

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: P837201

Luminaire Tested: HCSQ405D010-HM40525830-41SQMB

Issue Date: 5/17/2024

**Test Information**

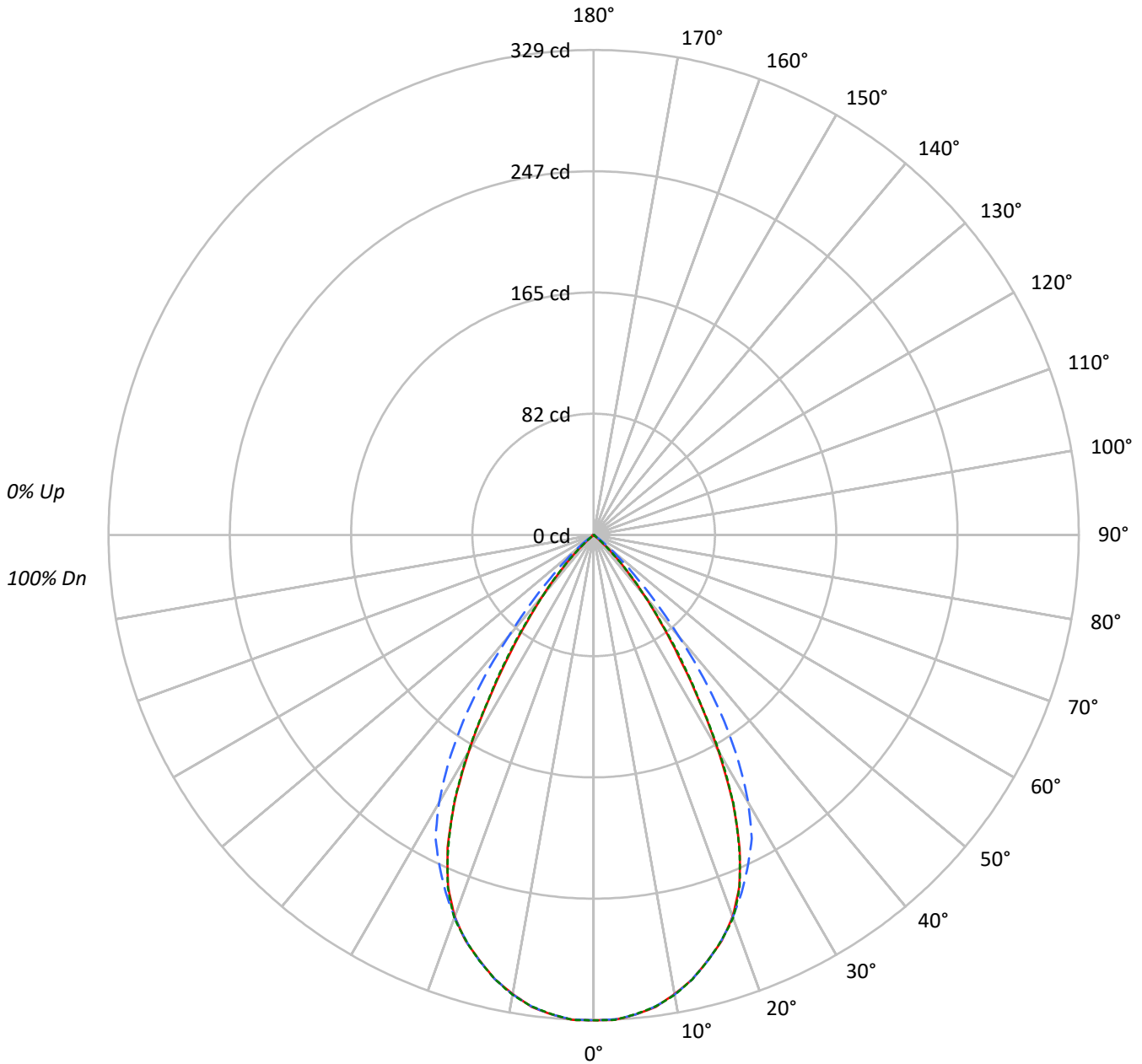
Test Method: LM-79-2019  
Report Number: P837201  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-4)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ405D010-HM40525830-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 328.9 lumens  
Efficiency: N/A  
Efficacy: 54.8 lumens/watt  
Spacing Criteria (0/90/45): 0.96 / 0.96 / 0.99  
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	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	100	100	100	100		
	1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93	93	93	93	93	93		
	2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	87	87	87	87	87	87		
	3	102	96	91	87	100	94	90	86	92	88	84	89	86	83	87	84	82	80	80	80	80	80	80		
	4	97	89	83	79	95	88	83	79	86	81	78	84	80	77	82	79	76	74	74	74	74	74	74		
	5	92	83	77	73	90	82	77	73	80	76	72	79	75	71	77	74	71	69	69	69	69	69	69		
	6	87	78	72	67	85	77	71	67	76	70	67	74	70	66	73	69	66	64	64	64	64	64	64		
	7	82	73	67	63	81	72	66	62	71	66	62	70	65	62	69	65	61	60	60	60	60	60	60		
	8	78	69	62	58	77	68	62	58	67	62	58	66	61	58	65	61	57	56	56	56	56	56	56		
	9	74	65	58	54	73	64	58	54	63	58	54	62	57	54	61	57	54	52	52	52	52	52	52		
	10	71	61	55	51	70	60	55	51	60	54	51	59	54	51	58	54	50	49	49	49	49	49	49		

