

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: P130224

Luminaire Tested: **HL612ICAT - HLM6935 - HL6NFL - 71PS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P130224  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33476)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL612ICAT - HLM6935 - HL6NFL - 71PS  
Description: HALO ALLSLOPE 6" 21W, Drop Opal Glass Lens, White Polymer Trim Ring  
"Dead Front", Wet Location - Showerlight using 25 Degree Optic at a 6-12  
Pitch  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 827.1 lumens  
Efficiency: N/A  
Efficacy: 43.3 lumens/watt  
Spacing Criteria (0/90/45): 1.33 / 1.29 / 1.46  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

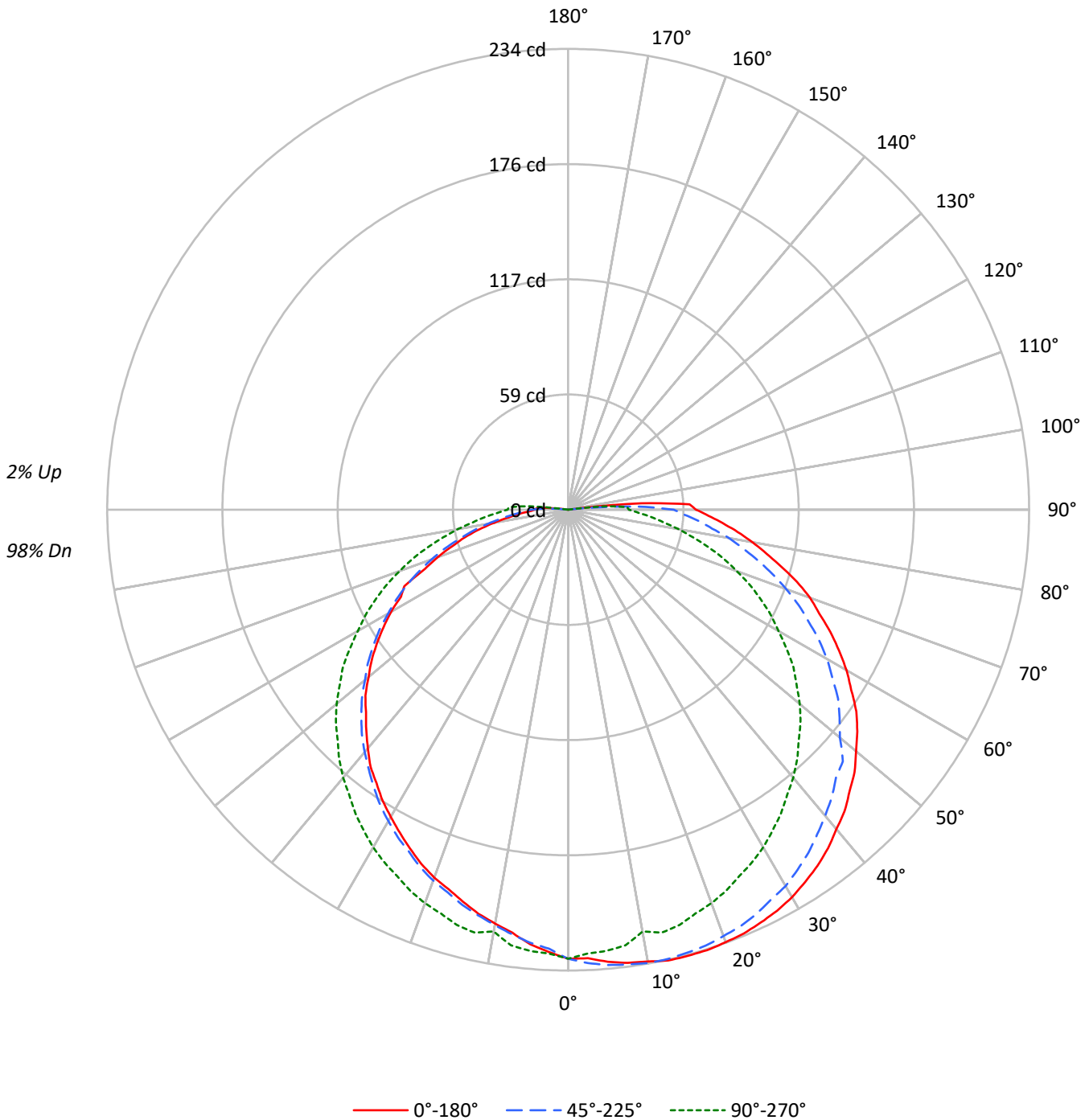
Input Watts (W): 19.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	110	110	110	105	105	105	100	100	100	98
1	106	100	95	90	103	97	93	88	93	89	85	88	85	82	84	82	79	77
2	95	86	78	71	92	83	76	70	79	73	68	76	71	66	72	68	64	62
3	86	74	65	58	83	73	64	57	69	62	56	66	60	55	63	58	53	51
4	78	65	56	48	76	64	55	48	61	53	47	58	52	46	56	50	45	43
5	72	58	48	41	70	57	48	41	54	46	40	52	45	40	50	44	39	37
6	66	52	42	36	64	51	42	35	49	41	35	47	40	34	45	39	34	32
7	61	47	38	31	59	46	37	31	44	36	31	43	36	30	41	35	30	28
8	57	43	34	28	55	42	33	28	40	33	27	39	32	27	38	31	27	25
9	53	39	31	25	52	38	30	25	37	30	24	36	29	24	35	28	24	22
10	50	36	28	22	48	35	28	22	34	27	22	33	27	22	32	26	22	20

