

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: P837530

Luminaire Tested: HCSQ440D010-HM43040840-41SQLWW

Issue Date: 5/17/2024



**Test Information**

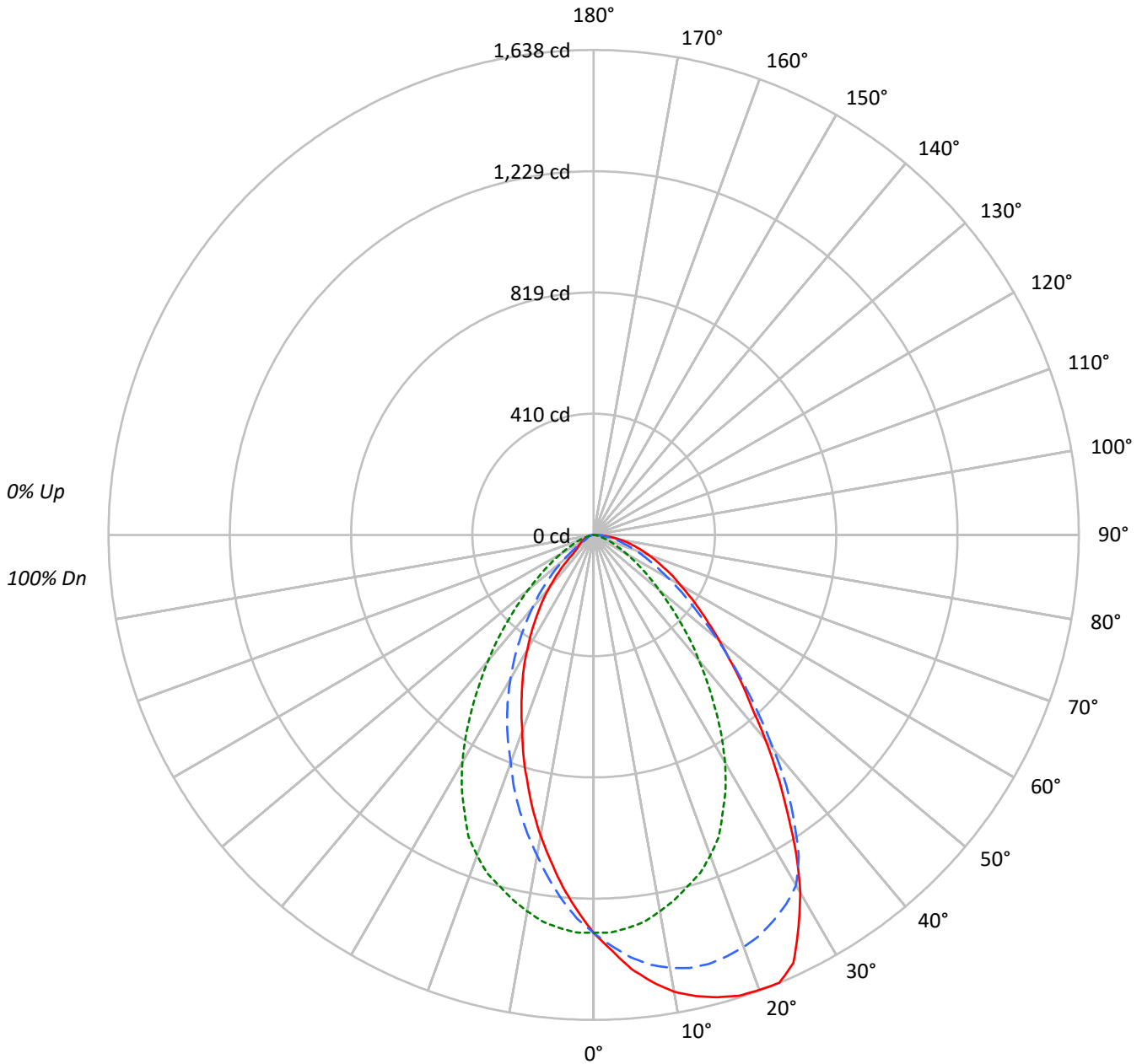
Test Method: LM-79-2019  
Report Number: P837530  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ440D010-HM43040840-41SQLWW  
Description: 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: 2174.0 lumens  
Efficiency: N/A  
Efficacy: 53.0 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): 41  
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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89	89	89	89	89	89		
	2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78	78	78	78	78	78		
	3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69	69	69	69	69	69		
	4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62	62	62	62	62	62		
	5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55	55	55	55	55	55		
	6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50	50	50	50	50	50		
	7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45	45	45	45	45	45		
	8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42	42	42	42	42	42		
	9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38	38	38	38	38	38		
	10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35	35	35	35	35	35		

