

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P21273

Luminaire Tested: **ML709827ICAT120D-495PWW06-H750ICAT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P21273  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ML709827ICAT120D-495PWW06-H750ICAT  
Description: HALO 6 INCH LED DOWNLIGHT WITH 900 Lmn MODULE, DIFFUSE LENS AND WHITE REFLECTOR WITH PLASTIC SPECULAR KICKER---ABSOLUTE PHOTOMETRY IS BASED ON CALIBRATION FACTORS CREATED USING A 500 WATT, NIST TRACEABLE, OMNI-DIRECTIONAL LAB LUMEN STANDARD IN THE GONIOPHOTOMETER WITH TEST DISTANCE OF 28.75 FEET----  
Trim Cat.No.  
Light Source: (1)SMT LED 2700K  
CL-L241-C26L2-A  
Ballast/Driver: (1)ELECTRONIC DRIVER  
(1)RHPS311BL-CLO

**Summary**

Lumens per Lamp: 656 (1 lamp)  
Luminaire Lumens: 656.6 lumens  
Efficiency: 100.1%  
Efficacy: 46.9 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.28  
Luminous Opening: Circular (Dia: 0.48' x H: 0')  
CIE Type: Direct

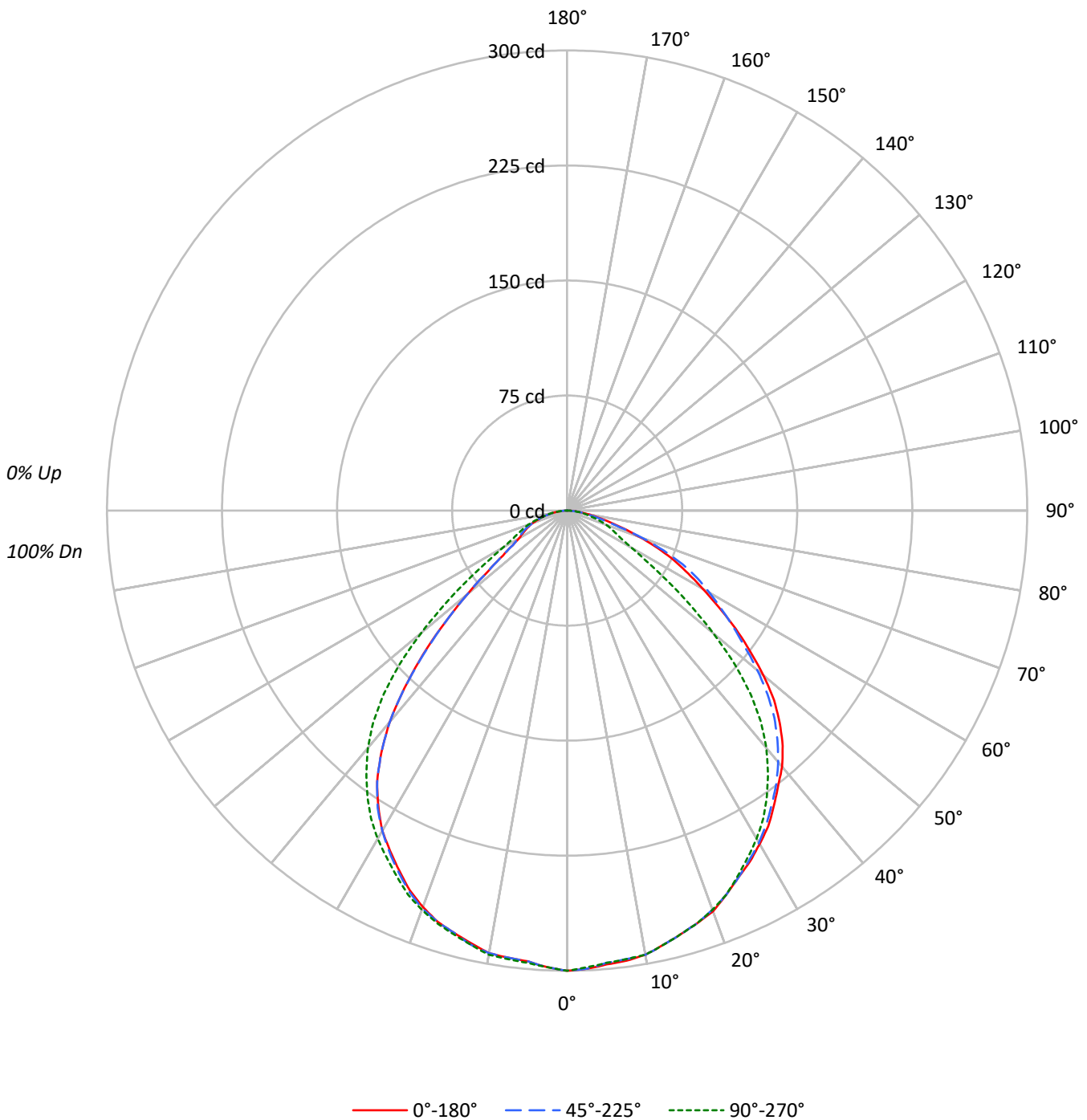
Input Watts (W): 14  
Input Voltage (V): NR  
Input Current (Ain): 0.12083  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75
3	94	84	77	71	91	83	76	71	80	74	70	77	73	68	75	71	67	65
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57
5	80	68	60	54	78	67	60	54	65	59	53	63	58	53	62	56	52	50
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45
7	69	57	49	43	68	56	48	43	54	48	42	53	47	42	52	46	42	40
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	17907	17907	17907
5°	17796	17736	17676
10°	17820	17820	17759
15°	17674	17674	17612
20°	17659	17595	17468
25°	17387	17322	17058
30°	17300	17024	16611
35°	17124	16541	15740
40°	16987	15740	14026
45°	16545	14266	11227
50°	15508	11515	7893
55°	13945	8221	5307
60°	12177	5730	4298
65°	10875	4943	4237
70°	8726	4712	4189
75°	6458	4151	3921
80°	4812	3781	3437
85°	4109	3424	2739