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

	0°	90°	180°
0°	13609	13609	13609
5°	13492	13164	12970
10°	13485	12593	12356
15°	13528	12593	11890
20°	13536	12314	11514
25°	13554	12031	11128
30°	13577	11832	10762
35°	13559	11569	10420
40°	13495	11322	10080
45°	13472	11038	9684
50°	13450	10819	9331
55°	13466	10531	8940
60°	13334	10080	8494
65°	13217	9708	8250
70°	13175	9170	7122
75°	12969	8546	6299
80°	13012	7788	5224
85°	13351	7159	4275



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	21.6	2.6
10°-20°	62.4	7.5
20°-30°	96.8	11.7
30°-40°	120.8	14.6
40°-50°	132.0	16.0
50°-60°	129.0	15.6
60°-70°	111.9	13.5
70°-80°	83.3	10.1
80°-90°	51.9	6.3
90°-100°	17.6	2.1
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	180.7	21.8
0°-40°	301.5	36.5
0°-60°	562.5	68.0
0°-90°	809.6	97.9
90°-120°	17.6	2.1
90°-150°	17.6	2.1
90°-180°	18.0	2.2
0°-180°	827.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	228	228	228	228	228	
5°	230	232	225	221	222	22
15°	234	233	218	208	206	66
25°	231	226	205	192	190	107
35°	221	213	188	172	170	138
45°	202	192	166	148	145	156
55°	178	167	140	121	118	159
65°	147	135	108	90	92	145
75°	112	100	74	57	54	119
85°	79	66	42	28	25	68
90°	65	54	31	19	17	36
95°	37	10	20	4	10	19
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	228.0	228.0	228.0	228.0	228.0	228.0	228.0	228.0	228.0
2.5°	228.0	232.9	230.4	227.2	225.6	229.6	223.1	226.4	224.8
5°	230.4	234.5	232.1	232.9	224.8	228.0	220.7	224.0	221.5
7.5°	232.1	236.1	232.9	227.2	223.1	224.8	217.5	219.9	216.7
10°	232.9	237.8	233.7	227.2	217.5	222.3	214.2	215.8	213.4
12.5°	234.5	238.6	233.7	221.5	219.9	219.9	211.0	212.6	210.2
15°	234.5	238.6	232.9	224.8	218.3	216.7	207.7	209.4	206.1
17.5°	234.5	233.7	232.1	223.1	215.0	213.4	203.7	205.3	202.0
20°	233.7	236.9	230.4	220.7	212.6	209.4	200.4	201.2	198.8
22.5°	232.9	236.1	228.8	218.3	209.4	205.3	196.4	196.4	194.7
25°	231.3	234.5	226.4	215.0	205.3	201.2	191.5	192.3	189.9
27.5°	229.6	232.1	223.1	211.8	202.0	197.2	187.4	187.4	185.0
30°	227.2	229.6	220.7	207.7	198.0	192.3	182.6	182.6	180.1
32.5°	224.0	225.6	216.7	203.7	193.1	187.4	177.7	177.7	175.3
35°	220.7	222.3	212.6	199.6	188.3	181.8	172.0	172.0	169.6
37.5°	216.7	218.3	207.7	194.7	182.6	176.1	166.3	166.3	164.7
40°	211.8	213.4	202.9	189.1	177.7	170.4	160.7	159.9	158.2
42.5°	207.7	208.5	198.0	184.2	172.0	163.9	155.0	153.4	151.7
45°	202.0	199.6	192.3	178.5	165.5	158.2	148.5	147.7	145.2
47.5°	197.2	198.0	189.1	172.0	159.9	150.9	142.0	141.2	139.6
50°	190.7	191.5	180.1	166.3	153.4	144.4	134.7	134.7	132.3
52.5°	185.0	184.2	173.6	158.2	146.1	137.1	128.2	127.4	125.8
55°	178.5	178.5	167.2	151.7	139.6	129.8	120.9	120.1	118.5
57.5°	170.4	170.4	159.0	144.4	131.5	122.5	113.6	112.8	111.2
60°	163.1	162.3	151.7	137.1	123.3	114.4	105.5	104.7	103.9
62.5°	155.0	154.2	143.6	129.0	116.0	106.3	98.2	96.6	95.7
65°	146.9	146.1	134.7	120.9	107.9	98.2	90.1	88.4	91.7
67.5°	137.9	137.1	126.6	112.8	99.8	90.1	82.0	80.3	78.7
70°	130.6	129.0	117.7	103.9	90.9	81.1	73.8	72.2	70.6
72.5°	121.7	120.1	108.7	94.9	82.8	73.0	65.7	63.3	61.7
75°	112.0	110.4	99.8	86.0	73.8	64.1	56.8	55.2	54.4
77.5°	103.1	101.4	90.9	77.9	64.9	55.2	49.5	47.1	46.3
80°	94.9	91.7	82.8	69.0	56.8	47.1	41.4	38.9	38.1
82.5°	86.8	83.6	73.8	60.9	48.7	38.9	34.1	31.6	30.8
85°	78.7	75.5	66.5	53.6	42.2	33.3	27.6	25.2	25.2
87.5°	71.4	68.2	59.2	47.1	35.7	27.6	22.7	20.3	19.5
90°	64.9	62.5	53.6	42.2	30.8	23.5	18.7	17.0	17.0
92.5°	61.7	54.4	35.7	34.1	30.0	21.1	13.0	15.4	16.2
95°	37.3	30.8	9.7	17.0	20.3	12.2	4.1	8.1	10.5
97.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)