

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P838630

Luminaire Tested: HCSQ645D010-HM64560840-61SQH

Issue Date: 5/21/2024

**Test Information**

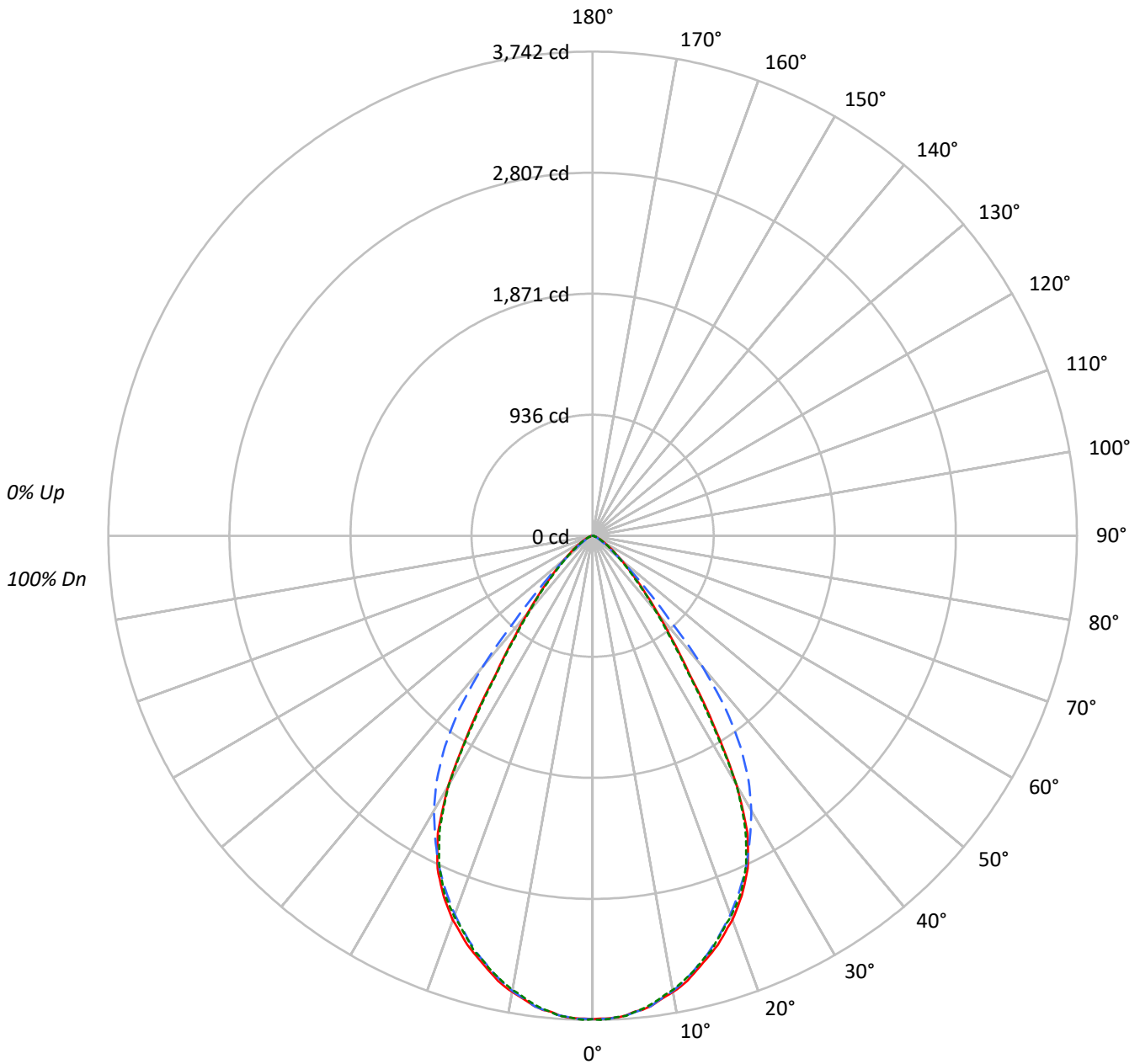
Test Method: LM-79-2019  
Report Number: P838630  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560840-61SQH  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4201.6 lumens  
Efficiency: N/A  
Efficacy: 91.5 lumens/watt  
Spacing Criteria (0/90/45): 1.02 / 1.01 / 1.04  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 45.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: 24 FT

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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
RC	80									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	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100															
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92				92															
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85				85															
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78				78															
4	95	87	81	76	93	86	80	76	83	78	75	81	77	74	79	76	73	71				71															
5	90	80	74	69	88	79	74	69	78	72	68	76	71	68	74	70	67	66				66															
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61				61															
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56				56															
8	76	65	59	54	74	65	59	54	64	58	54	63	57	54	62	57	54	52				52															
9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48				48															
10	68	58	51	47	67	57	51	47	56	51	47	55	50	47	55	50	47	45				45															

