

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: P837361

Luminaire Tested: HCSQ420D010-HM40525830-41SQMB

Issue Date: 5/17/2024



**Test Information**

Test Method: LM-79-2019  
Report Number: P837361  
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: HCSQ420D010-HM40525830-41SQMB  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE BLACK TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: -

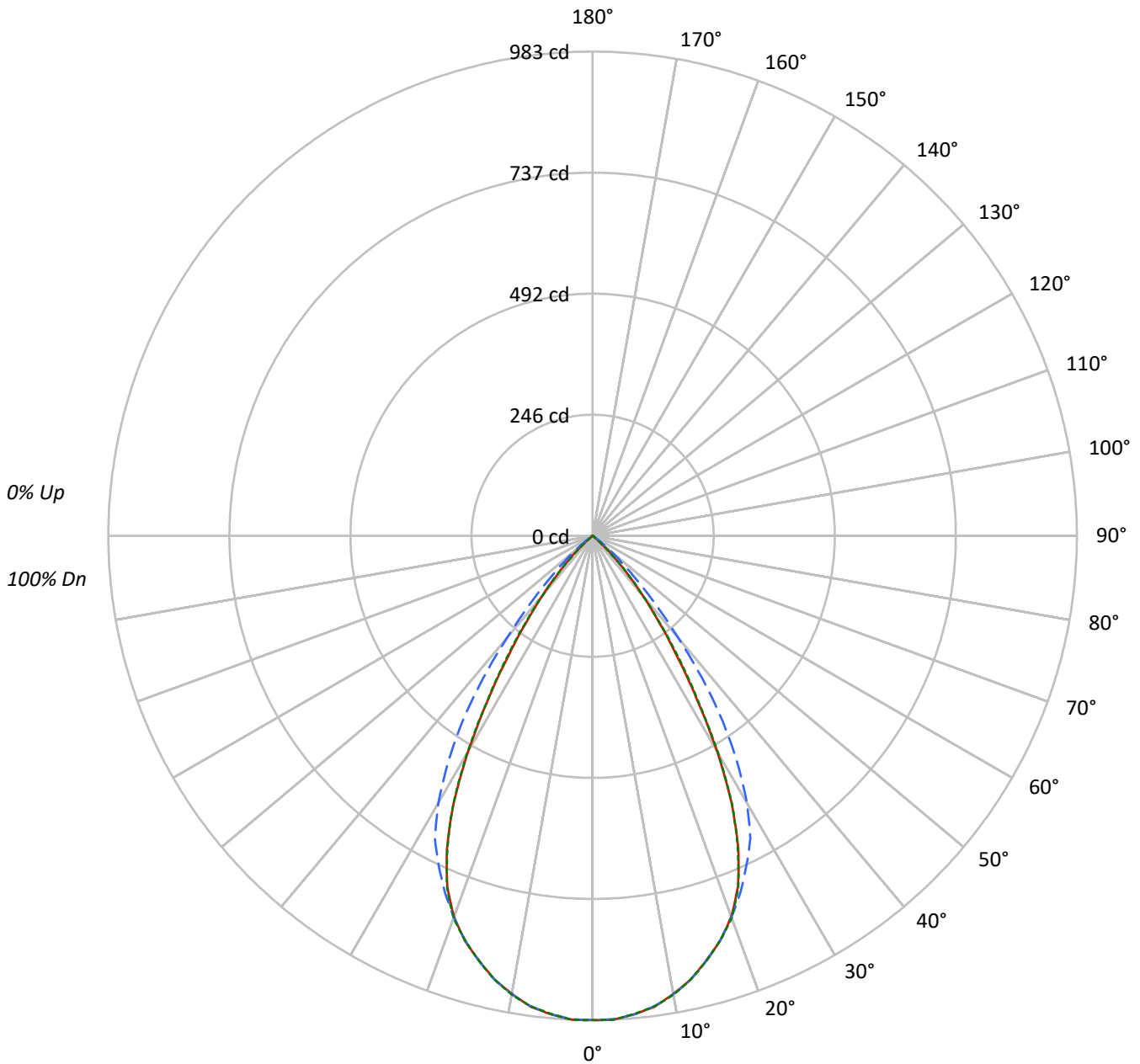
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 982.2 lumens  
Efficiency: N/A  
Efficacy: 49.1 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): 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

