

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: P837687

Luminaire Tested: HCSQ460D010-HM44560835-41SQMW

Issue Date: 5/17/2024

**Test Information**

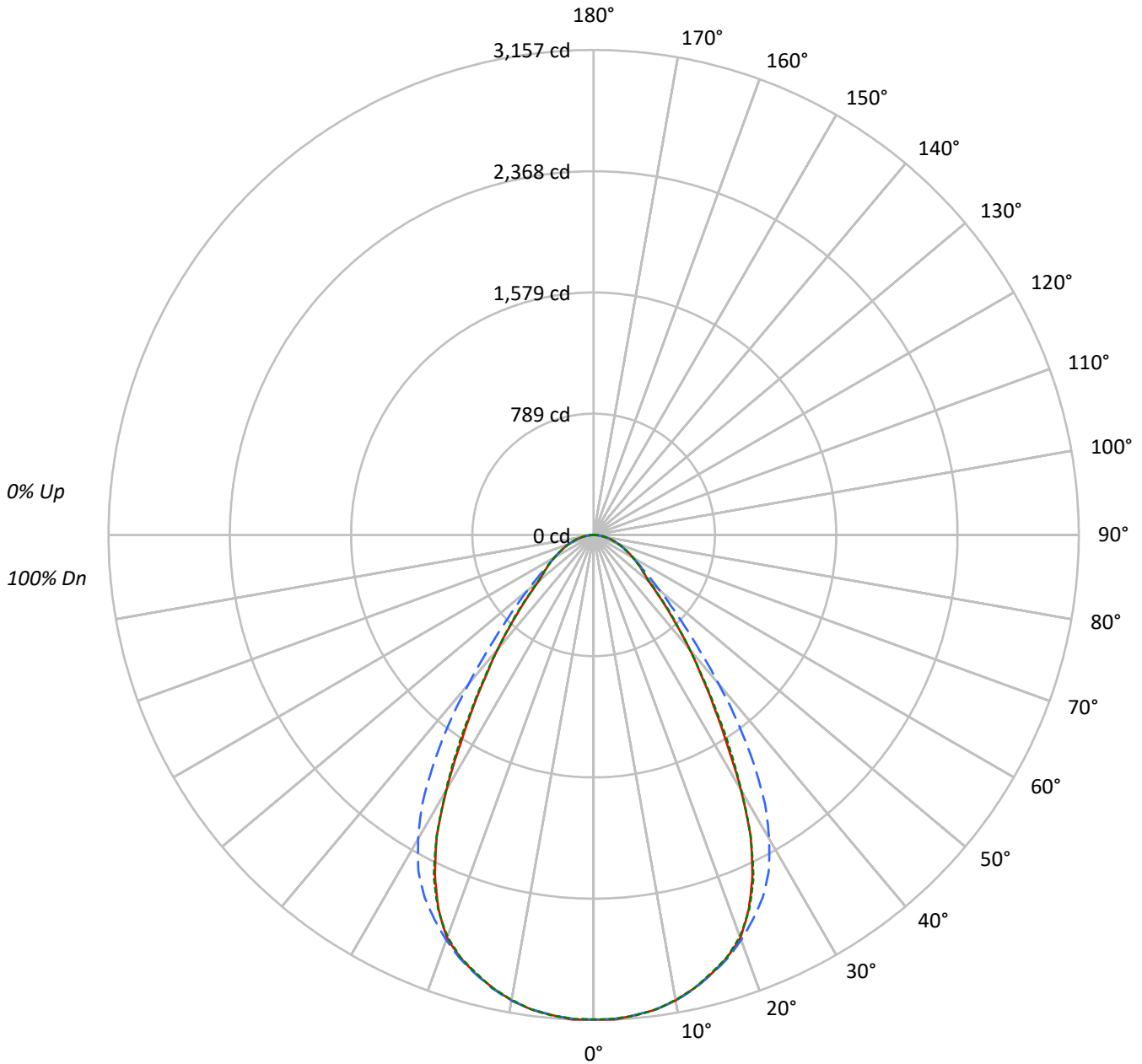
Test Method: LM-79-2019  
Report Number: P837687  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ460D010-HM44560835-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4578.2 lumens  
Efficiency: N/A  
Efficacy: 81.8 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 56  
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					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								
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

