

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: P130245

Luminaire Tested: **HL612ICAT - HLM6940 - HL6WFL - 455SN**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P130245  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33487)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL612ICAT - HLM6940 - HL6WFL - 455SN  
Description: HALO ALLSLOPE 6" 21W, Satin Nickel Reflector, Satin Nickel Metal Trim Ring using 55 Degree Optic at a 6-12 Pitch  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1689.3 lumens  
Efficiency: N/A  
Efficacy: 88.4 lumens/watt  
Spacing Criteria (0/90/45): 1.5 / 0.76 / 1.18  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

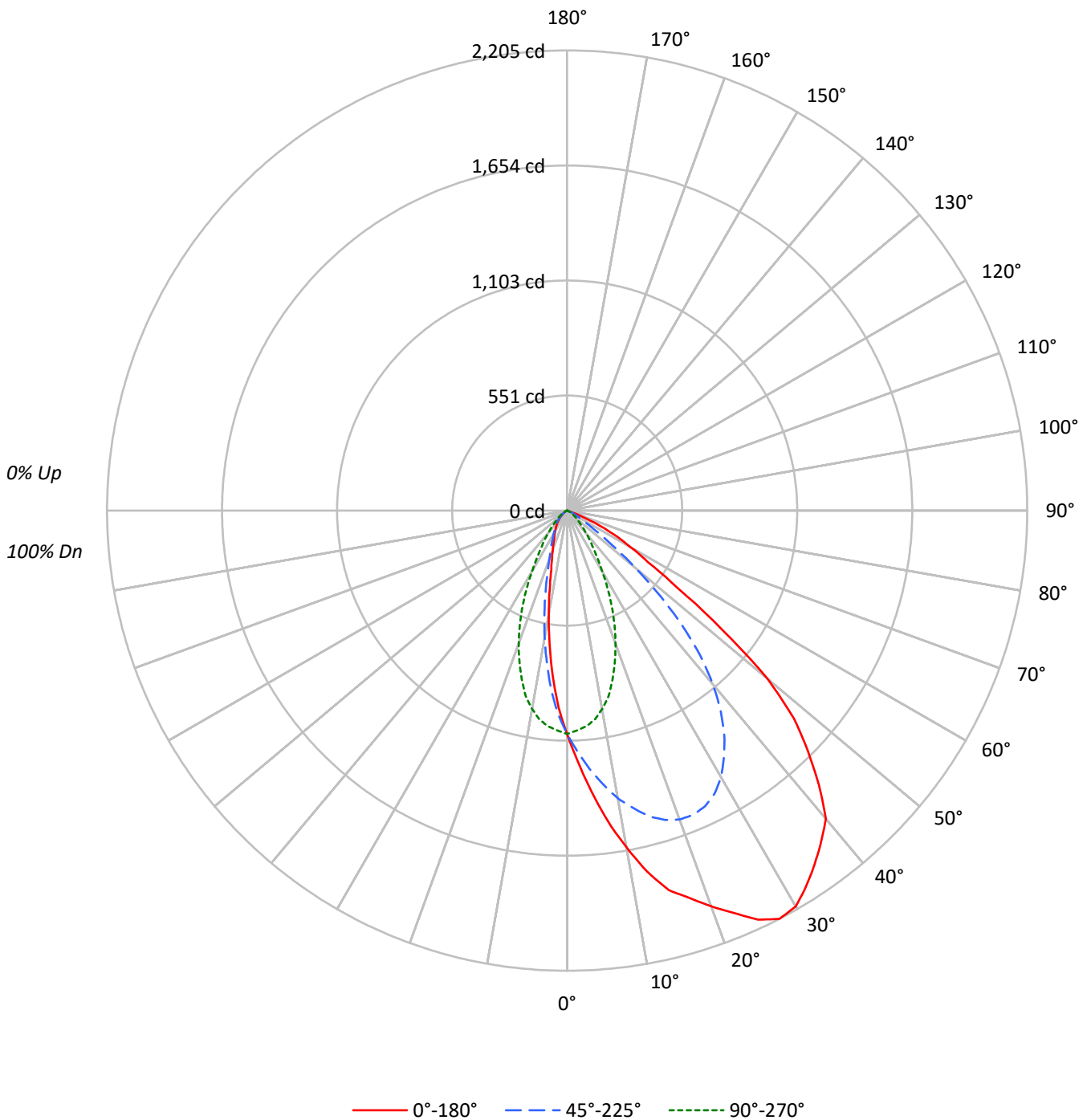
Input Watts (W): 19.1  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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					100			
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	85	83	81					81			
3	98	90	84	79	96	89	83	78	86	81	77	83	79	76	81	77	75	73					73			
4	91	82	75	70	89	81	74	70	79	73	69	76	72	68	74	70	67	65					65			
5	85	75	68	62	83	74	67	62	72	66	62	70	65	61	69	64	60	59					59			
6	80	69	61	56	78	68	61	56	66	60	56	65	59	55	63	58	55	53					53			
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48					48			
8	70	58	51	46	69	58	51	46	57	50	46	55	50	46	54	49	45	44					44			
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40					40			
10	62	50	43	39	61	50	43	39	49	43	39	48	42	39	47	42	38	37					37			

