

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: P837365

Luminaire Tested: HCSQ420D010-HM40525835-41SQLWW

Issue Date: 5/17/2024

**Test Information**

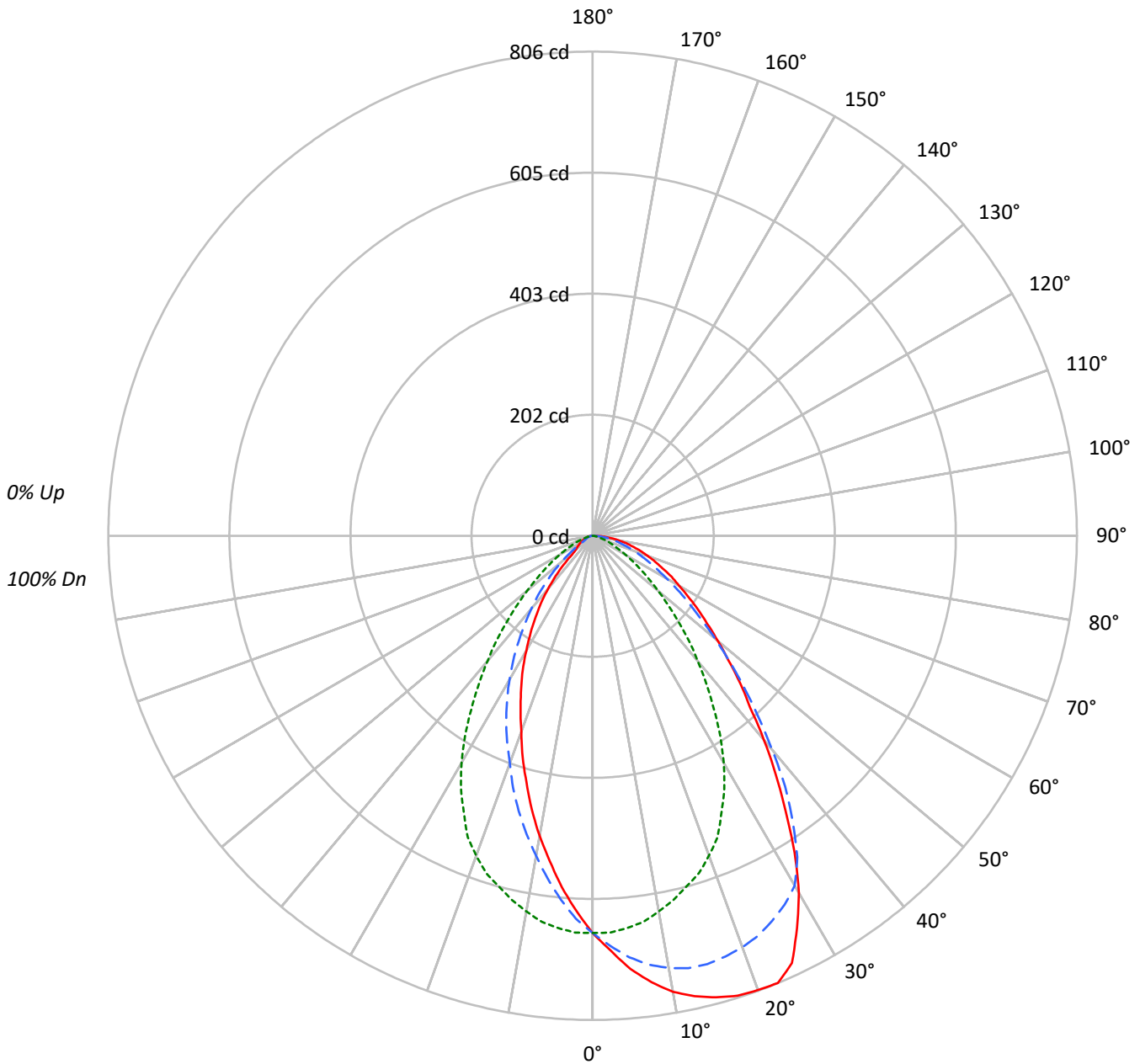
Test Method: LM-79-2019  
Report Number: P837365  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ420D010-HM40525835-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1069.6 lumens  
Efficiency: N/A  
Efficacy: 53.5 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): 20  
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					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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89					89			
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78					78			
3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69					69			
4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62					62			
5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55					55			
6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45					45			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35					35			

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

	0°	45°	90°	135°	180°
0°	64054	64054	64054	64054	64054
5°	70415	68500	63754	59106	57093
10°	75843	71869	62465	53238	49913
15°	79773	74026	60577	47599	42614
20°	82959	75134	58402	41484	35773
25°	83909	75593	54236	36396	30079
30°	76805	75227	48783	30952	24654
35°	66215	68664	41593	25403	19525
40°	56098	58716	34398	20044	14594
45°	47540	48704	27496	14906	9385
50°	40994	39999	21341	10037	5652
55°	36110	32952	16315	5540	5067
60°	32163	27629	12168	3081	4534
65°	29456	23656	9032	2797	4080
70°	27361	20450	6628	2663	3994
75°	25639	17891	4566	2470	3518
80°	24603	15677	3124	2622	3124
85°	24009	13561	2112	2112	2112