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

	0°	45°	90°
0°	31901	31901	31901
5°	31760	31760	31731
10°	31105	31134	31164
15°	29967	29998	29998
20°	28402	28433	28505
25°	25044	26445	24948
30°	18894	23446	19072
35°	11850	18248	12252
40°	6677	11356	6677
45°	2809	5740	2767
50°	226	2215	271
55°	101	456	101
60°	116	58	116
65°	69	69	69
70°	85	85	85
75°	112	112	112
80°	0	167	167
85°	0	333	333

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 5740 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.9	9.4
10°-20°	84.0	25.5
20°-30°	108.9	33.1
30°-40°	77.4	23.5
40°-50°	25.1	7.6
50°-60°	1.8	0.5
60°-70°	0.3	0.1
70°-80°	0.3	0.1
80°-90°	0.2	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°	223.8	68.0
0°-40°	301.2	91.6
0°-60°	328.1	99.7
0°-90°	328.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	328.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	329	329	329	329	329	
5°	327	327	327	327	326	31
15°	299	300	299	300	299	84
25°	234	240	247	242	233	105
35°	100	118	154	120	104	64
45°	20	29	42	30	20	17
55°	1	1	3	1	1	1
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	329.3	329.3	329.3	329.3	329.3
2.5°	329.3	329.3	329.0	329.0	329.3
5°	326.6	326.9	326.6	326.6	326.3
7.5°	322.9	322.9	322.6	322.6	322.6
10°	316.2	316.5	316.5	316.5	316.8
12.5°	308.8	308.8	308.8	308.8	308.8
15°	298.8	299.7	299.1	299.7	299.1
17.5°	288.7	288.7	288.4	289.0	288.4
20°	275.5	275.5	275.8	276.5	276.5
22.5°	258.1	261.2	262.4	261.8	258.7
25°	234.3	240.4	247.4	241.6	233.4
27.5°	204.4	216.0	232.2	217.8	205.0
30°	168.9	186.3	209.6	187.0	170.5
32.5°	132.3	152.4	183.3	154.0	133.5
35°	100.2	118.5	154.3	119.7	103.6
37.5°	73.9	90.7	122.5	91.3	76.1
40°	52.8	65.1	89.8	66.3	52.8
42.5°	33.9	46.1	63.2	46.4	35.4
45°	20.5	29.0	41.9	29.6	20.2
47.5°	9.2	16.5	26.0	17.1	9.2
50°	1.5	6.7	14.7	7.0	1.8
52.5°	0.9	1.2	7.0	1.2	0.9
55°	0.6	0.6	2.7	0.6	0.6
57.5°	0.6	0.6	0.6	0.6	0.6
60°	0.6	0.3	0.3	0.3	0.6
62.5°	0.3	0.3	0.3	0.3	0.3
65°	0.3	0.3	0.3	0.3	0.3
67.5°	0.3	0.3	0.3	0.3	0.3
70°	0.3	0.3	0.3	0.3	0.3
72.5°	0.3	0.3	0.3	0.3	0.3
75°	0.3	0.3	0.3	0.3	0.3
77.5°	0.3	0.3	0.3	0.3	0.3
80°	0.0	0.3	0.3	0.3	0.3
82.5°	0.0	0.3	0.3	0.3	0.3
85°	0.0	0.0	0.3	0.3	0.3
87.5°	0.0	0.0	0.3	0.3	0.3
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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