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

	0°	90°	180°
0°	63887	63887	63887
5°	79257	60788	46413
10°	94925	55849	29332
15°	108634	48378	16920
20°	116900	39252	11665
25°	126735	29634	8567
30°	130886	20055	6926
35°	127053	13221	5536
40°	122912	8907	4333
45°	108851	6009	3188
50°	88329	4020	2137
55°	48696	2708	1320
60°	28941	1725	899
65°	15970	909	666
70°	2784	464	373
75°	324	324	208
80°	123	247	123
85°	0	305	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	99.2	5.9
10°-20°	269.7	16.0
20°-30°	386.3	22.9
30°-40°	421.7	25.0
40°-50°	335.0	19.8
50°-60°	138.5	8.2
60°-70°	34.7	2.1
70°-80°	3.2	0.2
80°-90°	1.0	0.1
90°-100°	0.0	0.0
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°	755.2	44.7
0°-40°	1176.9	69.7
0°-60°	1650.4	97.7
0°-90°	1689.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1689.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1070	1070	1070	1070	1070	
5°	1354	1243	1038	865	793	138
15°	1883	1516	839	396	293	532
25°	2163	1563	506	175	146	993
35°	2068	1313	215	101	90	1294
45°	1632	783	90	57	48	1249
55°	646	159	36	21	18	629
65°	178	28	10	7	7	178
75°	3	2	3	2	2	7
85°	0	1	2	1	0	0
90°	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°	1070.3	1070.3	1070.3	1070.3	1070.3	1070.3	1070.3	1070.3	1070.3
2.5°	1206.4	1166.9	1156.7	1134.7	1054.7	1020.7	977.4	945.3	943.4
5°	1353.5	1290.1	1243.2	1157.7	1038.1	949.8	865.3	803.6	792.6
7.5°	1502.5	1428.9	1323.2	1184.3	1010.5	867.1	739.3	657.4	643.7
10°	1639.5	1538.3	1400.4	1198.1	964.6	769.6	618.8	524.1	506.6
12.5°	1771.9	1654.2	1459.3	1199.0	913.1	670.3	501.1	409.2	384.4
15°	1883.1	1749.8	1516.3	1186.2	838.6	575.6	396.3	310.8	293.3
17.5°	1944.8	1827.1	1554.0	1161.3	760.4	479.1	310.8	250.1	240.9
20°	2018.3	1871.2	1575.1	1123.6	677.7	386.2	249.2	209.6	201.4
22.5°	2086.4	1902.5	1577.9	1073.1	594.0	307.1	208.7	176.5	171.0
25°	2162.7	1925.4	1563.2	1005.0	505.7	247.3	174.7	149.9	146.2
27.5°	2205.0	1935.6	1530.1	923.2	418.4	206.0	149.0	130.6	129.7
30°	2190.3	1931.0	1474.9	834.9	335.6	171.9	128.7	116.8	115.9
32.5°	2133.3	1916.2	1399.5	732.8	268.5	145.3	114.0	103.9	102.1
35°	2068.0	1877.6	1313.1	618.8	215.2	122.3	101.1	91.0	90.1
37.5°	1999.9	1801.3	1208.2	525.0	177.5	104.8	89.2	80.0	79.1
40°	1929.1	1687.3	1085.9	424.8	139.8	92.0	78.2	69.9	68.0
42.5°	1787.5	1555.8	946.2	321.8	113.1	80.0	67.1	59.8	57.9
45°	1632.1	1394.0	783.4	235.4	90.1	67.1	57.0	49.7	47.8
47.5°	1474.0	1207.3	603.2	158.2	71.7	55.2	46.0	40.5	39.5
50°	1252.4	964.6	426.7	103.9	57.0	45.1	35.9	32.2	30.3
52.5°	934.2	701.6	271.3	68.0	46.0	34.9	28.5	24.8	23.0
55°	645.5	477.2	159.1	52.4	35.9	27.6	21.1	17.5	17.5
57.5°	457.9	334.7	101.1	40.5	28.5	20.2	15.6	12.9	12.9
60°	354.0	240.0	65.3	30.3	21.1	15.6	12.0	10.1	11.0
62.5°	266.7	164.6	43.2	23.0	14.7	11.0	9.2	8.3	9.2
65°	177.5	96.5	27.6	14.7	10.1	7.4	7.4	6.4	7.4
67.5°	92.0	43.2	15.6	9.2	6.4	5.5	5.5	5.5	5.5
70°	27.6	15.6	8.3	5.5	4.6	4.6	3.7	3.7	3.7
72.5°	7.4	5.5	4.6	3.7	2.8	3.7	2.8	2.8	2.8
75°	2.8	2.8	1.8	1.8	2.8	2.8	1.8	1.8	1.8
77.5°	0.9	0.9	0.9	1.8	1.8	1.8	1.8	1.8	0.9
80°	0.9	0.9	0.9	1.8	1.8	1.8	0.9	0.9	0.9
82.5°	0.0	0.9	0.9	1.8	1.8	1.8	0.9	0.9	0.0
85°	0.0	0.9	0.9	1.8	1.8	1.8	0.9	0.0	0.0
87.5°	0.0	0.0	0.9	1.8	1.8	1.8	0.9	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)