

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: P837210

Luminaire Tested: HCSQ405D010-HM40525840-41SQLWW

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837210  
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: HCSQ405D010-HM40525840-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

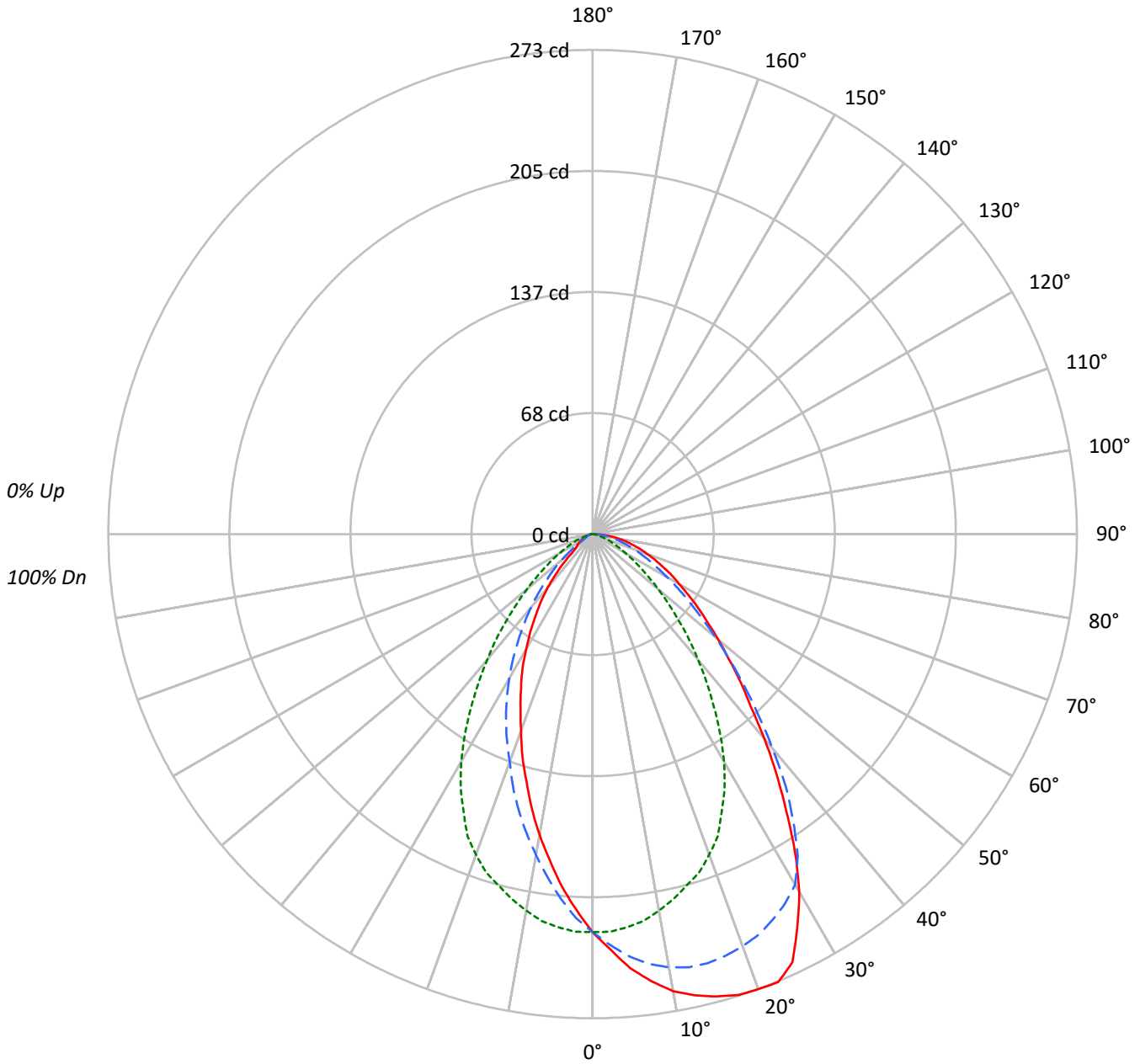
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 363.0 lumens  
Efficiency: N/A  
Efficacy: 60.5 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): 6  
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	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°	21739	21739	21739	21739	21739
5°	23903	23251	21637	20062	19381
10°	25743	24396	21199	18071	16939
15°	27069	25123	20560	16157	14462
20°	28155	25495	19825	14082	12144
25°	28476	25654	18406	12357	10208
30°	26064	25527	16556	10504	8367
35°	22470	23298	14121	8621	6623
40°	19045	19930	11672	6804	4957
45°	16139	16523	9330	5055	3178
50°	13911	13579	7249	3406	1914
55°	12262	11181	5540	1875	1723
60°	10908	9378	4127	1046	1550
65°	9994	8023	3072	940	1375
70°	9290	6939	2266	906	1360
75°	8684	6064	1535	823	1198
80°	8368	5300	1060	893	1060
85°	8114	4557	667	667	667

