

MOLO DESIGN, LTD

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

CLD·PEN·SM·WW, CLD·PEN·SM·NW, CLD·PEN·MD·WW,
CLD·PEN·MD·NW, CLD·PEN·LG·WW, CLD·PEN·LG·NW,
CLD·PEN·XL·WW, CLD·PEN·XL·NW

PROJECT NUMBER

G104747938

REPORT NUMBER

104747938CRT-001

ISSUE DATE

7/19/2021

REVISED DATE

None

TEST DATES

July 12, 2021 through July 14, 2021

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

© 2017 INTERTEK



REPORT NUMBER

104747938CRT-001

MODEL NUMBER(s)

CLD·PEN·SM·WW, CLD·PEN·SM·NW, CLD·PEN·MD·WW, CLD·PEN·MD·NW, CLD·PEN·LG·WW, CLD·PEN·LG·NW,
CLD·PEN·XL·WW, CLD·PEN·XL·NW

REPORT RENDERED TO:

MOLO DESIGN, LTD
1470 VENABLES STREET
VANCOUVER, BC V5L 2G7
CANADA

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01187780-0.

TEST STANDARDS

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

In Charge of Testing:



Gerald Gray
Associate Engineer
Lighting Division

Reviewer:



Melanie Brittain
Senior Associate Engineer
Lighting Division

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

SAMPLE INFORMATION

REPORT NO. 104747938CRT-001

ITEMS RECEIVED

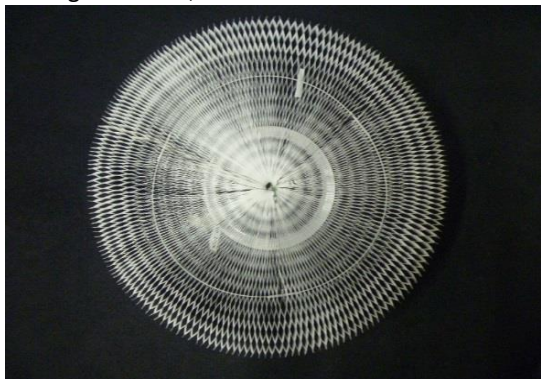
Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2107011054-001	M-CLD-PEN-XL-HW	Cloud Pendant X-Large	Production	7/1/2021
2	CRT2107011054-001A	2700K Array	LED Source	Production	7/1/2021
3	CRT2107011054-001B	4000K Array	LED Source	Production	7/1/2021
4	CRT2107011054-002	M-CLD-PEN-LG-HW	Cloud Pendant Large	Production	7/1/2021
5	CRT2107011054-002A	2700K Array	LED Source	Production	7/1/2021
6	CRT2107011054-002B	4000K Array	LED Source	Production	7/1/2021
7	CRT2107011054-003	M-CLD-PEN-MD-HW	Cloud Pendant Medium	Production	7/1/2021
8	CRT2107011054-003A	2700K Array	LED Source	Production	7/1/2021
9	CRT2107011054-003B	4000K Array	LED Source	Production	7/1/2021
10	CRT2107011054-004	M-CLD-PEN-SM-HW	Cloud Pendant Small	Production	7/1/2021
11	CRT2107011054-004A	2700K Array	LED Source	Production	7/1/2021
12	CRT2107011054-004B	4000K Array	LED Source	Production	7/1/2021
13	CRT2107011054-005	Mean Well HLG-80H-12B	Driver	Production	7/1/2021

TESTED SAMPLE CONFIGURATIONS

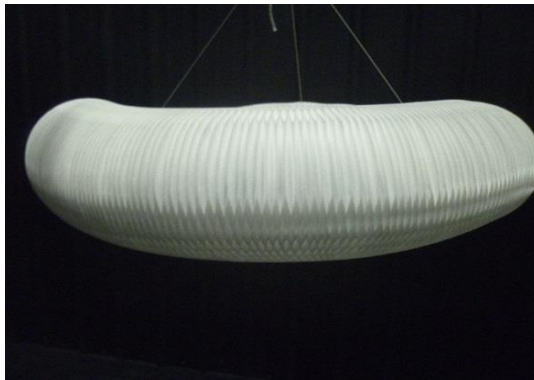
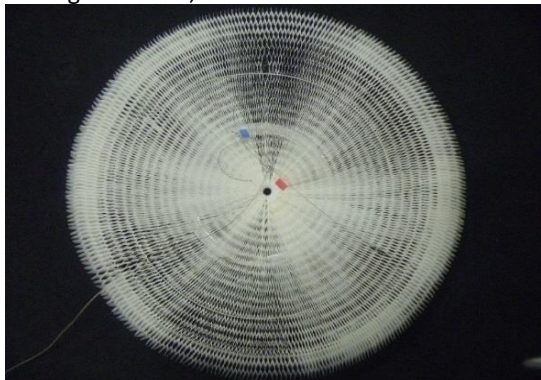
Config No.	Tested Model No.	Item Nos. Utilized
1	CLD·PEN·SM·WW	10,11,13
2	CLD·PEN·SM·NW	10,12,13
3	CLD·PEN·MD·WW	7,8,13
4	CLD·PEN·MD·NW	7,9,13
5	CLD·PEN·LG·WW	4,5,13
6	CLD·PEN·LG·NW	4,6,13
7	CLD·PEN·XL·WW	1,2,13
8	CLD·PEN·XL·NW	1,3,13

SAMPLE PHOTOS - TESTED CONFIGURATIONS

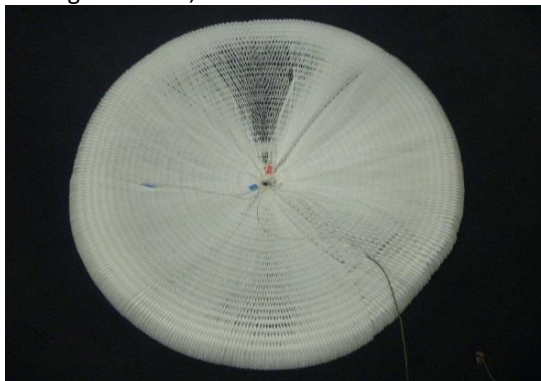
Configurations 1, 2



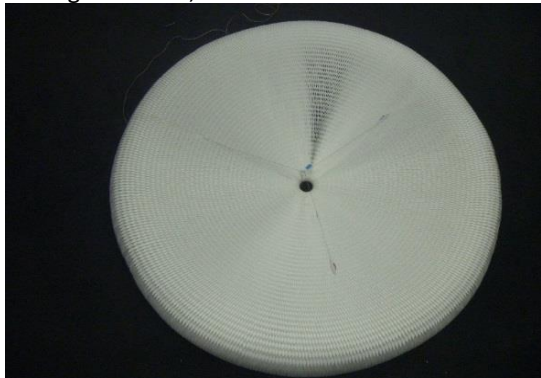
Configurations 3, 4



Configurations 5,6



Configurations 7,8



SUMMARY

REPORT NO. 104747938CRT-001

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	CLD-PEN-SM-WW
Product Description:	cloud light pendant · small · warm white (2700K)
LED Model No.:	CLD-PEN-SM-WW-2700
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	600.5
Input Power (W) @ 120 (Vac)	13.34
Lumen Efficacy (lm/W)	45.0
Input Power Factor () @ 120 (Vac)	0.507

Product Model No.:	CLD-PEN-SM-NW
Product Description:	cloud light pendant · small · neutral white (4000K)
LED Model No.:	CLD-PEN-SM-4000
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	634.7
Input Power (W) @	12.74
Lumen Efficacy (lm/W)	49.8
Input Power Factor () @ 120 (Vac)	0.502

Product Model No.:	CLD-PEN-MD-WW
Product Description:	cloud light pendant · medium · warm white (2700K)
LED Model No.:	CLD-PEN-MD-2700
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	1808.2
Input Power (W) @	34.40
Lumen Efficacy (lm/W)	52.6
Input Power Factor () @ 120 (Vac)	0.984

Product Model No.:	CLD-PEN-MD-NW
Product Description:	cloud light pendant · medium · neutral white (4000K)
LED Model No.:	CLD-PEN-MD-4000
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	1801.1
Input Power (W) @	34.56
Lumen Efficacy (lm/W)	52.1
Input Power Factor () @ 120 (Vac)	0.985

Product Model No.:	CLD-PEN-LG-WW
Product Description:	cloud light pendant · large · warm white (2700K)
LED Model No.:	CLD-PEN-LG-2700
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	2388.3
Input Power (W) @	46.49
Lumen Efficacy (lm/W)	51.4
Input Power Factor () @ 120 (Vac)	0.987

Product Model No.:	CLD·PEN·LG·NW
Product Description:	cloud light pendant · large · neutral white (4000K)
LED Model No.:	CLD·PEN·LG·4000
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	2628.8
Input Power (W) @	46.24
Lumen Efficacy (lm/W)	56.9
Input Power Factor () @ 120 (Vac)	0.987

Product Model No.:	CLD·PEN·XL·WW
Product Description:	cloud light pendant · x-large · warm white (2700K)
LED Model No.:	CLD·PEN·XL·2700
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	2861.1
Input Power (W) @	54.28
Lumen Efficacy (lm/W)	52.7
Input Power Factor () @ 120 (Vac)	0.988

Product Model No.:	CLD·PEN·XL·NW
Product Description:	cloud light pendant · x-large · neutral white (4000K)
LED Model No.:	CLD·PEN·XL·4000
Driver Model No.:	Meanwell HLG-80H-12B

Criteria	Results
Light Output (lumens)	3042.4
Input Power (W) @	52.97
Lumen Efficacy (lm/W)	57.4
Input Power Factor () @ 120 (Vac)	0.988

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with IESNA LM-79.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
1	CLD·PEN·SM·WW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

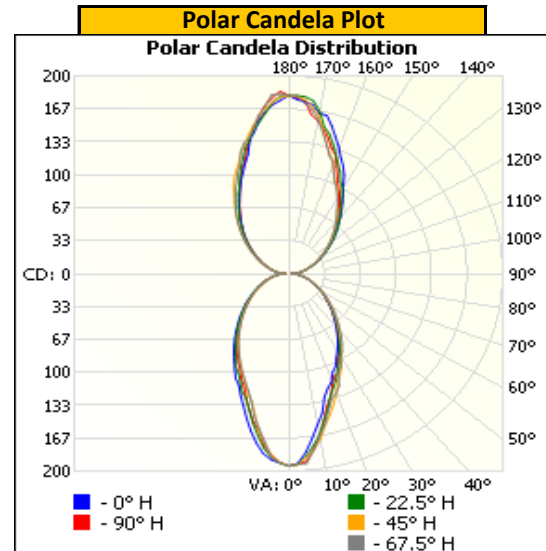
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.05	219.1	13.34	0.507

