

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: P837212

Luminaire Tested: HCSQ405D010-HM40525840-41SQMW

Issue Date: 5/17/2024

**Test Information**

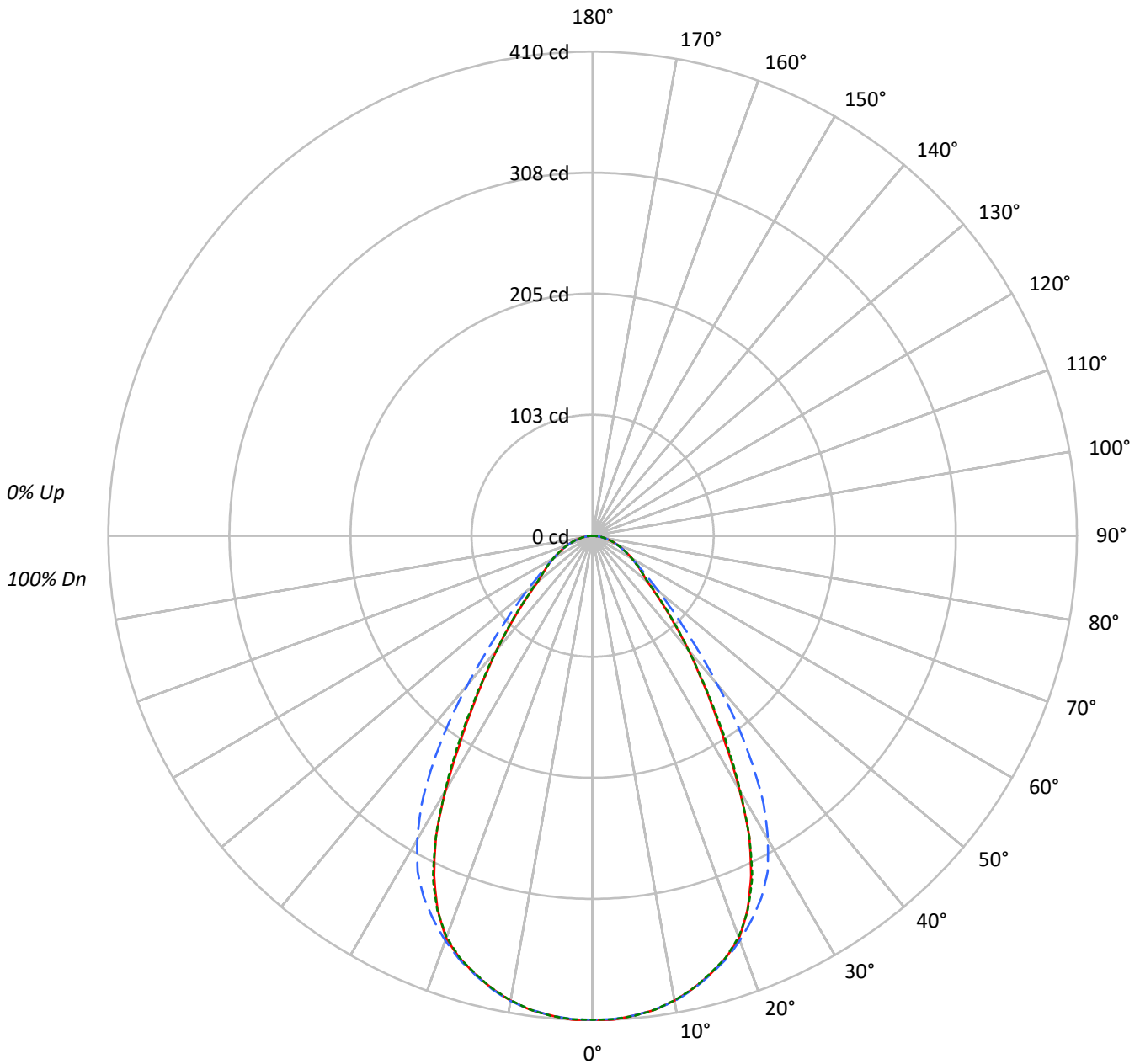
Test Method: LM-79-2019  
Report Number: P837212  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ405D010-HM40525840-41SQMW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 594.8 lumens  
Efficiency: N/A  
Efficacy: 99.1 lumens/watt  
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07  
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