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

	0°	45°	90°	135°	180°
0°	130201	130201	130201	130201	130201
5°	143126	139226	129589	120137	116053
10°	154155	146089	126966	108207	101459
15°	162143	150479	123140	96752	86613
20°	168629	152711	118711	84320	72722
25°	170565	153655	110247	73968	61131
30°	156104	152904	99166	62911	50114
35°	134595	139562	84546	51634	39677
40°	114031	119342	69921	40746	29655
45°	96642	98984	55897	30291	19071
50°	83328	81309	43390	20406	11499
55°	73420	66968	33171	11265	10303
60°	65372	56149	24742	6278	9242
65°	59874	48069	18361	5685	8298
70°	55629	41580	13511	5410	8101
75°	52102	36382	9283	4978	7149
80°	49986	31911	6360	5300	6360
85°	48685	27566	4224	4224	4224

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 100560 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.0	5.8
10°-20°	347.0	16.0
20°-30°	485.1	22.3
30°-40°	474.2	21.8
40°-50°	344.1	15.8
50°-60°	207.4	9.5
60°-70°	116.6	5.4
70°-80°	57.7	2.7
80°-90°	15.8	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°	958.1	44.1
0°-40°	1432.3	65.9
0°-60°	1983.9	91.3
0°-90°	2174.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2174.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1344	1344	1344	1344	1344	
5°	1472	1432	1333	1235	1193	143
15°	1617	1500	1228	965	864	458
25°	1596	1438	1031	692	572	719
35°	1138	1180	715	437	336	713
45°	705	722	408	221	139	547
55°	435	396	196	67	61	391
65°	261	210	80	25	36	262
75°	139	97	25	13	19	150
85°	44	25	4	4	4	48
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°	1344.0	1344.0	1344.0	1344.0	1344.0	1344.0	1344.0	1344.0	1344.0
2.5°	1405.1	1401.2	1389.8	1366.9	1344.0	1317.4	1296.4	1281.1	1269.7
5°	1471.8	1464.2	1431.7	1384.1	1332.6	1281.1	1235.4	1208.7	1193.4
7.5°	1523.3	1509.9	1464.2	1397.4	1317.4	1239.2	1168.7	1126.7	1109.6
10°	1567.1	1544.2	1485.1	1395.5	1290.7	1187.7	1100.0	1050.5	1031.4
12.5°	1595.7	1570.9	1498.5	1393.6	1262.1	1136.2	1033.3	968.5	949.4
15°	1616.7	1586.2	1500.4	1378.4	1227.8	1082.9	964.7	888.4	863.6
17.5°	1631.9	1590.0	1492.7	1361.2	1197.2	1027.6	894.1	812.1	787.4
20°	1635.7	1590.0	1481.3	1336.4	1151.5	972.3	817.9	735.9	705.4
22.5°	1637.6	1584.3	1464.2	1305.9	1103.8	909.4	755.0	669.2	636.8
25°	1595.7	1565.2	1437.5	1254.4	1031.4	840.7	692.0	598.6	571.9
27.5°	1496.6	1494.7	1407.0	1185.8	964.7	766.4	627.2	537.6	512.8
30°	1395.5	1397.4	1366.9	1109.6	886.5	695.9	562.4	474.7	448.0
32.5°	1271.6	1290.7	1288.8	1023.8	802.6	629.1	499.5	417.5	390.8
35°	1138.1	1172.5	1180.1	926.5	714.9	552.9	436.6	362.2	335.5
37.5°	1018.0	1052.4	1069.5	840.7	632.9	486.1	377.5	312.7	286.0
40°	901.7	930.3	943.7	741.6	552.9	417.5	322.2	261.2	234.5
42.5°	789.3	831.2	827.4	657.7	482.3	362.2	272.6	211.6	184.9
45°	705.4	734.0	722.5	570.0	408.0	305.0	221.1	164.0	139.2
47.5°	621.5	642.5	625.3	495.7	345.1	251.7	179.2	120.1	93.4
50°	552.9	562.4	539.5	421.3	287.9	205.9	135.4	80.1	76.3
52.5°	488.1	493.8	461.4	358.4	238.3	165.9	99.1	62.9	66.7
55°	434.7	432.8	396.5	303.1	196.4	127.7	66.7	57.2	61.0
57.5°	383.2	377.5	341.3	251.7	160.1	99.1	40.0	49.6	53.4
60°	337.4	331.7	289.8	207.8	127.7	74.4	32.4	43.8	47.7
62.5°	301.2	287.9	245.9	171.6	102.9	53.4	28.6	38.1	41.9
65°	261.2	249.7	209.7	139.2	80.1	38.1	24.8	32.4	36.2
67.5°	228.8	215.4	177.3	114.4	64.8	26.7	22.9	28.6	32.4
70°	196.4	184.9	146.8	91.5	47.7	17.2	19.1	24.8	28.6
72.5°	169.7	156.3	122.0	72.4	36.2	13.3	17.2	21.0	22.9
75°	139.2	127.7	97.2	55.3	24.8	11.4	13.3	17.2	19.1
77.5°	116.3	104.9	76.3	41.9	17.2	9.5	11.4	15.3	15.3
80°	89.6	80.1	57.2	28.6	11.4	5.7	9.5	11.4	11.4
82.5°	64.8	57.2	40.0	19.1	5.7	5.7	5.7	7.6	7.6
85°	43.8	38.1	24.8	11.4	3.8	3.8	3.8	3.8	3.8
87.5°	24.8	19.1	11.4	3.8	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

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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