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

	0°	45°	90°
0°	160847	160847	160847
5°	159582	159850	159759
10°	156535	156172	155809
15°	151005	150176	150082
20°	144778	142689	143354
25°	134757	133574	133280
30°	110738	121865	110430
35°	68393	104660	66758
40°	43902	74185	42390
45°	28637	35955	27254
50°	19016	17904	17764
55°	12911	9331	11973
60°	8740	5709	8026
65°	6123	4218	5491
70°	3915	3135	3651
75°	2761	2412	2412
80°	2058	1537	1537
85°	1037	2025	1037

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 35955 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	348.9	8.3
10°-20°	946.9	22.5
20°-30°	1278.3	30.4
30°-40°	997.6	23.7
40°-50°	417.9	9.9
50°-60°	141.7	3.4
60°-70°	50.5	1.2
70°-80°	16.4	0.4
80°-90°	3.3	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°	2574.1	61.3
0°-40°	3571.7	85.0
0°-60°	4131.3	98.3
0°-90°	4201.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4201.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3736	3736	3736	3736	3736	
5°	3692	3696	3698	3692	3696	349
15°	3388	3379	3369	3365	3367	953
25°	2837	2824	2812	2812	2806	1276
35°	1301	1527	1991	1525	1270	856
45°	470	504	590	481	448	377
55°	172	158	124	149	160	159
65°	60	50	41	48	54	62
75°	17	14	14	14	14	18
85°	2	2	4	2	2	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3735.8	3735.8	3735.8	3735.8	3735.8
1°	3731.7	3737.9	3733.7	3735.8	3742.0
2°	3731.7	3731.7	3735.8	3733.7	3735.8
3°	3727.5	3727.5	3723.4	3723.4	3723.4
4°	3715.1	3715.1	3715.1	3710.9	3719.2
5°	3692.3	3696.4	3698.5	3692.3	3696.4
6°	3684.0	3686.1	3681.9	3679.9	3675.7
7°	3665.4	3659.1	3665.4	3650.9	3652.9
8°	3634.3	3634.3	3630.1	3626.0	3621.9
9°	3605.3	3605.3	3601.1	3594.9	3590.8
10°	3580.4	3574.2	3572.1	3565.9	3563.8
11°	3551.4	3539.0	3536.9	3530.7	3530.7
12°	3516.2	3510.0	3495.5	3493.4	3493.4
13°	3472.7	3466.5	3456.1	3447.8	3456.1
14°	3431.2	3427.1	3408.4	3414.7	3412.6
15°	3387.7	3379.4	3369.1	3364.9	3367.0
16°	3348.3	3333.8	3319.3	3321.4	3333.8
17°	3306.9	3286.2	3271.7	3269.6	3275.8
18°	3255.1	3238.5	3215.7	3224.0	3224.0
19°	3203.3	3180.5	3166.0	3163.9	3172.2
20°	3159.8	3124.6	3114.2	3112.1	3128.7
22.5°	3010.6	2975.4	2967.1	2975.4	2992.0
25°	2836.6	2824.1	2811.7	2811.7	2805.5
27.5°	2590.0	2619.0	2633.5	2604.5	2556.8
30°	2227.4	2349.6	2451.2	2335.1	2221.2
32.5°	1755.0	2007.8	2241.9	2001.5	1713.5
35°	1301.2	1527.1	1991.2	1525.0	1270.1
37.5°	1002.8	1147.9	1692.8	1129.2	973.8
40°	781.1	866.1	1319.9	855.7	754.2
42.5°	607.1	661.0	878.5	648.5	586.4
45°	470.3	503.5	590.5	480.7	447.6
47.5°	366.7	381.2	404.0	364.7	346.0
50°	283.9	283.9	267.3	273.5	265.2
52.5°	219.6	211.3	180.3	198.9	203.1
55°	172.0	157.5	124.3	149.2	159.5
57.5°	130.5	116.0	89.1	109.8	120.2
60°	101.5	87.0	66.3	82.9	93.2
62.5°	78.7	66.3	51.8	62.2	70.4
65°	60.1	49.7	41.4	47.7	53.9
67.5°	45.6	37.3	31.1	35.2	41.4
70°	31.1	29.0	24.9	26.9	29.0
72.5°	22.8	20.7	18.6	18.6	20.7
75°	16.6	14.5	14.5	14.5	14.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	4.1	4.1	4.1	4.1	4.1
85°	2.1	2.1	4.1	2.1	2.1
87.5°	2.1	2.1	2.1	2.1	2.1
90°	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



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Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°

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Scaled Data Report





77.5°	10.4	10.4	10.4	10.4	10.4
80°	8.3	8.3	6.2	6.2	6.2

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(END OF REPORT)