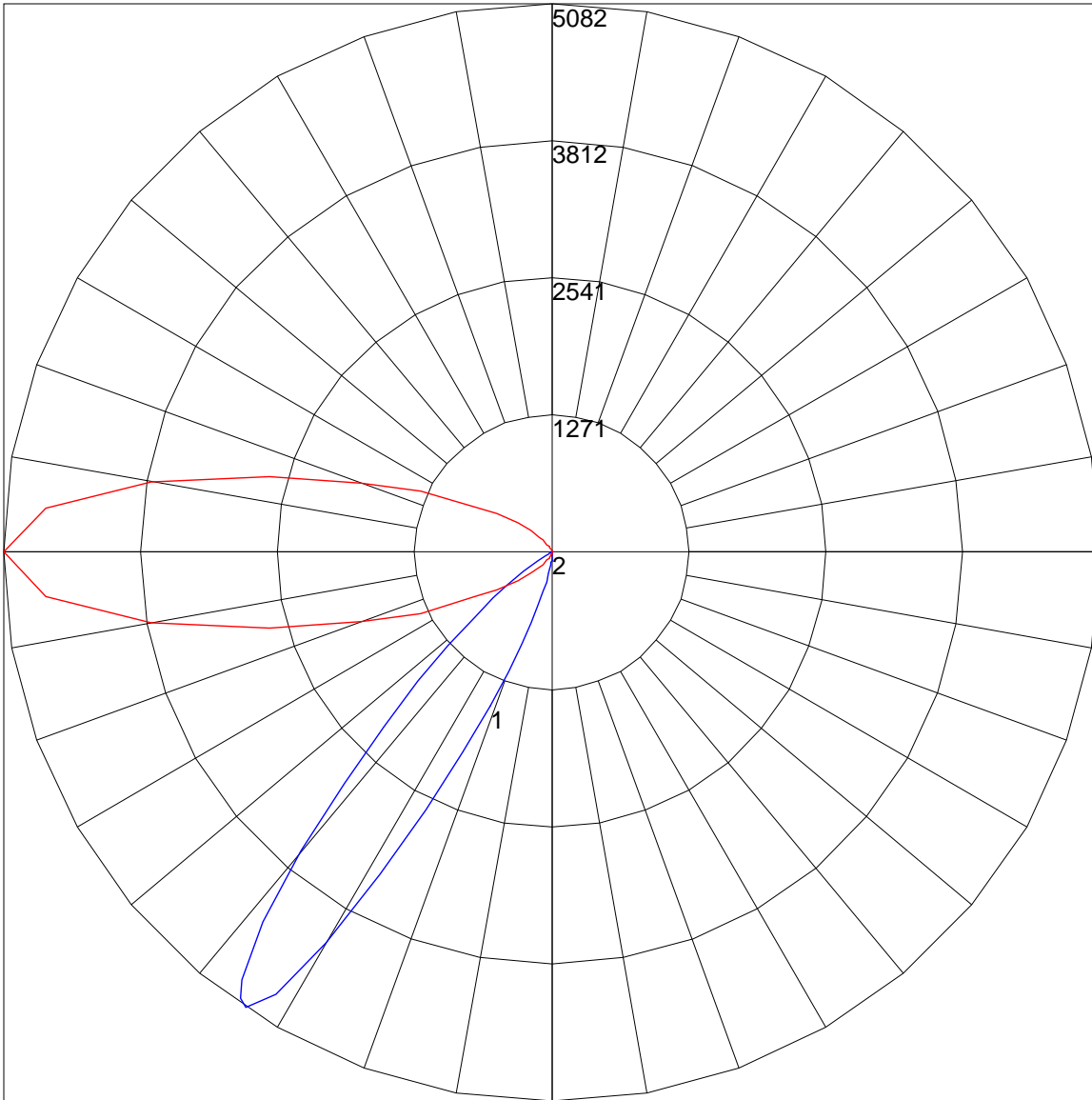
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608812.IES

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	104	98	92	88	102	96	91	87	93	89	85	89	86	83	87	84	81	80
3	96	88	82	76	94	87	81	76	84	79	74	81	77	73	79	75	72	70
4	89	79	72	66	87	78	71	66	76	70	65	74	68	64	72	67	64	62
5	83	72	64	58	81	70	63	58	68	62	57	67	61	57	65	60	56	54
6	76	65	57	51	75	64	56	51	62	55	50	60	55	50	59	54	50	48
7	71	58	51	45	69	58	50	45	56	49	45	55	49	44	54	48	44	42
8	66	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37
9	61	48	41	35	59	48	40	35	47	40	35	46	39	35	45	39	35	33
10	57	44	37	32	55	44	36	31	43	36	31	42	36	31	41	35	31	29

POLAR GRAPH



Maximum Candela = 5082 Located At Horizontal Angle = 180, Vertical Angle = 34
1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (34) (Through Max. Cd.)