Light Output (lm)	Lumen Efficacy (lm/W)
600.5	45.0

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	195	195	195	195	195
5	182	186	187	193	191
10	155	166	170	167	167
15	129	141	148	144	139
20	117	122	130	129	119
25	104	107	113	110	110
30	91	94	99	97	93
35	80	83	85	87	81
40	69	71	73	74	70
45	59	61	62	63	60
50	50	51	52	53	50
55	42	43	43	44	42
60	34	35	35	36	35
65	28	28	29	29	28
70	22	22	23	23	22
75	17	17	17	18	17
80	12	12	12	13	12
85	8	8	8	8	8
90	3	3	3	3	2
95	8	8	7	7	8
100	13	13	12	12	12
105	17	18	17	17	17
110	23	23	22	22	22
115	30	29	28	28	29
120	37	37	35	35	36
125	45	45	43	42	43
130	54	54	51	50	52
135	65	64	60	59	62
140	75	74	69	69	71
145	88	86	80	78	82
150	102	100	91	91	95
155	120	114	102	102	108
160	136	129	121	120	128
165	155	147	136	136	142
170	165	167	162	158	157
175	175	180	177	173	176
180	180	180	180	180	180

Entire luminous intensity matrix found in .IES file



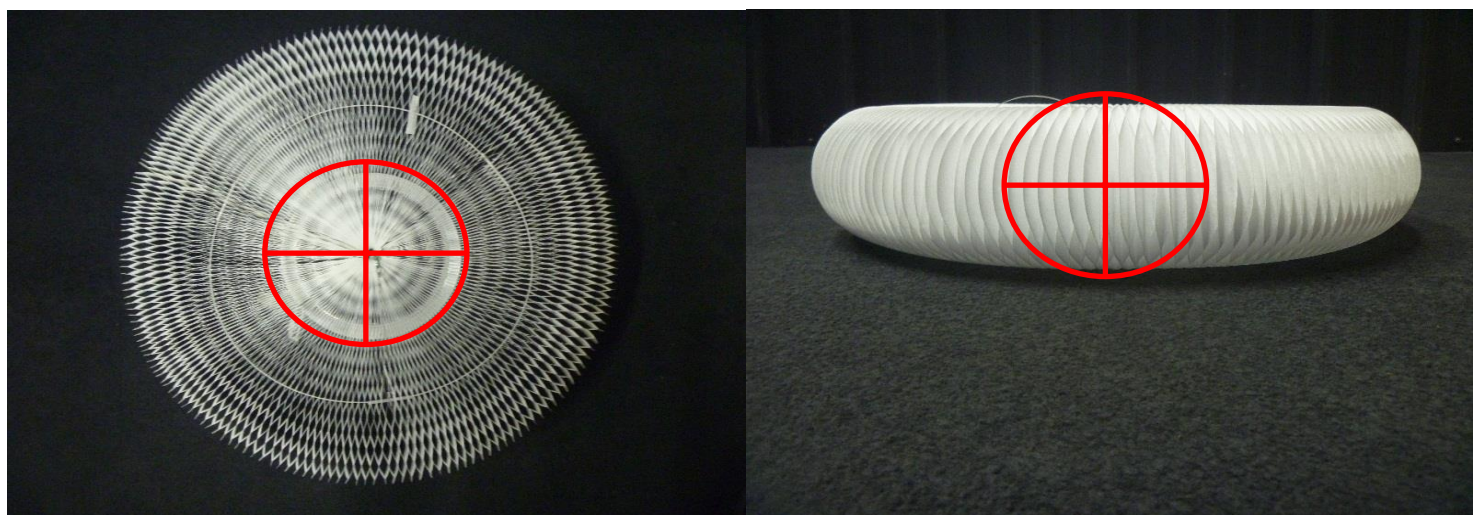
REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.79	1.79	0.42
0°-180° H	90°-270° H	0°-180° V

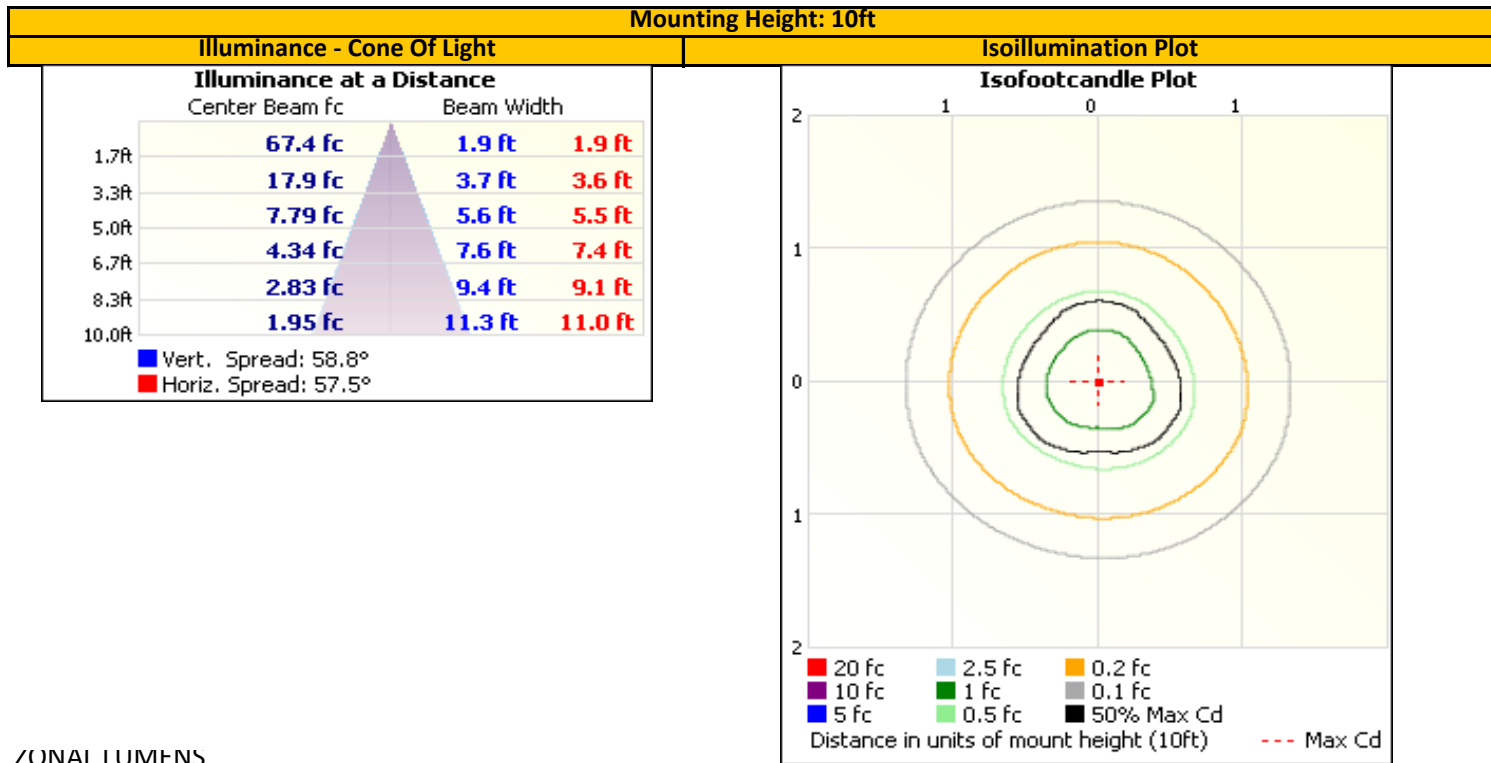
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	106.2	17.7%	0-10	17.1	2.8%
0-40	158.0	26.3%	10-20	39.5	6.6%
0-60	244.0	40.6%	20-30	49.6	8.3%
60-90	56.8	9.5%	30-40	51.8	8.6%
70-100	36.7	6.1%	40-50	47.2	7.9%
90-120	55.4	9.2%	50-60	38.8	6.5%
0-90	300.8	50.1%	60-70	28.8	4.8%
90-180	299.8	49.9%	70-80	18.8	3.1%
0-180	600.5	100.0%	80-90	9.2	1.5%
			90-100	8.6	1.4%
			100-110	18.2	3.0%
			110-120	28.5	4.8%
			120-130	39.0	6.5%
			130-140	47.5	7.9%
			140-150	51.7	8.6%
			150-160	50.1	8.3%
			160-170	39.7	6.6%
			170-180	16.3	2.7%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
2	CLD·PEN·SM·NW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

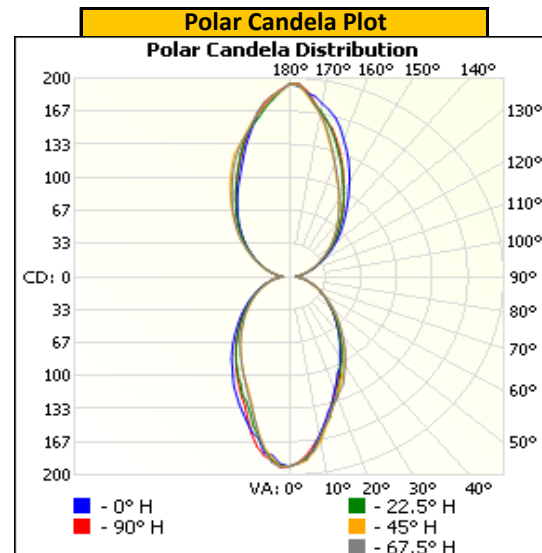
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.03	211.4	12.74	0.502

