

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P837390

Luminaire Tested: HCSQ420D010-HM40525940-41SQLWW

Issue Date: 5/17/2024

**Test Information**

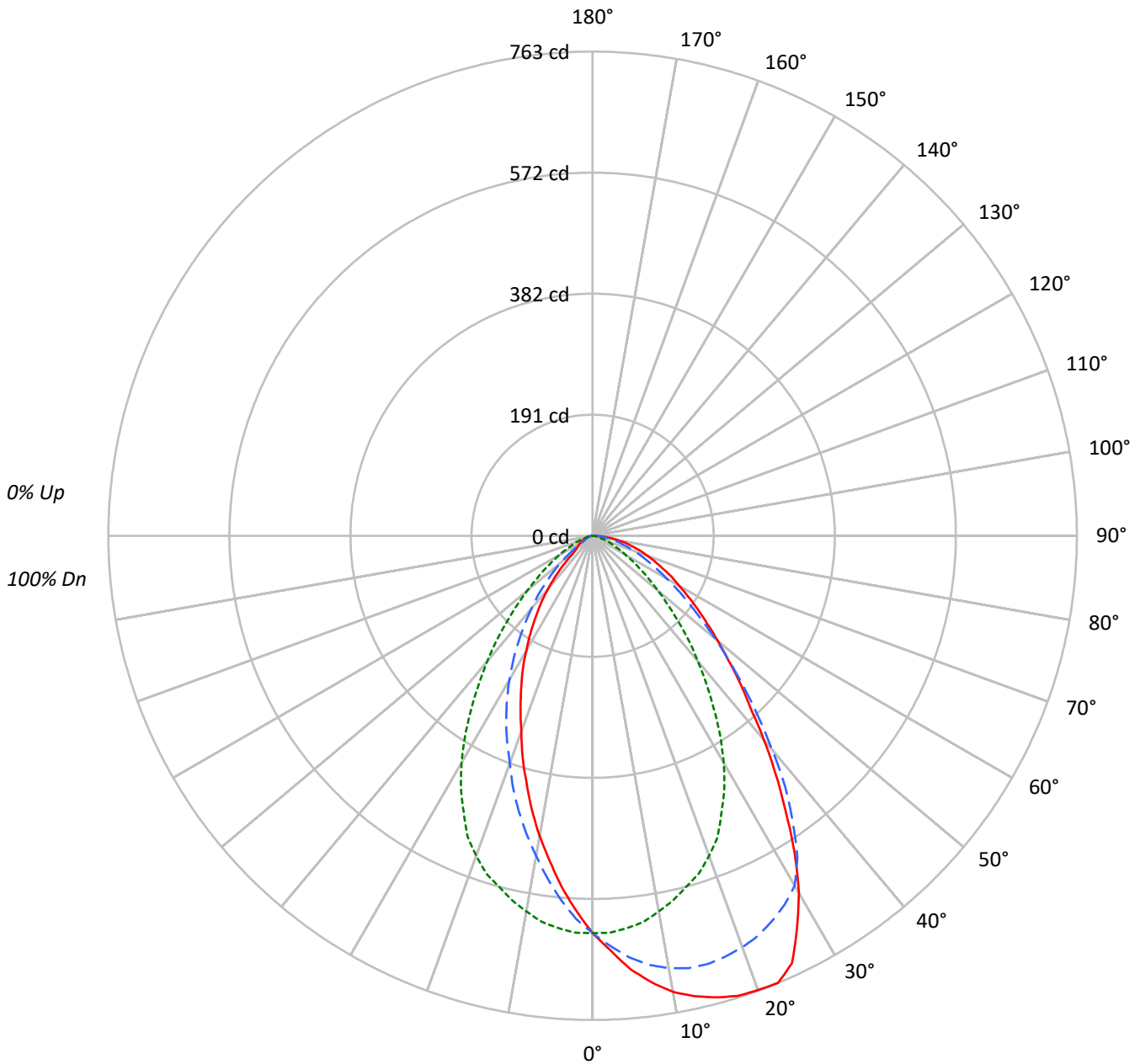
Test Method: LM-79-2019  
Report Number: P837390  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ420D010-HM40525940-41SQLWW  
Description: 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: 1012.7 lumens  
Efficiency: N/A  
Efficacy: 50.6 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										
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°	60654	60654	60654	60654	60654
5°	66671	64853	60360	55965	54059
10°	71810	68052	59140	50405	47257
15°	75531	70095	57357	45072	40348
20°	78546	71134	55299	39278	33876
25°	79451	71574	51350	34461	28476
30°	72722	71223	46188	29308	23346
35°	62703	65009	39382	24055	18485
40°	53114	55593	32564	18982	13810
45°	45019	46115	26030	14111	8878
50°	38808	37874	20210	9510	5350
55°	34202	31195	15454	5253	4797
60°	30458	26156	11528	2926	4301
65°	27897	22395	8550	2636	3874
70°	25917	19374	6288	2521	3767
75°	24255	16956	4304	2321	3331
80°	23264	14840	2957	2455	2957
85°	22675	12782	2001	2001	2001