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 49472 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.0	5.8
10°-20°	170.7	16.0
20°-30°	238.7	22.3
30°-40°	233.3	21.8
40°-50°	169.3	15.8
50°-60°	102.1	9.5
60°-70°	57.4	5.4
70°-80°	28.4	2.7
80°-90°	7.8	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°	471.4	44.1
0°-40°	704.7	65.9
0°-60°	976.0	91.3
0°-90°	1069.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1069.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	661	661	661	661	661	
5°	724	704	656	608	587	70
15°	795	738	604	475	425	225
25°	785	707	507	340	281	354
35°	560	581	352	215	165	351
45°	347	356	201	109	68	269
55°	214	195	97	33	30	192
65°	128	103	39	12	18	129
75°	68	48	12	7	9	74
85°	22	12	2	2	2	24
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°	661.2	661.2	661.2	661.2	661.2	661.2	661.2	661.2	661.2
2.5°	691.2	689.4	683.7	672.5	661.2	648.1	637.8	630.3	624.7
5°	724.1	720.3	704.4	680.9	655.6	630.3	607.8	594.6	587.1
7.5°	749.4	742.8	720.3	687.5	648.1	609.6	574.9	554.3	545.9
10°	771.0	759.7	730.6	686.6	635.0	584.3	541.2	516.8	507.4
12.5°	785.0	772.8	737.2	685.6	620.9	559.0	508.4	476.5	467.1
15°	795.4	780.4	738.1	678.1	604.0	532.7	474.6	437.1	424.9
17.5°	802.9	782.2	734.4	669.7	589.0	505.5	439.9	399.6	387.4
20°	804.7	782.2	728.8	657.5	566.5	478.3	402.4	362.0	347.0
22.5°	805.7	779.4	720.3	642.5	543.1	447.4	371.4	329.2	313.3
25°	785.0	770.0	707.2	617.2	507.4	413.6	340.5	294.5	281.4
27.5°	736.3	735.3	692.2	583.4	474.6	377.0	308.6	264.5	252.3
30°	686.6	687.5	672.5	545.9	436.1	342.3	276.7	233.5	220.4
32.5°	625.6	635.0	634.0	503.7	394.9	309.5	245.7	205.4	192.3
35°	559.9	576.8	580.6	455.8	351.7	272.0	214.8	178.2	165.1
37.5°	500.9	517.7	526.2	413.6	311.4	239.2	185.7	153.8	140.7
40°	443.6	457.7	464.3	364.9	272.0	205.4	158.5	128.5	115.4
42.5°	388.3	408.9	407.1	323.6	237.3	178.2	134.1	104.1	91.0
45°	347.0	361.1	355.5	280.4	200.7	150.1	108.8	80.7	68.5
47.5°	305.8	316.1	307.6	243.9	169.8	123.8	88.2	59.1	46.0
50°	272.0	276.7	265.4	207.3	141.6	101.3	66.6	39.4	37.5
52.5°	240.1	242.9	227.0	176.3	117.2	81.6	48.8	31.0	32.8
55°	213.8	212.9	195.1	149.1	96.6	62.8	32.8	28.1	30.0
57.5°	188.5	185.7	167.9	123.8	78.8	48.8	19.7	24.4	26.3
60°	166.0	163.2	142.6	102.2	62.8	36.6	15.9	21.6	23.4
62.5°	148.2	141.6	121.0	84.4	50.6	26.3	14.1	18.8	20.6
65°	128.5	122.9	103.2	68.5	39.4	18.8	12.2	15.9	17.8
67.5°	112.6	106.0	87.2	56.3	31.9	13.1	11.3	14.1	15.9
70°	96.6	91.0	72.2	45.0	23.4	8.4	9.4	12.2	14.1
72.5°	83.5	76.9	60.0	35.6	17.8	6.6	8.4	10.3	11.3
75°	68.5	62.8	47.8	27.2	12.2	5.6	6.6	8.4	9.4
77.5°	57.2	51.6	37.5	20.6	8.4	4.7	5.6	7.5	7.5
80°	44.1	39.4	28.1	14.1	5.6	2.8	4.7	5.6	5.6
82.5°	31.9	28.1	19.7	9.4	2.8	2.8	2.8	3.8	3.8
85°	21.6	18.8	12.2	5.6	1.9	1.9	1.9	1.9	1.9
87.5°	12.2	9.4	5.6	1.9	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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