Light Output (lm)	Lumen Efficacy (lm/W)
634.7	49.8

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	191	191	191	191	191
5	185	184	186	182	181
10	162	166	169	164	163
15	141	147	146	145	145
20	123	129	130	130	124
25	107	112	115	119	110
30	94	98	103	104	96
35	82	84	90	91	84
40	71	73	76	77	72
45	61	62	65	66	62
50	52	53	54	55	52
55	44	44	45	46	44
60	36	37	37	38	36
65	30	30	30	31	30
70	24	24	24	24	24
75	18	18	18	18	18
80	13	13	13	14	13
85	9	9	9	9	9
90	6	6	6	6	6
95	9	8	8	8	8
100	13	13	12	12	12
105	18	18	17	17	18
110	24	23	22	22	23
115	31	30	28	29	30
120	39	37	35	36	38
125	48	46	43	43	46
130	59	55	51	52	55
135	70	65	60	61	65
140	82	75	70	71	76
145	96	88	80	81	88
150	113	101	93	94	101
155	130	117	106	107	118
160	148	134	123	124	136
165	166	153	143	145	155
170	177	170	166	167	168
175	186	186	184	186	188
180	194	194	194	194	194

Entire luminous intensity matrix found in .IES file



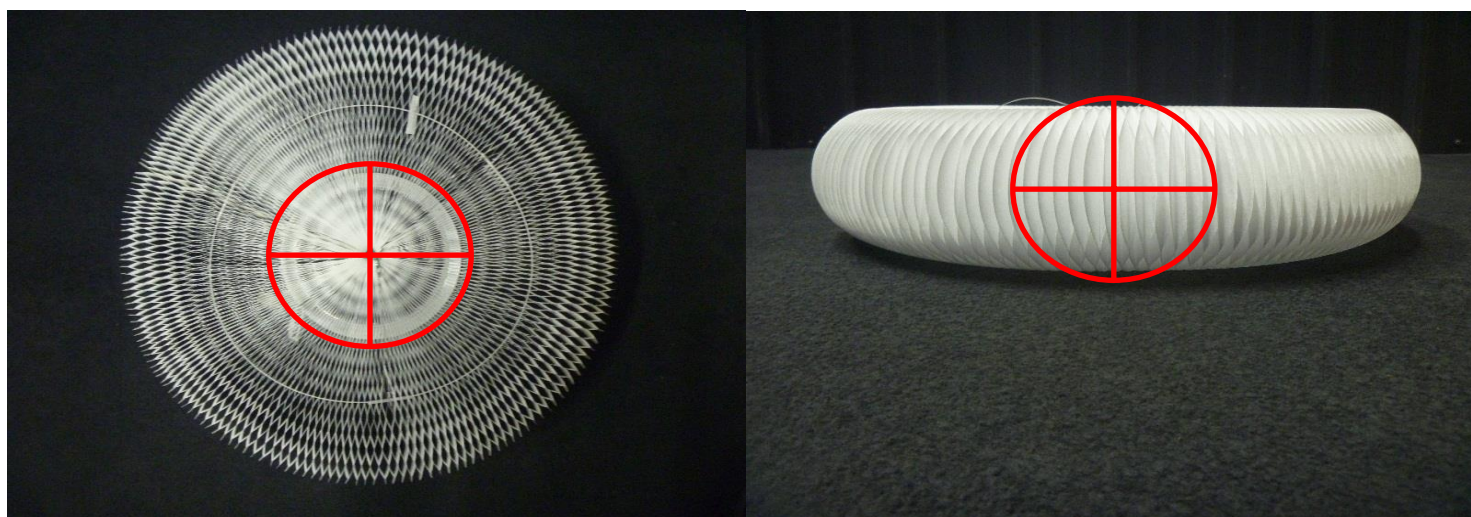
REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
1.79	1.79	0.42
0°-180° H	90°-270° H	0°-180° V

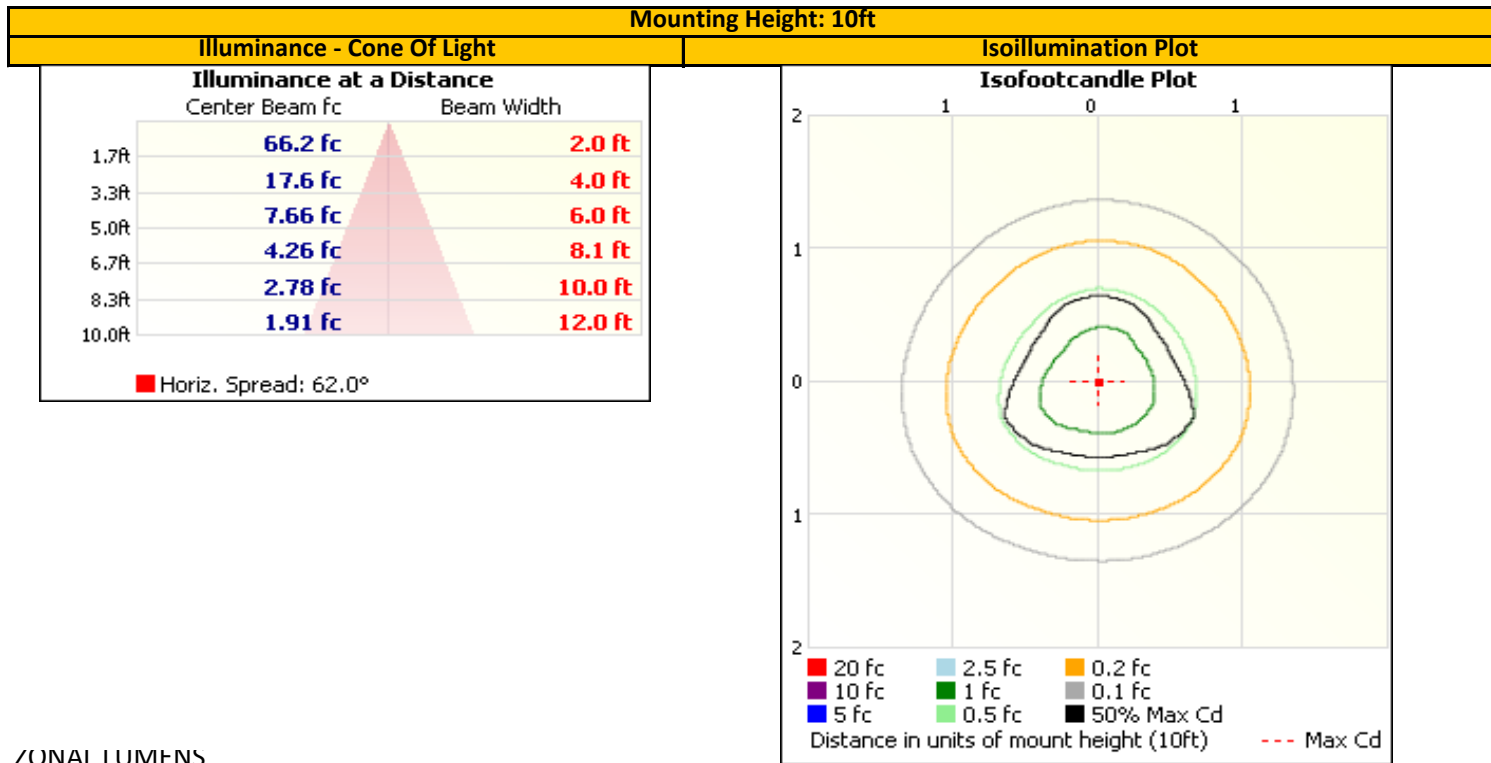
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	109.8	17.3%	0-10	17.0	2.7%
0-40	163.8	25.8%	10-20	40.9	6.4%
0-60	253.3	39.9%	20-30	51.9	8.2%
60-90	60.3	9.5%	30-40	54.0	8.5%
70-100	39.7	6.3%	40-50	49.0	7.7%
90-120	59.2	9.3%	50-60	40.5	6.4%
0-90	313.6	49.4%	60-70	30.3	4.8%
90-180	321.1	50.6%	70-80	19.9	3.1%
0-180	634.7	100.0%	80-90	10.1	1.6%
			90-100	9.7	1.5%
			100-110	19.2	3.0%
			110-120	30.3	4.8%
			120-130	41.7	6.6%
			130-140	50.9	8.0%
			140-150	55.6	8.8%
			150-160	54.0	8.5%
			160-170	42.7	6.7%
			170-180	17.1	2.7%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
3	CLD-PEN-MD-WW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

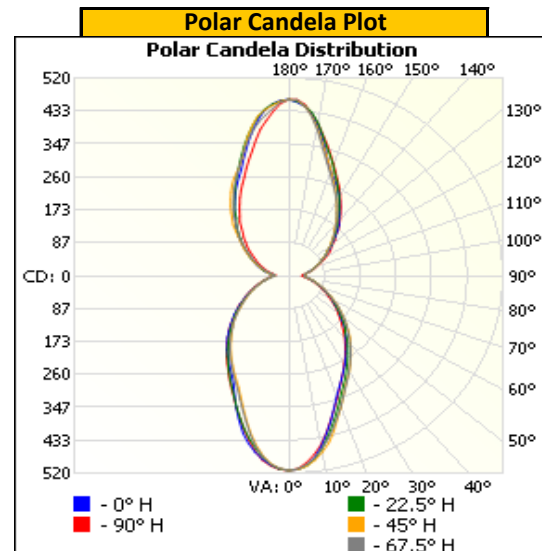
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.05	291.1	34.40	0.984

Light Output (lm)	Lumen Efficacy (lm/W)
1808.2	52.6

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	512	512	512	512	512
5	501	502	503	499	494
10	456	464	471	463	452
15	395	408	423	416	393
20	340	357	370	368	344
25	302	316	324	326	303
30	271	281	293	292	269
35	243	250	263	262	239
40	216	220	233	232	211
45	192	194	204	202	182
50	164	165	176	176	158
55	139	142	149	150	136
60	121	122	124	123	112
65	100	100	102	102	95
70	82	82	85	84	77
75	67	67	69	68	62
80	54	54	54	53	49
85	42	42	43	42	39
90	39	38	38	37	32
95	41	39	40	38	37
100	46	47	47	46	48
105	57	59	59	59	62
110	69	70	71	72	75
115	83	84	84	86	90
120	103	102	99	102	108
125	121	115	115	118	125
130	140	136	134	139	146
135	166	161	155	157	170
140	188	186	178	181	194
145	216	213	204	204	221
150	244	244	232	232	249
155	270	276	263	259	280
160	296	313	297	290	315
165	344	354	341	333	359
170	404	409	397	393	407
175	447	449	448	448	452
180	464	464	464	464	464