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	28.2	4.3	4.3
10°-20°	80.7	12.3	12.3
20°-30°	120.8	18.4	18.4
30°-40°	140.2	21.3	21.4
40°-50°	125.2	19.1	19.1
50°-60°	81.7	12.4	12.5
60°-70°	51.2	7.8	7.8
70°-80°	23.1	3.5	3.5
80°-90°	5.5	0.8	0.8
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	229.7	35.0	35.0
0°-40°	369.9	56.3	56.4
0°-60°	576.8	87.8	87.9
0°-90°	656.6	100.0	100.1
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	656.6	100.0	100.1

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	300	300	300	300	300	
5°	297	296	296	295	295	28
15°	286	286	286	285	285	81
25°	264	264	263	260	259	122
35°	235	233	227	216	216	147
45°	196	191	169	132	133	150
55°	134	132	79	51	51	120
65°	77	83	35	31	30	76
75°	28	25	18	17	17	31
85°	6	5	5	4	4	7
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	300	300	300	300	300	300	300	300	300	300	300
2.5°	299	299	299	299	299	299	299	299	299	299	299
5°	297	296	296	296	296	296	296	296	296	296	296
7.5°	296	295	295	295	295	295	295	295	295	295	295
10°	294	294	294	294	294	294	294	294	294	294	294
12.5°	290	290	290	290	290	290	290	290	290	290	290
15°	286	286	286	286	285	286	286	285	285	286	285
17.5°	282	282	282	282	282	282	282	282	282	282	282
20°	278	277	277	277	277	277	277	277	277	277	277
22.5°	271	271	271	271	271	271	271	271	271	271	271
25°	264	264	264	264	264	264	264	264	264	264	264
27.5°	258	257	257	258	257	257	257	257	257	257	257
30°	251	251	251	251	251	251	250	250	250	250	250
32.5°	244	243	243	243	243	243	243	243	242	242	242
35°	235	235	235	234	234	234	234	234	233	233	233
37.5°	226	226	226	226	225	225	225	225	224	224	223
40°	218	217	217	217	216	216	216	215	215	214	214
42.5°	208	207	207	207	206	206	205	205	204	203	203
45°	196	196	196	195	195	195	194	193	192	191	190
47.5°	183	183	182	182	181	181	180	179	178	177	176
50°	167	167	167	166	166	165	164	164	162	162	160
52.5°	150	150	150	150	149	149	149	148	147	146	145
55°	134	133	134	134	134	134	133	133	133	132	132
57.5°	117	117	118	118	118	119	119	119	119	119	119
60°	102	102	103	103	104	105	105	106	107	107	108
62.5°	89	89	90	90	91	92	93	94	95	96	96
65°	77	77	77	78	78	79	80	81	82	83	84
67.5°	64	64	64	64	64	65	65	66	67	68	69
70°	50	50	50	50	50	50	50	50	51	52	52
72.5°	38	38	37	37	37	37	36	36	36	36	37
75°	28	27	27	27	27	26	26	26	26	25	25
77.5°	20	20	19	19	19	19	18	18	18	18	17
80°	14	13	13	13	13	13	13	13	12	12	12
82.5°	9	9	9	9	9	9	9	9	9	9	8
85°	6	6	6	6	6	6	6	6	6	5	5
87.5°	3	2	3	3	2	2	2	2	2	2	2
90°	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	300	300	300	300	300	300	300	300	300	300	300
2.5°	299	299	299	298	299	298	298	298	298	298	298
5°	296	296	296	296	296	296	296	296	296	296	295
7.5°	295	295	295	295	295	295	295	295	295	295	295
10°	294	294	294	294	294	294	294	294	294	294	293
12.5°	289	290	290	290	290	290	290	290	290	290	290
15°	285	286	286	286	286	286	286	286	286	286	286
17.5°	282	282	282	282	282	282	282	282	282	282	282
20°	277	277	277	277	277	277	277	277	277	277	277
22.5°	271	271	271	271	271	271	271	271	270	270	270
25°	264	264	264	264	263	263	263	263	263	262	262
27.5°	257	257	257	256	256	256	256	255	255	254	253
30°	250	250	249	249	249	248	248	247	246	245	245
32.5°	242	242	241	241	240	239	239	238	237	235	234
35°	233	232	232	231	230	229	228	227	225	224	222
37.5°	223	222	222	221	220	218	217	215	213	210	207