TEST NUMBER: P837361  
CATALOG NUMBER: HCSQ420D010-HM40525830-41SQMB

### Luminous Intensity Polar Plot





TEST NUMBER: P837361

CATALOG NUMBER: HCSQ420D010-HM40525830-41SQMB

**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°	95267	95267	95267
5°	94824	94824	94737
10°	92871	92960	93058
15°	89471	89561	89561
20°	84825	84917	85103
25°	74791	78981	74492
30°	56423	70003	56938
35°	35384	54484	36567
40°	19956	33917	19956
45°	8371	17125	8248
50°	693	6601	829
55°	304	1385	304
60°	349	174	349
65°	206	206	206
70°	255	255	255
75°	337	337	337
80°	0	502	502
85°	0	1000	1000

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 17125 cd/sqm



TEST NUMBER: P837361

CATALOG NUMBER: HCSQ420D010-HM40525830-41SQMB

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.2	9.4
10°-20°	250.7	25.5
20°-30°	325.3	33.1
30°-40°	231.2	23.5
40°-50°	75.0	7.6
50°-60°	5.4	0.5
60°-70°	0.9	0.1
70°-80°	0.9	0.1
80°-90°	0.6	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°	668.1	68.0
0°-40°	899.4	91.6
0°-60°	979.7	99.7
0°-90°	982.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	982.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	983	983	983	983	983	
5°	975	976	975	975	974	92
15°	892	895	893	895	893	251
25°	700	718	739	722	697	313
35°	299	354	461	358	309	191
45°	61	87	125	88	60	51
55°	2	2	8	2	2	2
65°	1	1	1	1	1	1
75°	1	1	1	1	1	1
85°	0	0	1	1	1	0
90°	0	0	0	0	0	



TEST NUMBER: P837361

CATALOG NUMBER: HCSQ420D010-HM40525830-41SQMB

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	983.4	983.4	983.4	983.4	983.4
2.5°	983.4	983.4	982.4	982.4	983.4
5°	975.1	976.1	975.1	975.1	974.2
7.5°	964.2	964.2	963.3	963.3	963.3
10°	944.1	945.0	945.0	945.0	946.0
12.5°	922.2	922.2	922.2	922.2	922.2
15°	892.1	894.9	893.0	894.9	893.0
17.5°	862.0	862.0	861.1	862.9	861.1
20°	822.8	822.8	823.7	825.5	825.5
22.5°	770.8	779.9	783.6	781.8	772.6
25°	699.7	717.9	738.9	721.6	696.9
27.5°	610.3	644.9	693.3	650.4	612.1
30°	504.4	556.4	625.8	558.3	509.0
32.5°	395.0	455.2	547.3	459.7	398.6
35°	299.2	353.9	460.7	357.6	309.2
37.5°	220.8	270.9	365.8	272.7	227.1
40°	157.8	194.3	268.2	197.9	157.8
42.5°	101.3	137.7	188.8	138.7	105.8
45°	61.1	86.7	125.0	88.5	60.2
47.5°	27.4	49.3	77.5	51.1	27.4
50°	4.6	20.1	43.8	21.0	5.5
52.5°	2.7	3.6	21.0	3.6	2.7
55°	1.8	1.8	8.2	1.8	1.8
57.5°	1.8	1.8	1.8	1.8	1.8
60°	1.8	0.9	0.9	0.9	1.8
62.5°	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9
77.5°	0.9	0.9	0.9	0.9	0.9
80°	0.0	0.9	0.9	0.9	0.9
82.5°	0.0	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.9	0.9	0.9
87.5°	0.0	0.0	0.9	0.9	0.9
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)