Entire luminous intensity matrix found in .IES file



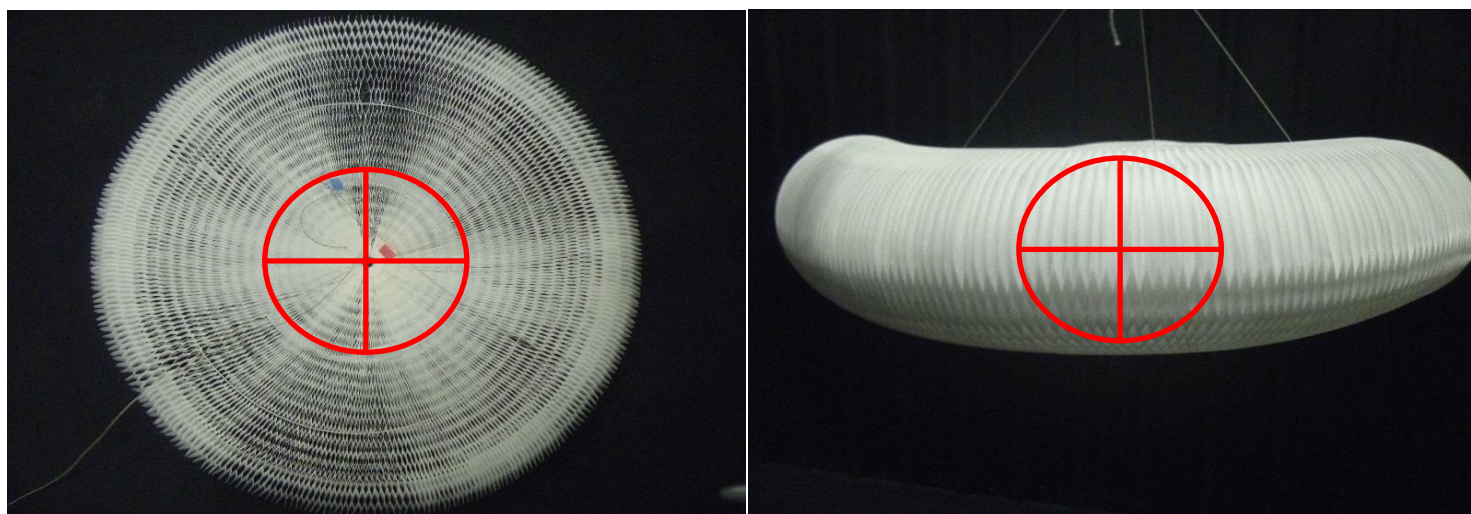
REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
2.83	2.83	0.63
0°-180° H	90°-270° H	0°-180° V

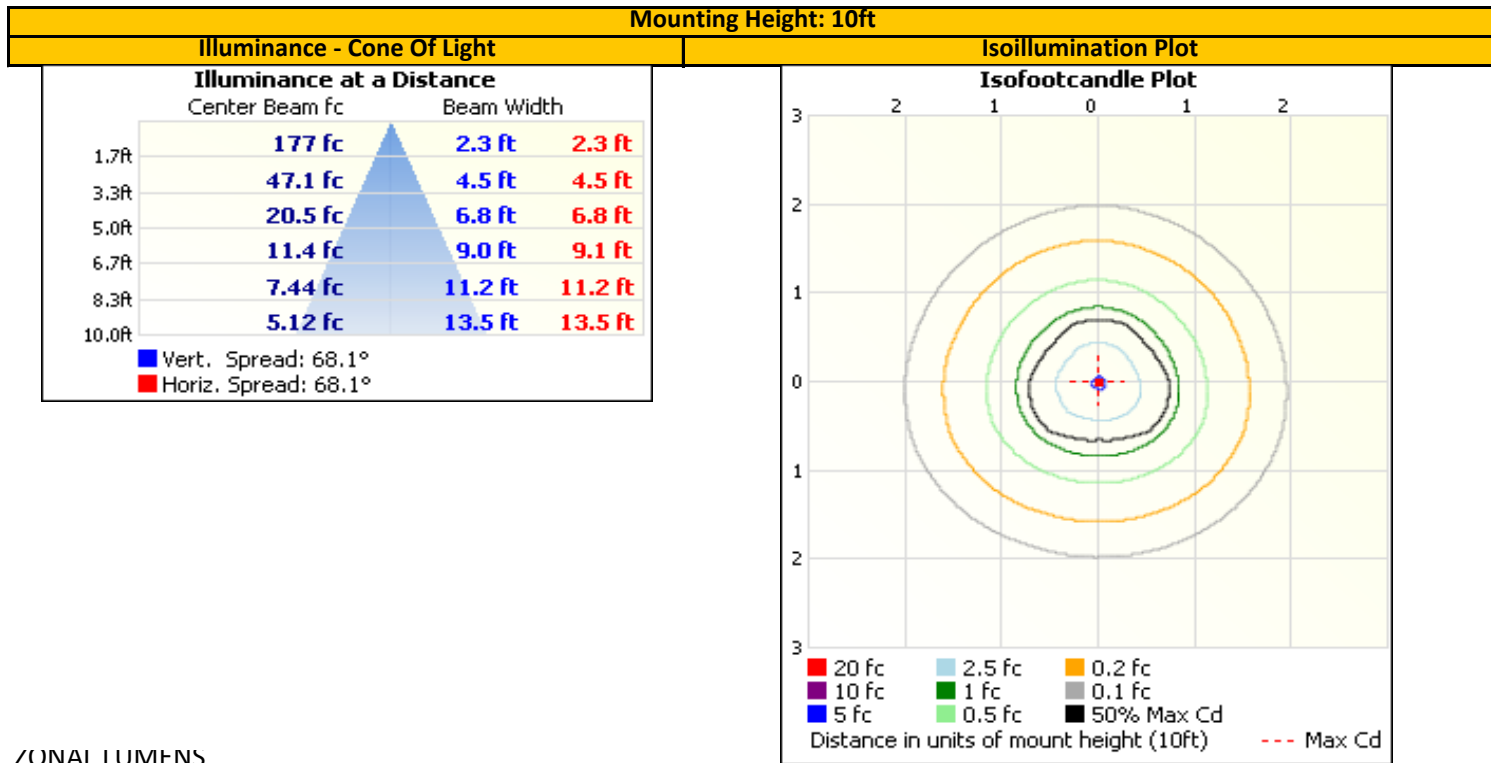
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary										
Zone	Zone	Lumens	Luminaire	Zone	Zone	Lumens	Total	Zone	Lumens	Total
	0-30	304.8	16.9%		0-10	46.3	2.6%	90-100	43.6	2.4%
	0-40	461.9	25.5%		10-20	114.0	6.3%	100-110	64.9	3.6%
	0-60	742.5	41.1%		20-30	144.5	8.0%	110-120	88.5	4.9%
	60-90	219.2	12.1%		30-40	157.1	8.7%	120-130	111.9	6.2%
	70-100	162.0	9.0%		40-50	151.1	8.4%	130-140	130.1	7.2%
	90-120	197.0	10.9%		50-60	129.5	7.2%	140-150	137.7	7.6%
	0-90	961.7	53.2%		60-70	100.8	5.6%	150-160	128.4	7.1%
	90-180	846.5	46.8%		70-80	71.5	4.0%	160-170	100.1	5.5%
	0-180	1,808.2	100.0%		80-90	46.9	2.6%	170-180	41.3	2.3%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
4	CLD·PEN·MD·NW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

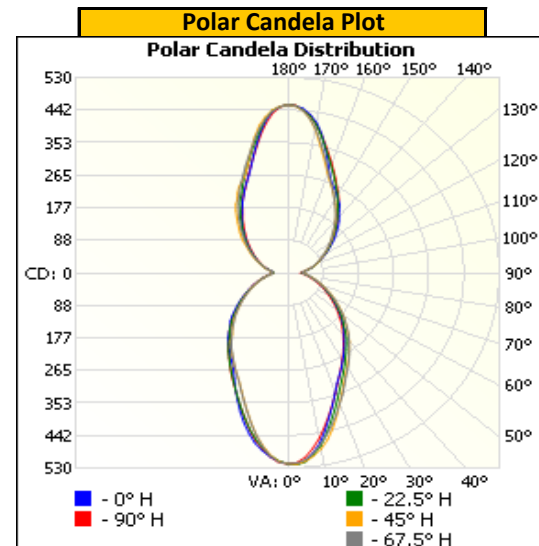
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.04	292.4	34.56	0.985

Light Output (lm)	Lumen Efficacy (lm/W)
1801.1	52.1

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	518	518	518	518	518
5	513	514	513	508	503
10	468	477	485	473	456
15	403	418	436	427	400
20	347	365	379	379	348
25	306	321	332	337	307
30	275	286	298	300	274
35	247	255	268	269	243
40	220	228	240	239	216
45	195	197	209	211	190
50	170	173	183	183	164
55	145	149	155	154	140
60	124	126	131	131	118
65	104	105	108	108	99
70	86	87	89	88	81
75	70	71	72	71	66
80	57	57	58	57	52
85	45	45	46	45	42
90	37	36	38	36	33
95	40	40	41	39	39
100	52	52	50	50	52
105	66	67	66	64	65
110	79	80	79	78	79
115	95	94	93	91	94
120	113	110	108	106	111
125	133	128	125	124	130
130	155	147	144	143	149
135	179	169	164	162	172
140	200	193	186	186	194
145	227	221	211	208	219
150	246	249	234	232	252
155	265	279	260	262	283
160	301	315	290	295	320
165	358	358	337	343	363
170	415	409	396	398	410
175	448	444	442	442	444
180	457	457	457	457	457