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 46841 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	58.7	5.8
10°-20°	161.6	16.0
20°-30°	226.0	22.3
30°-40°	220.9	21.8
40°-50°	160.3	15.8
50°-60°	96.6	9.5
60°-70°	54.3	5.4
70°-80°	26.9	2.7
80°-90°	7.4	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°	446.3	44.1
0°-40°	667.2	65.9
0°-60°	924.1	91.3
0°-90°	1012.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1012.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	626	626	626	626	626	
5°	686	667	621	576	556	67
15°	753	699	572	449	402	213
25°	743	670	480	322	266	335
35°	530	550	333	203	156	332
45°	329	337	190	103	65	255
55°	202	185	92	31	28	182
65°	122	98	37	12	17	122
75°	65	45	12	6	9	70
85°	20	12	2	2	2	23
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°	626.1	626.1	626.1	626.1	626.1	626.1	626.1	626.1	626.1
2.5°	654.5	652.7	647.4	636.7	626.1	613.6	603.9	596.8	591.4
5°	685.6	682.0	666.9	644.7	620.7	596.8	575.5	563.0	555.9
7.5°	709.6	703.3	682.0	650.9	613.6	577.2	544.4	524.8	516.8
10°	730.0	719.3	691.8	650.1	601.2	553.3	512.4	489.3	480.4
12.5°	743.3	731.8	698.0	649.2	587.9	529.3	481.3	451.1	442.2
15°	753.1	738.9	698.9	642.1	571.9	504.4	449.4	413.8	402.3
17.5°	760.2	740.6	695.3	634.1	557.7	478.7	416.5	378.3	366.8
20°	761.9	740.6	690.0	622.5	536.4	452.9	381.0	342.8	328.6
22.5°	762.8	738.0	682.0	608.3	514.2	423.6	351.7	311.7	296.6
25°	743.3	729.1	669.6	584.3	480.4	391.6	322.4	278.8	266.4
27.5°	697.1	696.2	655.4	552.4	449.4	357.0	292.2	250.4	238.9
30°	650.1	650.9	636.7	516.8	412.9	324.1	262.0	221.1	208.7
32.5°	592.3	601.2	600.3	476.9	373.9	293.1	232.7	194.5	182.1
35°	530.2	546.2	549.7	431.6	333.0	257.5	203.4	168.7	156.3
37.5°	474.2	490.2	498.2	391.6	294.8	226.5	175.8	145.6	133.2
40°	420.0	433.4	439.6	345.5	257.5	194.5	150.1	121.7	109.2
42.5°	367.7	387.2	385.4	306.4	224.7	168.7	127.0	98.6	86.1
45°	328.6	341.9	336.6	265.5	190.0	142.1	103.0	76.4	64.8
47.5°	289.5	299.3	291.3	230.9	160.7	117.2	83.5	55.9	43.5
50°	257.5	262.0	251.3	196.3	134.1	95.9	63.1	37.3	35.5
52.5°	227.3	230.0	214.9	167.0	111.0	77.3	46.2	29.3	31.1
55°	202.5	201.6	184.7	141.2	91.5	59.5	31.1	26.6	28.4
57.5°	178.5	175.8	159.0	117.2	74.6	46.2	18.6	23.1	24.9
60°	157.2	154.5	135.0	96.8	59.5	34.6	15.1	20.4	22.2
62.5°	140.3	134.1	114.6	79.9	48.0	24.9	13.3	17.8	19.5
65°	121.7	116.3	97.7	64.8	37.3	17.8	11.5	15.1	16.9
67.5°	106.6	100.3	82.6	53.3	30.2	12.4	10.7	13.3	15.1
70°	91.5	86.1	68.4	42.6	22.2	8.0	8.9	11.5	13.3
72.5°	79.0	72.8	56.8	33.7	16.9	6.2	8.0	9.8	10.7
75°	64.8	59.5	45.3	25.8	11.5	5.3	6.2	8.0	8.9
77.5°	54.2	48.8	35.5	19.5	8.0	4.4	5.3	7.1	7.1
80°	41.7	37.3	26.6	13.3	5.3	2.7	4.4	5.3	5.3
82.5°	30.2	26.6	18.6	8.9	2.7	2.7	2.7	3.6	3.6
85°	20.4	17.8	11.5	5.3	1.8	1.8	1.8	1.8	1.8
87.5°	11.5	8.9	5.3	1.8	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

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Scaled Data Report



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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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