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

	0°	45°	90°
0°	305613	305613	305613
5°	305117	305117	305351
10°	302615	302851	302369
15°	296726	296977	296235
20°	287824	289340	286814
25°	261229	278257	263057
30°	214417	255549	215245
35°	161181	214517	163499
40°	122757	159949	122440
45°	91682	113507	93354
50°	69825	84594	71302
55°	62931	66241	62931
60°	57467	56982	56982
65°	52264	52264	52264
70°	48605	47897	47897
75°	44953	44055	44953
80°	41004	39666	41004
85°	35458	35458	35458

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 113507 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	297.5	6.5
10°-20°	832.9	18.2
20°-30°	1145.5	25.0
30°-40°	975.2	21.3
40°-50°	589.0	12.9
50°-60°	347.2	7.6
60°-70°	227.7	5.0
70°-80°	126.2	2.8
80°-90°	36.9	0.8
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°	2276.0	49.7
0°-40°	3251.1	71.0
0°-60°	4187.3	91.5
0°-90°	4578.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4578.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3155	3155	3155	3155	3155	
5°	3138	3140	3138	3135	3140	298
15°	2959	2966	2961	2959	2954	832
25°	2444	2520	2603	2525	2461	1105
35°	1363	1500	1814	1542	1382	863
45°	669	740	828	748	681	526
55°	373	380	392	380	373	335
65°	228	230	228	228	228	228
75°	120	120	118	118	120	127
85°	32	32	32	32	32	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3154.7	3154.7	3154.7	3154.7	3154.7
2.5°	3157.2	3149.8	3152.3	3149.8	3152.3
5°	3137.6	3140.0	3137.6	3135.1	3140.0
7.5°	3115.5	3113.0	3113.0	3110.6	3115.5
10°	3076.3	3071.4	3078.7	3073.8	3073.8
12.5°	3022.3	3029.7	3027.2	3027.2	3022.3
15°	2958.6	2966.0	2961.1	2958.6	2953.7
17.5°	2885.1	2890.0	2892.4	2882.6	2882.6
20°	2791.9	2801.7	2806.6	2789.5	2782.1
22.5°	2637.5	2681.6	2708.6	2679.2	2642.4
25°	2443.9	2519.8	2603.2	2524.7	2461.0
27.5°	2211.0	2318.8	2468.4	2336.0	2211.0
30°	1916.8	2076.2	2284.5	2093.3	1924.2
32.5°	1612.9	1782.0	2073.7	1811.4	1647.2
35°	1362.9	1500.1	1813.9	1541.8	1382.5
37.5°	1147.2	1264.8	1541.8	1291.8	1159.4
40°	970.7	1063.8	1264.8	1076.1	968.2
42.5°	801.5	889.8	1024.6	902.0	811.4
45°	669.2	740.3	828.5	747.6	681.4
47.5°	556.4	615.3	679.0	615.3	563.8
50°	463.3	509.9	561.3	509.9	473.1
52.5°	414.3	429.0	463.3	431.4	414.3
55°	372.6	379.9	392.2	379.9	372.6
57.5°	333.4	338.3	335.8	335.8	333.4
60°	296.6	299.0	294.1	296.6	294.1
62.5°	262.3	262.3	257.4	262.3	259.8
65°	228.0	230.4	228.0	228.0	228.0
67.5°	198.5	198.5	196.1	198.5	198.5
70°	171.6	171.6	169.1	171.6	169.1
72.5°	144.6	144.6	142.2	142.2	142.2
75°	120.1	120.1	117.7	117.7	120.1
77.5°	95.6	95.6	93.1	95.6	95.6
80°	73.5	73.5	71.1	73.5	73.5
82.5°	51.5	51.5	51.5	53.9	53.9
85°	31.9	31.9	31.9	31.9	31.9
87.5°	14.7	14.7	14.7	14.7	17.2
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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