Entire luminous intensity matrix found in .IES file



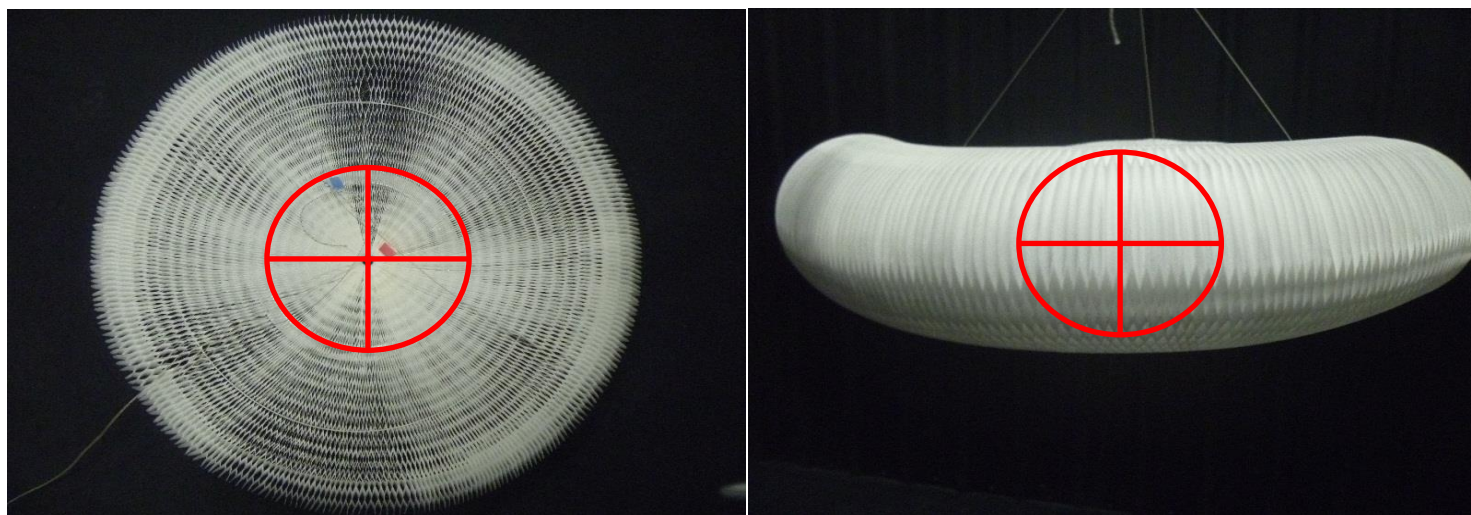
REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
2.83	2.83	0.63
0°-180° H	90°-270° H	0°-180° V

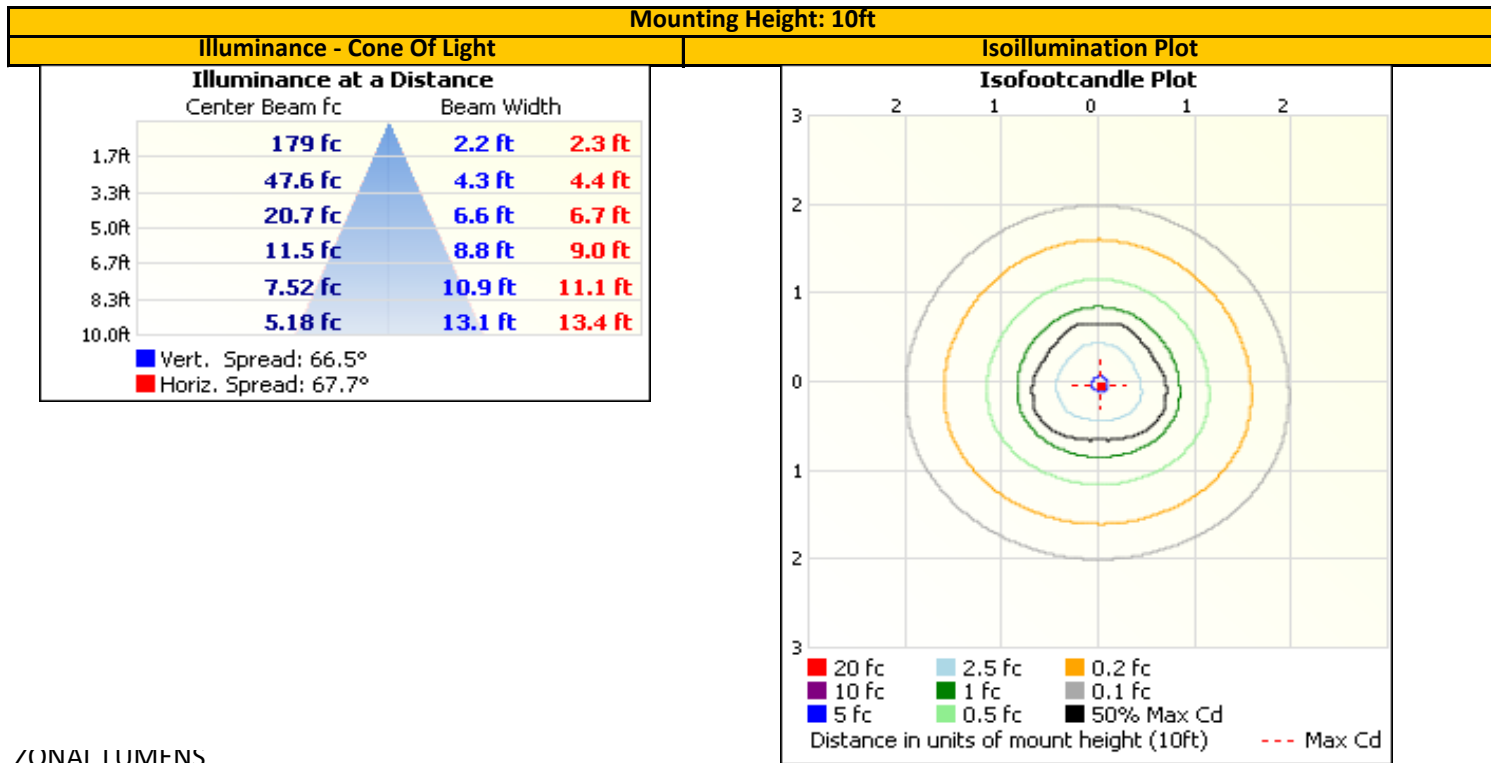
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	306.6	17.0%	0-10	46.7	2.6%
0-40	464.9	25.8%	10-20	114.4	6.4%
0-60	750.1	41.6%	20-30	145.4	8.1%
60-90	224.6	12.5%	30-40	158.4	8.8%
70-100	165.7	9.2%	40-50	153.2	8.5%
90-120	198.3	11.0%	50-60	132.0	7.3%
0-90	974.7	54.1%	60-70	102.9	5.7%
90-180	826.4	45.9%	70-80	73.3	4.1%
0-180	1,801.1	100.0%	80-90	48.3	2.7%
			90-100	44.0	2.4%
			100-110	65.7	3.6%
			110-120	88.6	4.9%
			120-130	110.2	6.1%
			130-140	126.5	7.0%
			140-150	132.3	7.3%
			150-160	122.0	6.8%
			160-170	96.5	5.4%
			170-180	40.7	2.3%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
5	CLD·PEN·LG·WW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

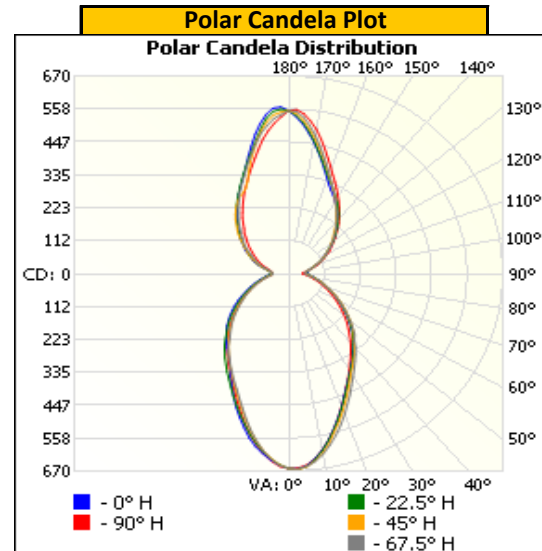
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.00	392.4	46.49	0.987

Light Output (lm)	Lumen Efficacy (lm/W)
2388.3	51.4

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	661	661	661	661	661
5	654	656	657	656	651
10	607	608	616	622	606
15	544	547	553	568	545
20	483	484	495	510	481
25	426	429	438	453	424
30	385	385	389	403	379
35	348	349	354	362	337
40	315	314	320	326	300
45	282	281	288	292	264
50	246	247	254	253	230
55	212	212	218	215	196
60	181	181	185	182	166
65	152	151	153	150	137
70	126	126	126	123	112
75	104	103	103	99	91
80	84	83	82	78	72
85	68	66	65	62	56
90	60	57	54	51	43
95	58	56	55	52	48
100	62	62	61	60	60
105	74	75	74	75	81
110	92	94	93	97	101
115	115	118	115	117	121
120	134	135	135	137	146
125	160	157	158	159	166
130	185	185	179	181	190
135	209	212	201	206	218
140	237	241	230	234	245
145	263	269	259	261	275
150	288	296	290	293	308
155	312	324	324	324	342
160	348	356	364	366	384
165	398	401	412	417	438
170	453	457	467	477	497
175	509	515	523	533	544
180	553	553	553	553	553

Entire luminous intensity matrix found in .IES file



REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
3.92	3.92	0.83
0°-180° H	90°-270° H	0°-180° V