TEST NUMBER: P837212  
CATALOG NUMBER: HCSQ405D010-HM40525840-41SQMW

### Luminous Intensity Polar Plot





TEST NUMBER: P837212

CATALOG NUMBER: HCSQ405D010-HM40525840-41SQMW

**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	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

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

	0°	45°	90°
0°	39709	39709	39709
5°	39647	39647	39676
10°	39318	39348	39289
15°	38553	38583	38492
20°	37392	37598	37268
25°	33938	36150	34183
30°	27854	33201	27966
35°	20944	27875	21240
40°	15947	20778	15909
45°	11906	14741	12125
50°	9073	10987	9269
55°	8175	8614	8175
60°	7459	7401	7401
65°	6785	6785	6785
70°	6316	6231	6231
75°	5839	5727	5839
80°	5356	5133	5356
85°	4557	4557	4557

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 14741 cd/sqm



TEST NUMBER: P837212

CATALOG NUMBER: HCSQ405D010-HM40525840-41SQMW

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.7	6.5
10°-20°	108.2	18.2
20°-30°	148.8	25.0
30°-40°	126.7	21.3
40°-50°	76.5	12.9
50°-60°	45.1	7.6
60°-70°	29.6	5.0
70°-80°	16.4	2.8
80°-90°	4.8	0.8
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°	295.7	49.7
0°-40°	422.4	71.0
0°-60°	544.0	91.5
0°-90°	594.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	594.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	410	410	410	410	410	
5°	408	408	408	407	408	39
15°	384	385	385	384	384	108
25°	318	327	338	328	320	144
35°	177	195	236	200	180	112
45°	87	96	108	97	88	68
55°	48	49	51	49	48	44
65°	30	30	30	30	30	30
75°	16	16	15	15	16	17
85°	4	4	4	4	4	5
90°	0	0	0	0	0	

TEST NUMBER: P837212

CATALOG NUMBER: HCSQ405D010-HM40525840-41SQMW

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	409.9	409.9	409.9	409.9	409.9
2.5°	410.2	409.2	409.6	409.2	409.6
5°	407.7	408.0	407.7	407.3	408.0
7.5°	404.8	404.5	404.5	404.1	404.8
10°	399.7	399.1	400.0	399.4	399.4
12.5°	392.7	393.6	393.3	393.3	392.7
15°	384.4	385.4	384.7	384.4	383.8
17.5°	374.8	375.5	375.8	374.5	374.5
20°	362.7	364.0	364.7	362.4	361.5
22.5°	342.7	348.4	351.9	348.1	343.3
25°	317.5	327.4	338.2	328.0	319.8
27.5°	287.3	301.3	320.7	303.5	287.3
30°	249.0	269.8	296.8	272.0	250.0
32.5°	209.6	231.5	269.4	235.4	214.0
35°	177.1	194.9	235.7	200.3	179.6
37.5°	149.0	164.3	200.3	167.8	150.6
40°	126.1	138.2	164.3	139.8	125.8
42.5°	104.1	115.6	133.1	117.2	105.4
45°	86.9	96.2	107.6	97.1	88.5
47.5°	72.3	79.9	88.2	79.9	73.2
50°	60.2	66.2	72.9	66.2	61.5
52.5°	53.8	55.7	60.2	56.1	53.8
55°	48.4	49.4	51.0	49.4	48.4
57.5°	43.3	43.9	43.6	43.6	43.3
60°	38.5	38.9	38.2	38.5	38.2
62.5°	34.1	34.1	33.4	34.1	33.8
65°	29.6	29.9	29.6	29.6	29.6
67.5°	25.8	25.8	25.5	25.8	25.8
70°	22.3	22.3	22.0	22.3	22.0
72.5°	18.8	18.8	18.5	18.5	18.5
75°	15.6	15.6	15.3	15.3	15.6
77.5°	12.4	12.4	12.1	12.4	12.4
80°	9.6	9.6	9.2	9.6	9.6
82.5°	6.7	6.7	6.7	7.0	7.0
85°	4.1	4.1	4.1	4.1	4.1
87.5°	1.9	1.9	1.9	1.9	2.2
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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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

Scaled Data Report







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

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

Scaled Data Report



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

Scaled Data Report



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

Scaled Data Report



(END OF REPORT)