

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: P837350

Luminaire Tested: HCSQ415D010-HM40525940-41SQLWW

Issue Date: 5/17/2024

**Test Information**

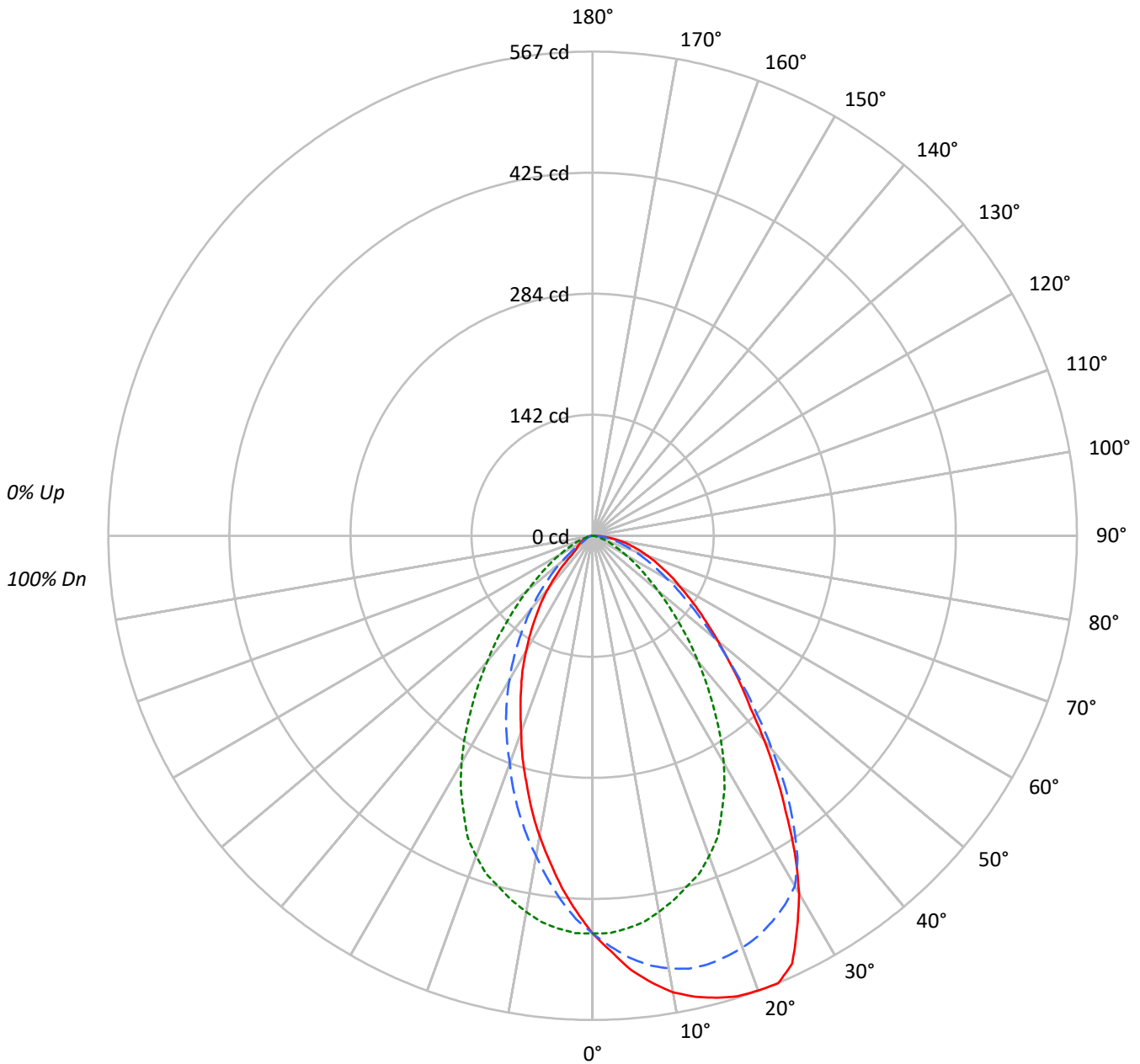
Test Method: LM-79-2019  
Report Number: P837350  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ415D010-HM40525940-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 753.2 lumens  
Efficiency: N/A  
Efficacy: 53.8 lumens/watt  
Spacing Criteria (0/90/45): 1.07 / 1.04 / 1.12  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 14  
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																			
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89																			
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78																			
3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69																			
4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62																			
5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55																			
6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50																			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45																			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42																			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38																			
10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35																			