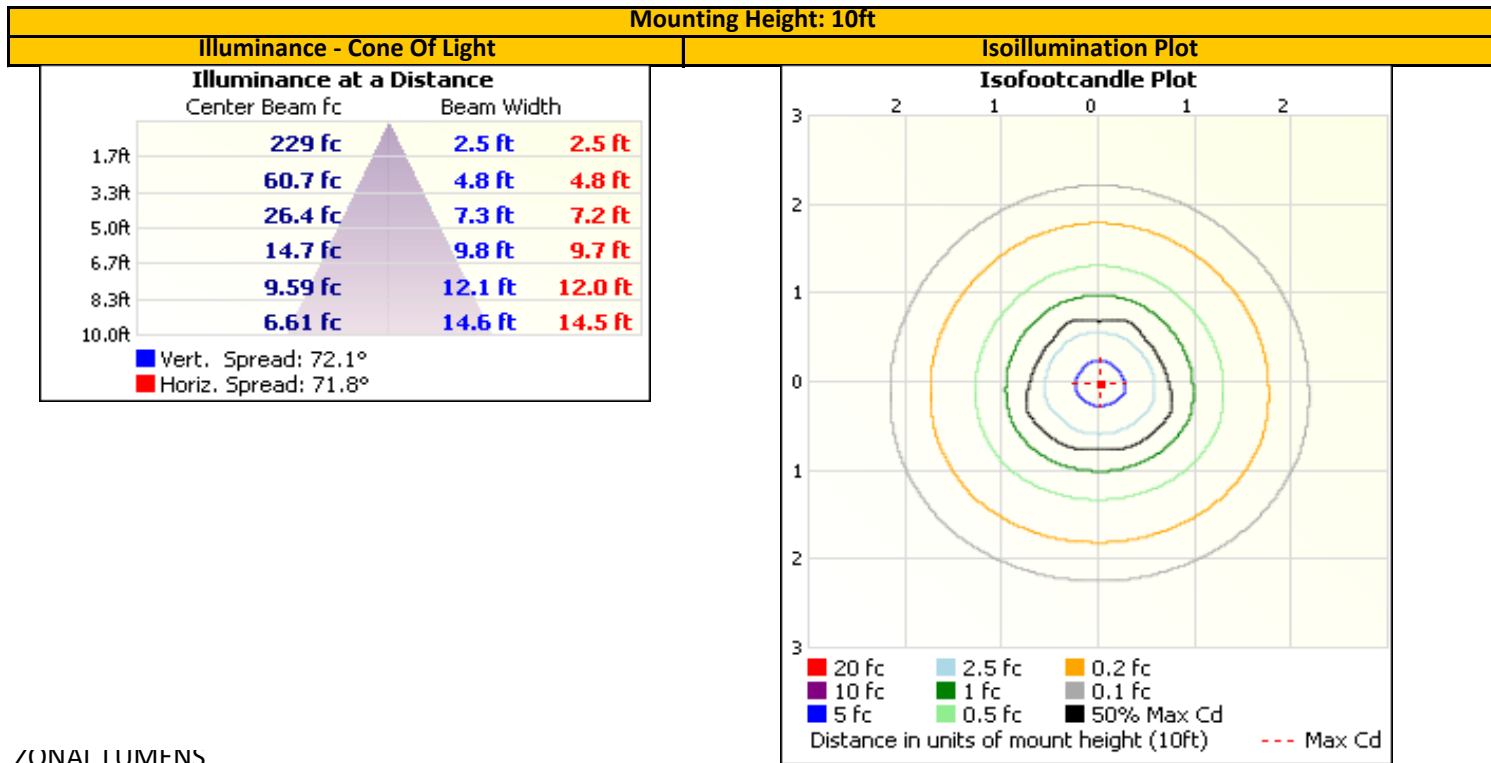
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	405.1	17.0%	0-10	59.8	2.5%
0-40	618.8	25.9%	10-20	150.2	6.3%
0-60	1,012.9	42.4%	20-30	195.1	8.2%
60-90	314.5	13.2%	30-40	213.6	8.9%
70-100	231.2	9.7%	40-50	210.3	8.8%
90-120	262.5	11.0%	50-60	183.9	7.7%
0-90	1,327.4	55.6%	60-70	143.9	6.0%
90-180	1,060.9	44.4%	70-80	102.6	4.3%
0-180	2,388.3	100.0%	80-90	68.0	2.8%
			90-100	60.6	2.5%
			100-110	84.3	3.5%
			110-120	117.7	4.9%
			120-130	145.3	6.1%
			130-140	164.1	6.9%
			140-150	168.2	7.0%
			150-160	152.8	6.4%
			160-170	118.8	5.0%
			170-180	49.1	2.1%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
6	CLD·PEN·LG·NW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

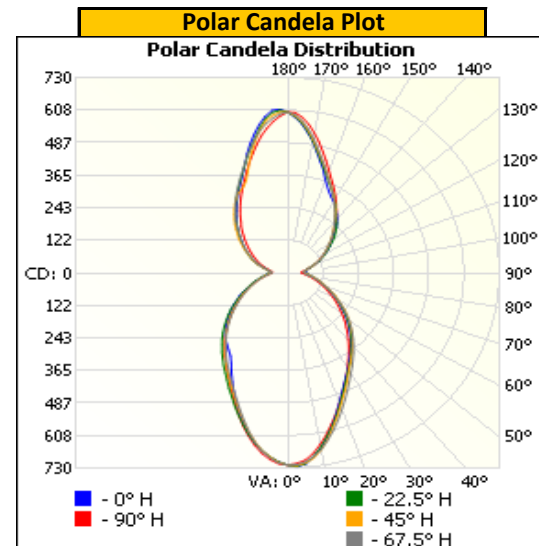
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.00	390.3	46.24	0.987

Light Output (lm)	Lumen Efficacy (lm/W)
2628.8	56.9

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	718	718	718	718	718
5	717	716	713	709	703
10	663	661	671	671	650
15	593	593	599	609	584
20	519	525	531	546	520
25	460	466	473	487	461
30	415	418	421	435	411
35	376	380	383	393	367
40	339	343	347	353	325
45	302	306	312	315	285
50	266	269	277	276	248
55	226	232	240	236	211
60	195	196	202	198	179
65	162	164	168	165	149
70	136	136	138	134	121
75	111	111	112	108	98
80	90	90	90	86	77
85	72	72	71	68	60
90	64	62	60	58	48
95	62	60	58	56	51
100	68	67	65	64	63
105	82	82	79	79	83
110	104	104	100	101	105
115	128	130	125	125	125
120	151	152	146	146	148
125	178	179	169	169	173
130	205	211	195	196	200
135	238	238	222	223	227
140	265	262	252	251	262
145	291	289	287	283	293
150	313	321	320	318	329
155	336	352	356	355	367
160	376	389	396	395	412
165	432	438	444	448	469
170	498	500	505	512	531
175	560	562	567	571	583
180	601	601	601	601	601

Entire luminous intensity matrix found in .IES file



REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
3.92	3.92	0.83
0°-180° H	90°-270° H	0°-180° V

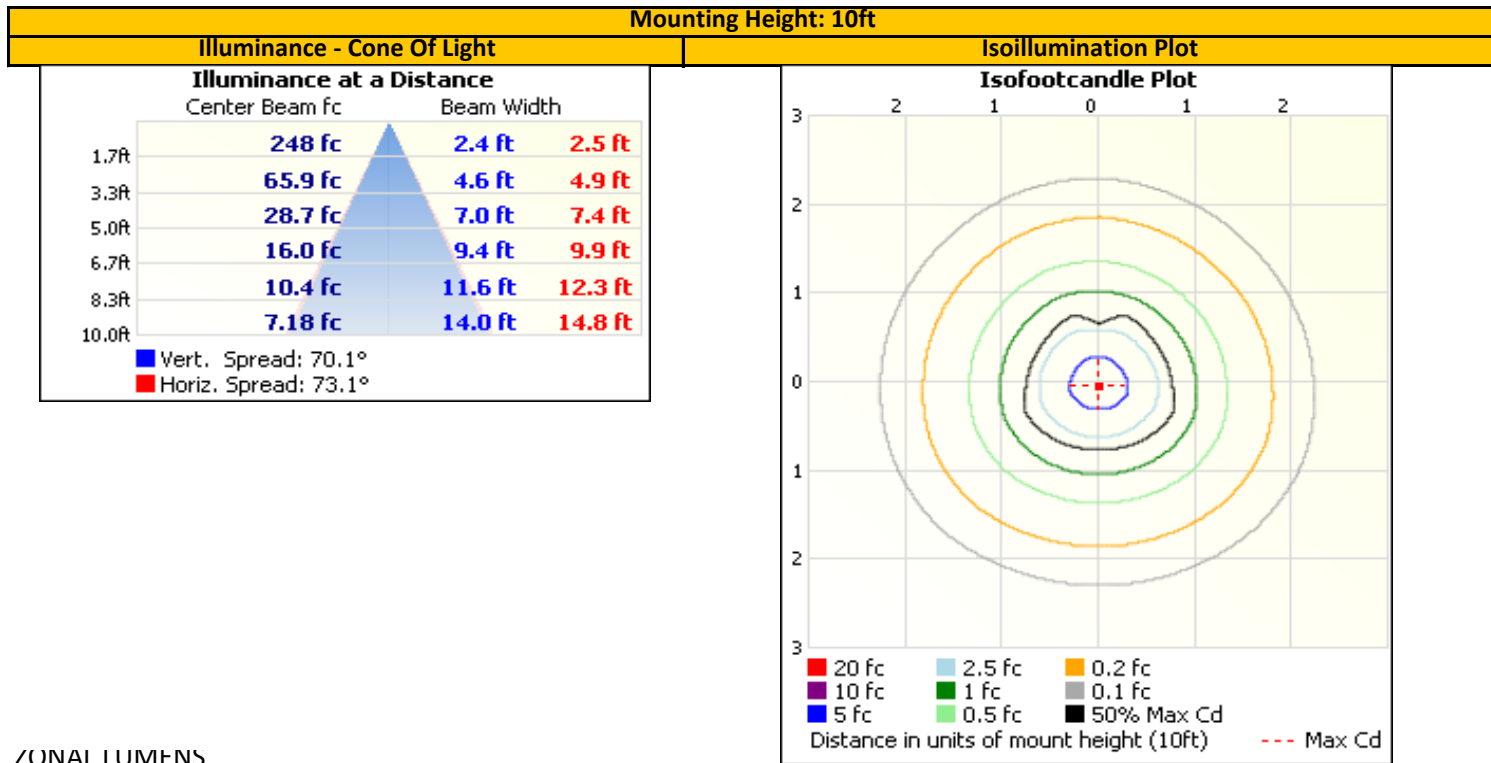
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	444.3	16.9%	0-10	65.3	2.5%
0-40	679.4	25.8%	10-20	164.6	6.3%
0-60	1,115.0	42.4%	20-30	214.3	8.2%
60-90	348.6	13.3%	30-40	235.1	8.9%
70-100	254.6	9.7%	40-50	232.2	8.8%
90-120	286.1	10.9%	50-60	203.4	7.7%
0-90	1,463.6	55.7%	60-70	159.3	6.1%
90-180	1,165.2	44.3%	70-80	113.8	4.3%
0-180	2,628.8	100.0%	80-90	75.5	2.9%
			90-100	65.3	2.5%
			100-110	91.8	3.5%
			110-120	129.0	4.9%
			120-130	159.6	6.1%
			130-140	181.1	6.9%
			140-150	185.7	7.1%
			150-160	168.5	6.4%
			160-170	130.6	5.0%
			170-180	53.6	2.0%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
7	CLD·PEN·XL·WW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