40°	213	212	211	210	208	207	204	202	199	195	191
42.5°	202	201	199	197	195	193	190	187	183	178	172
45°	189	188	186	183	180	177	173	169	164	157	150
47.5°	175	173	170	167	162	158	153	148	142	135	127
50°	159	157	153	148	142	136	130	124	118	111	104
52.5°	144	142	137	130	123	115	107	101	94	88	82
55°	131	128	123	114	105	95	86	79	74	68	63
57.5°	119	116	110	101	89	78	68	61	56	53	49
60°	108	105	99	90	78	65	55	48	44	42	40
62.5°	97	95	89	80	69	57	47	40	37	35	35
65°	84	83	78	70	60	49	41	35	33	32	31
67.5°	69	69	65	59	50	42	35	31	29	28	28
70°	53	53	51	46	40	34	29	27	25	25	25
72.5°	37	37	37	34	31	27	24	22	22	21	21
75°	25	25	25	24	23	21	19	18	18	18	18
77.5°	17	17	17	17	16	15	15	14	14	14	14
80°	12	12	12	12	12	11	11	11	11	11	11
82.5°	8	8	8	8	8	8	8	8	8	8	7
85°	5	5	5	5	5	5	5	5	5	5	4
87.5°	2	2	2	2	2	2	2	2	2	2	2
90°	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	300	300	300	300	300	300	300	300	300	300	300
2.5°	298	298	298	298	298	298	298	298	298	298	298
5°	295	295	295	295	295	295	295	295	295	295	295
7.5°	295	295	294	294	294	294	294	294	294	294	294
10°	294	294	293	293	293	293	293	293	293	293	293
12.5°	290	290	290	290	290	290	290	290	289	290	290
15°	286	285	285	285	285	285	285	285	285	285	285
17.5°	282	282	281	281	281	281	281	281	281	281	281
20°	276	276	276	276	276	276	275	276	275	275	275
22.5°	270	270	269	269	269	269	269	268	268	268	268
25°	261	261	261	261	260	260	260	260	260	260	259
27.5°	253	253	252	252	251	251	251	251	250	251	250
30°	244	243	242	242	242	241	241	241	241	241	241
32.5°	233	232	231	231	230	230	230	230	229	230	229
35°	220	219	217	217	216	216	216	216	215	216	216
37.5°	205	203	201	200	199	199	199	199	199	199	199
40°	187	184	182	180	180	180	180	180	180	180	180
42.5°	166	162	159	157	157	157	157	157	157	157	157
45°	144	138	135	133	132	132	132	132	132	133	133
47.5°	120	114	110	108	108	108	107	108	108	108	108
50°	97	91	87	85	85	85	85	85	85	85	85
52.5°	75	71	68	66	66	65	65	65	66	66	66
55°	58	54	52	51	51	51	51	51	51	51	51
57.5°	46	44	43	42	42	42	42	42	42	42	42
60°	39	38	37	37	37	37	37	37	37	37	37
62.5°	34	34	34	34	34	34	34	34	33	33	33
65°	31	31	31	31	31	31	31	30	30	30	30
67.5°	28	28	28	28	28	28	28	27	27	27	27
70°	25	25	25	24	24	24	24	24	24	24	24
72.5°	21	21	21	21	21	21	20	20	20	20	20
75°	18	17	17	17	17	17	17	17	17	17	17
77.5°	14	14	14	14	13	13	13	13	13	13	13
80°	11	10	10	10	10	10	10	10	10	10	10
82.5°	7	7	7	7	7	7	7	7	7	7	7
85°	4	4	4	4	4	4	4	4	4	4	4
87.5°	2	2	2	2	2	2	2	2	2	2	2
90°	0	0	0	0	0	0	0	0	0	0	0





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**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	300	300	300	300
2.5°	298	298	298	298
5°	295	295	295	295
7.5°	294	294	294	294
10°	293	293	293	293
12.5°	289	289	289	289
15°	285	285	285	285
17.5°	281	281	281	281
20°	275	275	275	275
22.5°	268	268	268	268
25°	259	259	260	259
27.5°	250	250	250	250
30°	241	241	241	241
32.5°	229	229	229	229
35°	215	216	215	216
37.5°	199	199	199	199
40°	180	180	180	180
42.5°	157	157	157	157
45°	133	133	133	133
47.5°	108	108	108	108
50°	85	85	85	85
52.5°	66	66	65	65
55°	51	51	51	51
57.5°	42	42	41	42
60°	37	36	36	36
62.5°	33	33	33	33
65°	30	30	30	30
67.5°	27	27	27	27
70°	24	24	24	24
72.5°	20	20	20	20
75°	17	17	17	17
77.5°	13	13	13	13
80°	10	10	10	10
82.5°	7	7	7	7
85°	4	4	4	4
87.5°	2	2	2	2
90°	0	0	0	0

(END OF REPORT)