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

	0°	45°	90°	135°	180°
0°	45115	45115	45115	45115	45115
5°	49585	48234	44898	41621	40211
10°	53405	50611	43991	37489	35148
15°	56174	52132	42665	33518	30008
20°	58423	52907	41124	29216	25196
25°	59089	53231	38192	25632	21175
30°	54085	52978	34353	21791	17361
35°	46631	48346	29294	17893	13742
40°	39507	41340	24217	14113	10269
45°	33483	34292	19358	10494	6604
50°	28861	28168	15026	7068	3979
55°	25436	23206	11485	3902	3564
60°	22649	19453	8583	2170	3197
65°	20745	16665	6350	1971	2865
70°	19261	14417	4674	1869	2804
75°	18041	12614	3219	1722	2470
80°	17294	11046	2232	1841	2232
85°	16895	9559	1445	1445	1445

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 34840 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.7	5.8
10°-20°	120.2	16.0
20°-30°	168.1	22.3
30°-40°	164.3	21.8
40°-50°	119.2	15.8
50°-60°	71.9	9.5
60°-70°	40.4	5.4
70°-80°	20.0	2.7
80°-90°	5.5	0.7
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°	332.0	44.1
0°-40°	496.2	65.9
0°-60°	687.3	91.3
0°-90°	753.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	753.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	466	466	466	466	466	
5°	510	496	462	428	414	50
15°	560	520	425	334	299	159
25°	553	498	357	240	198	249
35°	394	409	248	151	116	247
45°	244	250	141	77	48	189
55°	151	137	68	23	21	135
65°	90	73	28	9	12	91
75°	48	34	9	5	7	52
85°	15	9	1	1	1	17
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°	465.7	465.7	465.7	465.7	465.7	465.7	465.7	465.7	465.7
2.5°	486.8	485.5	481.5	473.6	465.7	456.4	449.1	443.9	439.9
5°	509.9	507.3	496.0	479.5	461.7	443.9	428.0	418.8	413.5
7.5°	527.7	523.1	507.3	484.1	456.4	429.3	404.9	390.4	384.4
10°	542.9	535.0	514.5	483.5	447.2	411.5	381.1	363.9	357.3
12.5°	552.8	544.3	519.2	482.8	437.3	393.7	358.0	335.5	328.9
15°	560.1	549.5	519.8	477.5	425.4	375.2	334.2	307.8	299.2
17.5°	565.4	550.9	517.2	471.6	414.8	356.0	309.8	281.4	272.8
20°	566.7	550.9	513.2	463.0	398.9	336.9	283.4	255.0	244.4
22.5°	567.4	548.9	507.3	452.4	382.4	315.1	261.6	231.8	220.6
25°	552.8	542.3	498.0	434.6	357.3	291.3	239.8	207.4	198.1
27.5°	518.5	517.8	487.4	410.8	334.2	265.5	217.3	186.3	177.7
30°	483.5	484.1	473.6	384.4	307.1	241.1	194.8	164.5	155.2
32.5°	440.6	447.2	446.5	354.7	278.1	218.0	173.1	144.6	135.4
35°	394.3	406.2	408.8	321.0	247.7	191.5	151.3	125.5	116.2
37.5°	352.7	364.6	370.5	291.3	219.3	168.4	130.8	108.3	99.1
40°	312.4	322.3	326.9	256.9	191.5	144.6	111.6	90.5	81.2
42.5°	273.4	288.0	286.7	227.9	167.1	125.5	94.5	73.3	64.1
45°	244.4	254.3	250.3	197.5	141.3	105.7	76.6	56.8	48.2
47.5°	215.3	222.6	216.6	171.7	119.6	87.2	62.1	41.6	32.4
50°	191.5	194.8	186.9	146.0	99.7	71.3	46.9	27.7	26.4
52.5°	169.1	171.1	159.8	124.2	82.6	57.5	34.3	21.8	23.1
55°	150.6	149.9	137.4	105.0	68.0	44.3	23.1	19.8	21.1
57.5°	132.8	130.8	118.2	87.2	55.5	34.3	13.9	17.2	18.5
60°	116.9	114.9	100.4	72.0	44.3	25.8	11.2	15.2	16.5
62.5°	104.4	99.7	85.2	59.4	35.7	18.5	9.9	13.2	14.5
65°	90.5	86.5	72.7	48.2	27.7	13.2	8.6	11.2	12.5
67.5°	79.3	74.6	61.4	39.6	22.5	9.2	7.9	9.9	11.2
70°	68.0	64.1	50.9	31.7	16.5	5.9	6.6	8.6	9.9
72.5°	58.8	54.2	42.3	25.1	12.5	4.6	5.9	7.3	7.9
75°	48.2	44.3	33.7	19.2	8.6	4.0	4.6	5.9	6.6
77.5°	40.3	36.3	26.4	14.5	5.9	3.3	4.0	5.3	5.3
80°	31.0	27.7	19.8	9.9	4.0	2.0	3.3	4.0	4.0
82.5°	22.5	19.8	13.9	6.6	2.0	2.0	2.0	2.6	2.6
85°	15.2	13.2	8.6	4.0	1.3	1.3	1.3	1.3	1.3
87.5°	8.6	6.6	4.0	1.3	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	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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