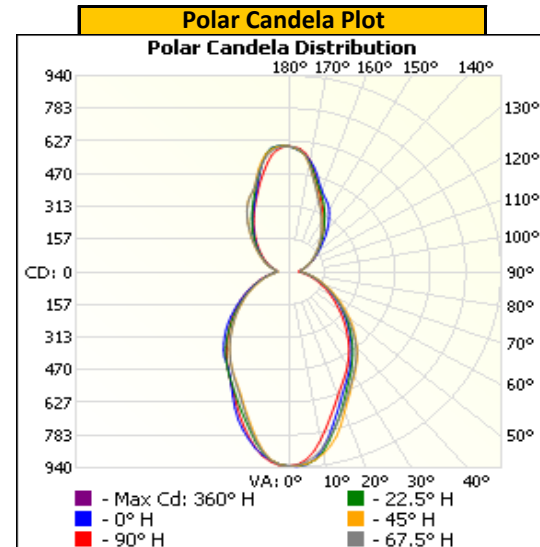
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.02	457.7	54.28	0.988

Light Output (lm)	Lumen Efficacy (lm/W)
2861.1	52.7

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	931	931	931	931	931
5	927	926	923	914	903
10	862	877	886	858	817
15	759	781	817	780	717
20	666	692	719	700	635
25	595	612	640	631	574
30	540	551	579	572	520
35	483	493	525	520	465
40	427	436	470	464	406
45	372	380	410	401	350
50	321	329	354	339	297
55	273	279	297	282	250
60	228	235	248	232	209
65	192	195	204	190	170
70	157	153	163	154	139
75	123	126	130	123	108
80	96	97	99	95	83
85	73	73	75	72	62
90	59	57	58	56	47
95	56	54	55	53	49
100	61	60	61	59	58
105	74	73	71	71	74
110	91	90	88	88	92
115	109	106	105	106	109
120	130	125	123	124	129
125	155	147	143	144	151
130	186	173	167	168	176
135	222	202	193	194	203
140	266	236	224	223	234
145	311	273	257	255	270
150	355	317	294	293	307
155	386	364	335	332	349
160	423	409	382	379	401
165	484	462	445	441	466
170	543	534	522	526	543
175	581	582	584	587	592
180	602	602	602	602	602

Entire luminous intensity matrix found in .IES file



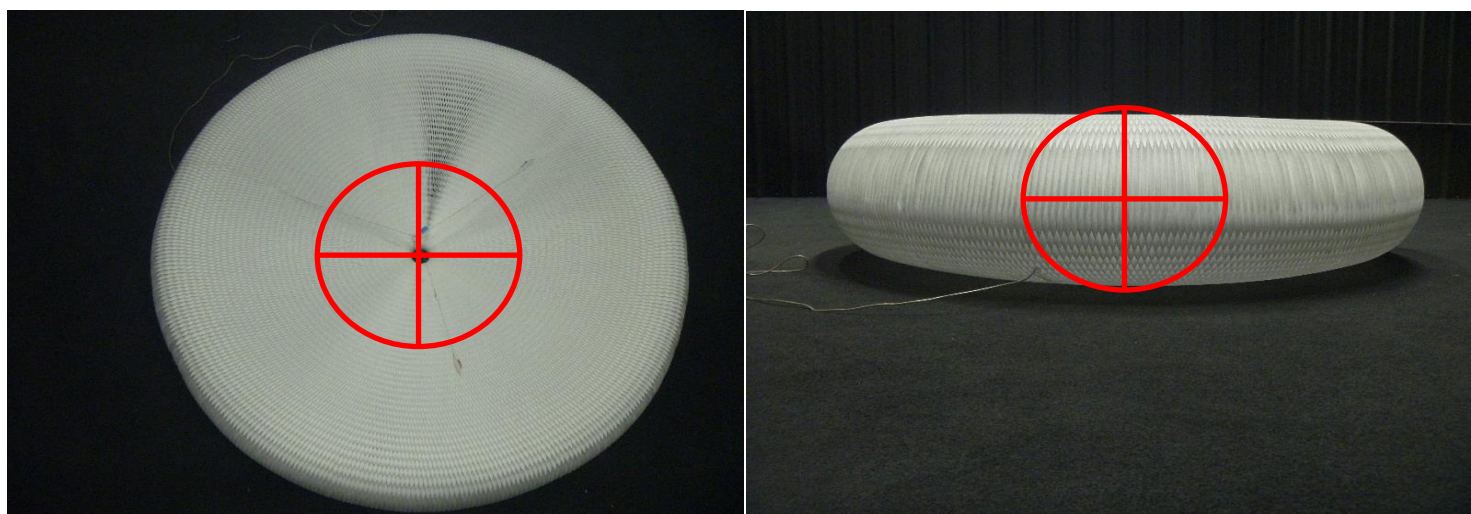
REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
5.42	5.42	1.25
0°-180° H	90°-270° H	0°-180° V

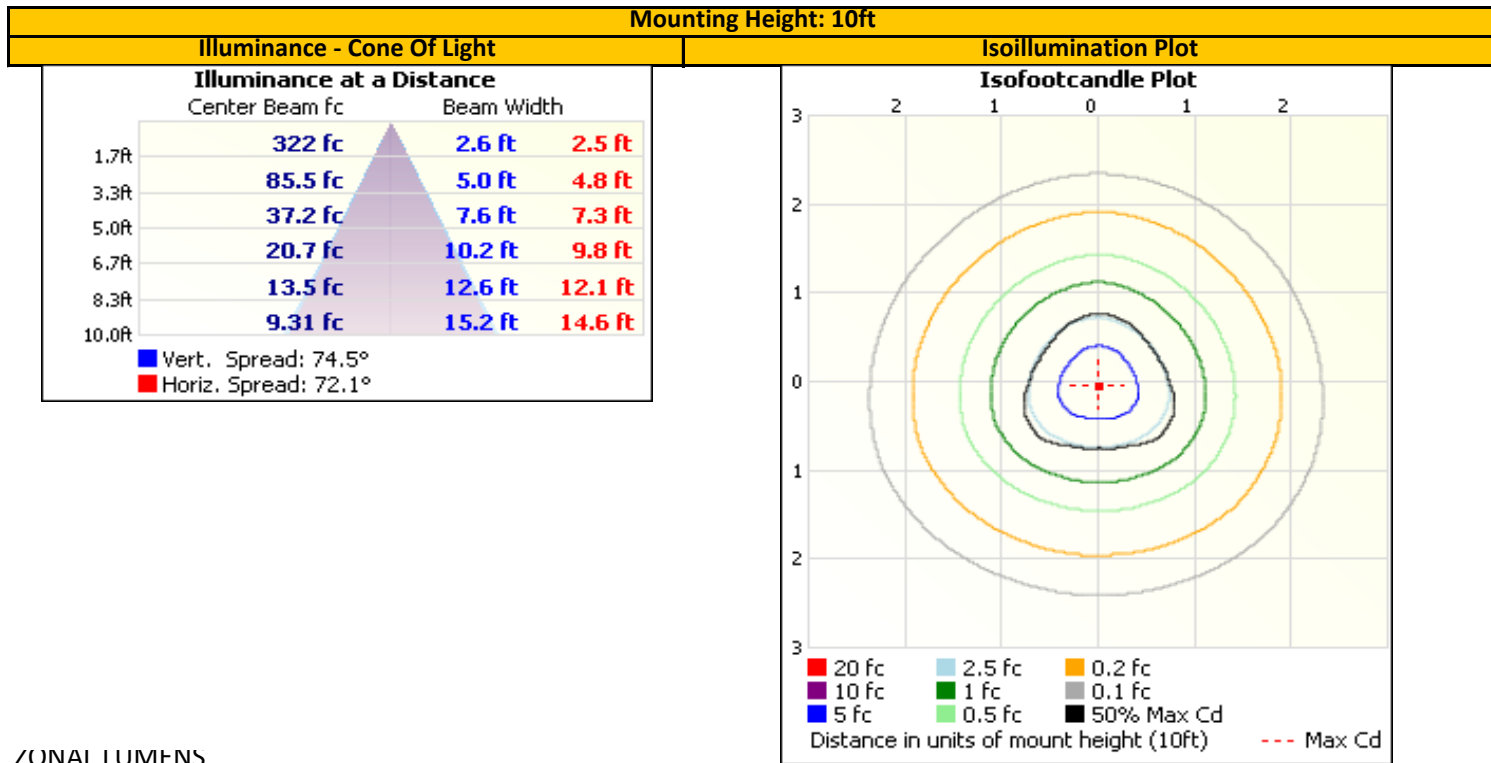
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary										
Zone	Zone	Lumens	Luminaire	Zone	Zone	Lumens	Total	Zone	Lumens	Total
	0-30	572.0	20.0%		0-10	85.0	3.0%	90-100	59.6	2.1%
	0-40	873.7	30.5%		10-20	211.9	7.4%	100-110	80.3	2.8%
	0-60	1,400.4	48.9%		20-30	275.1	9.6%	110-120	109.4	3.8%
	60-90	381.3	13.3%		30-40	301.7	10.5%	120-130	137.1	4.8%
	70-100	258.7	9.0%		40-50	286.3	10.0%	130-140	161.6	5.6%
	90-120	249.4	8.7%		50-60	240.4	8.4%	140-150	176.2	6.2%
	0-90	1,781.8	62.3%		60-70	182.2	6.4%	150-160	167.4	5.9%
	90-180	1,079.4	37.7%		70-80	124.1	4.3%	160-170	132.7	4.6%
	0-180	2,861.1	100.0%		80-90	75.0	2.6%	170-180	54.9	1.9%