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 16797 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	21.0	5.8
10°-20°	57.9	16.0
20°-30°	81.0	22.3
30°-40°	79.2	21.8
40°-50°	57.5	15.8
50°-60°	34.6	9.5
60°-70°	19.5	5.4
70°-80°	9.6	2.7
80°-90°	2.6	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°	160.0	44.1
0°-40°	239.2	65.9
0°-60°	331.3	91.3
0°-90°	363.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	363.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	224	224	224	224	224	
5°	246	239	222	206	199	24
15°	270	250	205	161	144	76
25°	266	240	172	116	96	120
35°	190	197	119	73	56	119
45°	118	121	68	37	23	91
55°	73	66	33	11	10	65
65°	44	35	13	4	6	44
75°	23	16	4	2	3	25
85°	7	4	1	1	1	8
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°	224.4	224.4	224.4	224.4	224.4	224.4	224.4	224.4	224.4
2.5°	234.6	234.0	232.1	228.2	224.4	220.0	216.5	213.9	212.0
5°	245.8	244.5	239.1	231.1	222.5	213.9	206.3	201.8	199.3
7.5°	254.3	252.1	244.5	233.3	220.0	206.9	195.1	188.1	185.3
10°	261.7	257.8	248.0	233.0	215.5	198.3	183.7	175.4	172.2
12.5°	266.4	262.3	250.2	232.7	210.7	189.7	172.5	161.7	158.5
15°	269.9	264.8	250.5	230.2	205.0	180.8	161.1	148.3	144.2
17.5°	272.5	265.5	249.3	227.3	199.9	171.6	149.3	135.6	131.5
20°	273.1	265.5	247.3	223.1	192.3	162.3	136.6	122.9	117.8
22.5°	273.4	264.5	244.5	218.1	184.3	151.8	126.1	111.7	106.3
25°	266.4	261.3	240.0	209.5	172.2	140.4	115.6	100.0	95.5
27.5°	249.9	249.6	234.9	198.0	161.1	128.0	104.7	89.8	85.6
30°	233.0	233.3	228.2	185.3	148.0	116.2	93.9	79.3	74.8
32.5°	212.3	215.5	215.2	170.9	134.0	105.0	83.4	69.7	65.3
35°	190.0	195.8	197.0	154.7	119.4	92.3	72.9	60.5	56.0
37.5°	170.0	175.7	178.6	140.4	105.7	81.2	63.0	52.2	47.7
40°	150.6	155.3	157.6	123.8	92.3	69.7	53.8	43.6	39.2
42.5°	131.8	138.8	138.2	109.8	80.5	60.5	45.5	35.3	30.9
45°	117.8	122.6	120.6	95.2	68.1	50.9	36.9	27.4	23.2
47.5°	103.8	107.3	104.4	82.8	57.6	42.0	29.9	20.1	15.6
50°	92.3	93.9	90.1	70.4	48.1	34.4	22.6	13.4	12.7
52.5°	81.5	82.4	77.0	59.8	39.8	27.7	16.6	10.5	11.1
55°	72.6	72.3	66.2	50.6	32.8	21.3	11.1	9.5	10.2
57.5°	64.0	63.0	57.0	42.0	26.7	16.6	6.7	8.3	8.9
60°	56.3	55.4	48.4	34.7	21.3	12.4	5.4	7.3	8.0
62.5°	50.3	48.1	41.1	28.6	17.2	8.9	4.8	6.4	7.0
65°	43.6	41.7	35.0	23.2	13.4	6.4	4.1	5.4	6.0
67.5°	38.2	36.0	29.6	19.1	10.8	4.5	3.8	4.8	5.4
70°	32.8	30.9	24.5	15.3	8.0	2.9	3.2	4.1	4.8
72.5°	28.3	26.1	20.4	12.1	6.0	2.2	2.9	3.5	3.8
75°	23.2	21.3	16.2	9.2	4.1	1.9	2.2	2.9	3.2
77.5°	19.4	17.5	12.7	7.0	2.9	1.6	1.9	2.5	2.5
80°	15.0	13.4	9.5	4.8	1.9	1.0	1.6	1.9	1.9
82.5°	10.8	9.5	6.7	3.2	1.0	1.0	1.0	1.3	1.3
85°	7.3	6.4	4.1	1.9	0.6	0.6	0.6	0.6	0.6
87.5°	4.1	3.2	1.9	0.6	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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