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

REPORT NO. 104747938CRT-001

Test Configuration	Tested Model No.	Pass/Fail/NA
8	CLD·PEN·XL·NW	NA

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

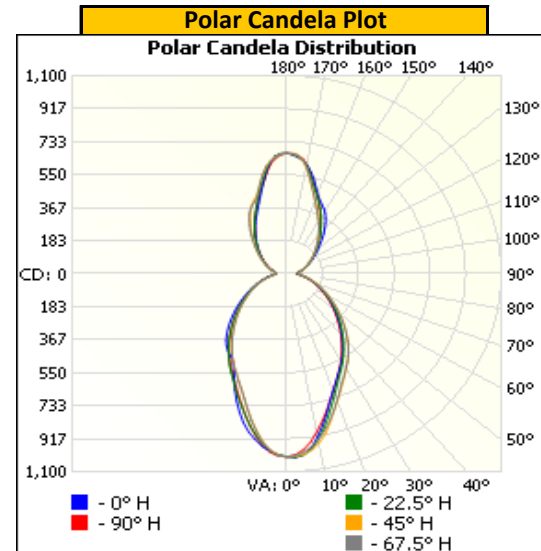
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.06	446.7	52.97	0.988

Light Output (lm)	Lumen Efficacy (lm/W)
3042.4	57.4

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	1016	1016	1016	1016	1016
5	1008	1009	1006	994	981
10	916	934	954	934	890
15	796	820	856	847	788
20	693	716	756	751	693
25	621	634	674	667	619
30	561	571	608	606	556
35	499	509	550	549	492
40	437	447	486	485	429
45	380	389	422	419	370
50	326	334	358	356	317
55	277	284	300	298	268
60	235	236	249	248	224
65	192	194	203	203	184
70	155	157	164	162	148
75	123	124	128	127	116
80	94	95	98	98	88
85	71	71	74	73	65
90	56	54	58	58	50
95	57	57	59	58	54
100	66	66	66	65	63
105	84	83	80	79	81
110	101	100	99	98	100
115	122	119	118	118	119
120	145	140	137	138	140
125	173	165	160	160	165
130	206	194	186	186	193
135	247	226	215	215	224
140	295	264	249	248	260
145	345	304	287	285	304
150	393	354	328	325	348
155	426	403	373	372	399
160	466	458	427	427	459
165	541	518	498	500	525
170	610	605	593	597	611
175	650	654	657	659	661
180	670	670	670	670	670

Entire luminous intensity matrix found in .IES file



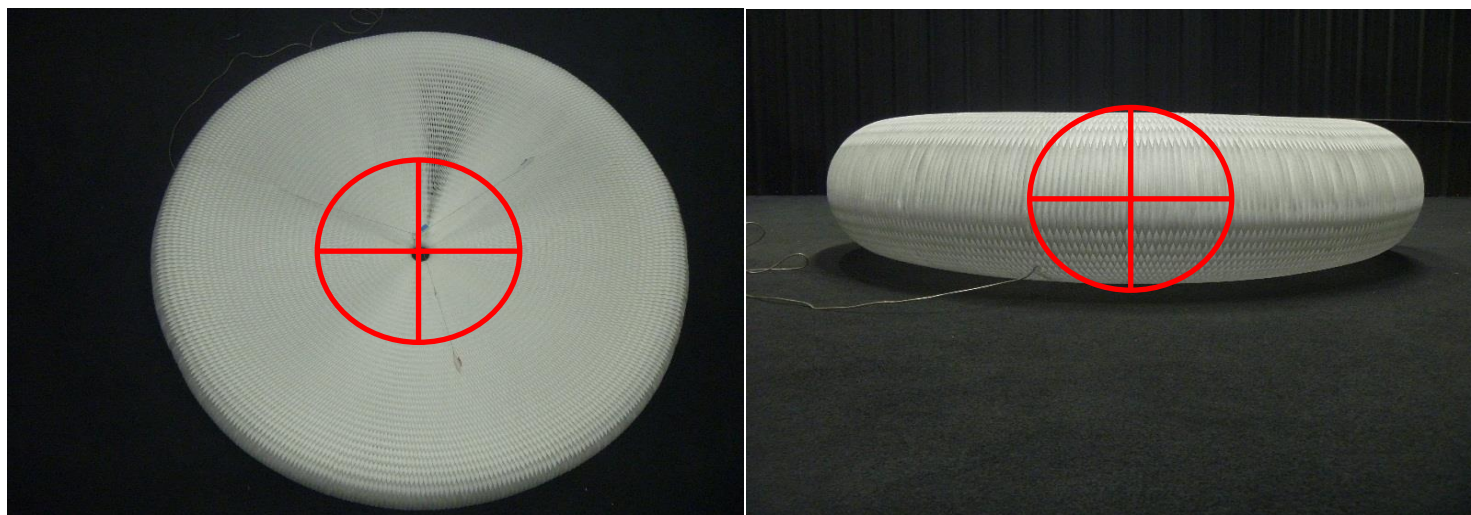
REPORT NO. 104747938CRT-001

ORIENTATION AND ALIGNMENT OF EUT

Luminous Opening		
Length (ft)	Width (ft)	Height (ft)
5.42	5.42	1.25
0°-180° H	90°-270° H	0°-180° V

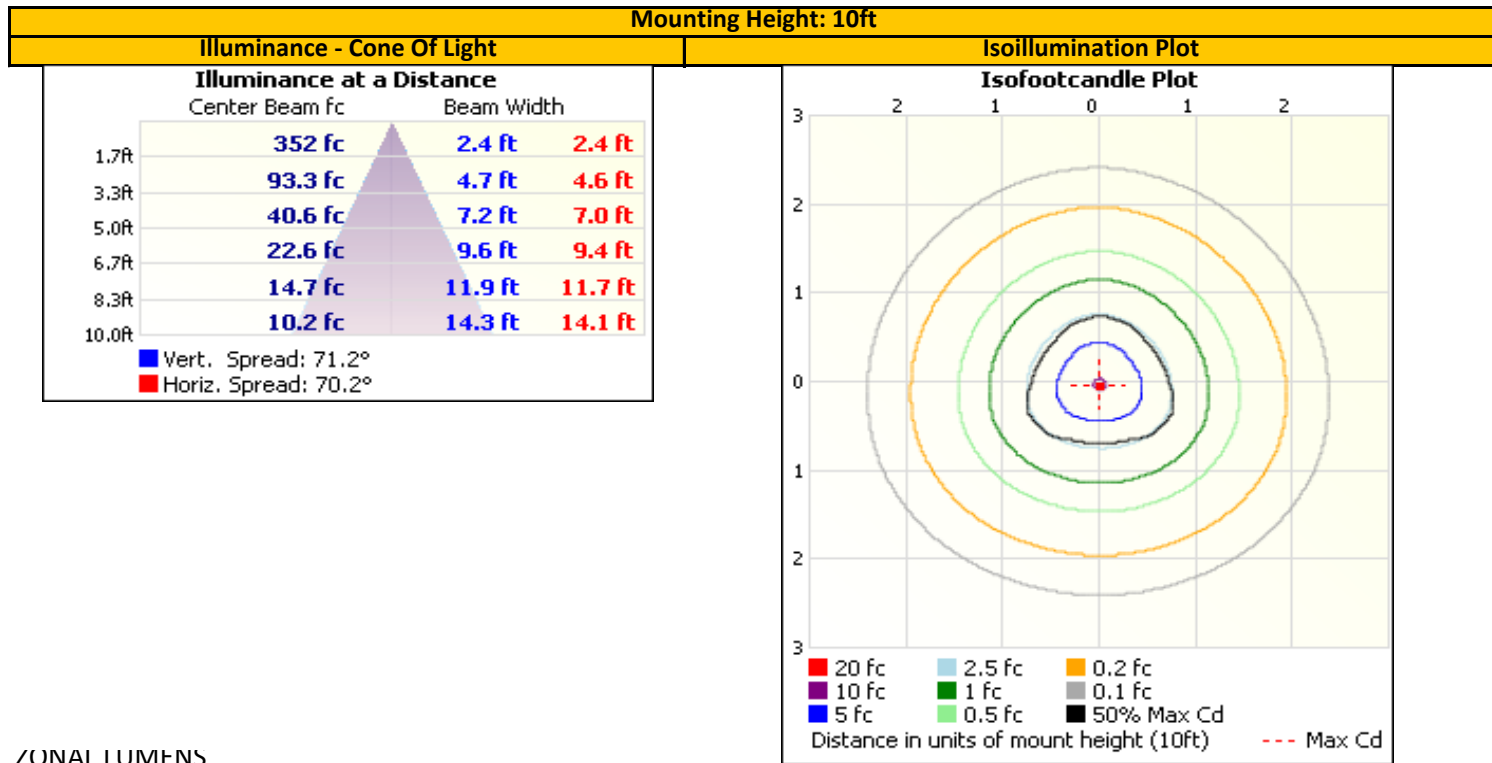
Test Distance (ft)
29.6

PHOTOMETRIC CENTER OF EUT



REPORT NO. 104747938CRT-001

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	613.0	20.1%	0-10	92.2	3.0%
0-40	933.3	30.7%	10-20	227.3	7.5%
0-60	1,489.9	49.0%	20-30	293.4	9.6%
60-90	400.6	13.2%	30-40	320.3	10.5%
70-100	270.7	8.9%	40-50	302.8	10.0%
90-120	263.3	8.7%	50-60	253.8	8.3%
0-90	1,890.5	62.1%	60-70	192.3	6.3%
90-180	1,151.9	37.9%	70-80	130.2	4.3%
0-180	3,042.4	100.0%	80-90	78.0	2.6%
			90-100	62.5	2.1%
			100-110	84.8	2.8%
			110-120	116.0	3.8%
			120-130	145.8	4.8%
			130-140	172.1	5.7%
			140-150	188.1	6.2%
			150-160	179.6	5.9%
			160-170	142.6	4.7%
			170-180	60.4	2.0%

EQUIPMENT LIST

REPORT NO. 104747938CRT-001

#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI High Speed Mirror Goniophotometer	6440	---	5/14/2021	8/14/2021
2	Elgar AC Power Supply	CW1251	---	VBU	VBU
3	Yokogawa Power Analyzer	WT210	E464	5/11/2021	5/11/2022
4	Traceable Hygrothermometer	4800	L204	2/21/2021	2/21/2022
5	Sorenson DC Power Supply	XG 150-10	---	VBU	VBU
6	Omega Thermometer	DPi8-C24	M263	3/23/2021	3/23/2022
7	Bosch Distance Laser	Pro GLM 20	L211	3/3/2021	3/3/2022
8	M-D Building Products Digital Level	Smart Tool	L112	5/26/2021	5/26/2022

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
---	None	---	---	---
---	---	---	---	---
---	---	---	---	---