

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: HALO

Report Number: P295518

Luminaire Tested: **HU1109D9SMB-2700K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P295518  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1904-227-2)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HU1109D9SMB-2700K  
Description: HALO HU11 UNDERCABINET LED FIXTURE  
9-INCH, SELECTABLE CCT, MATTE BLACK FINISH  
Light Source: (56) 90 CRI LEDS TUNED TO 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

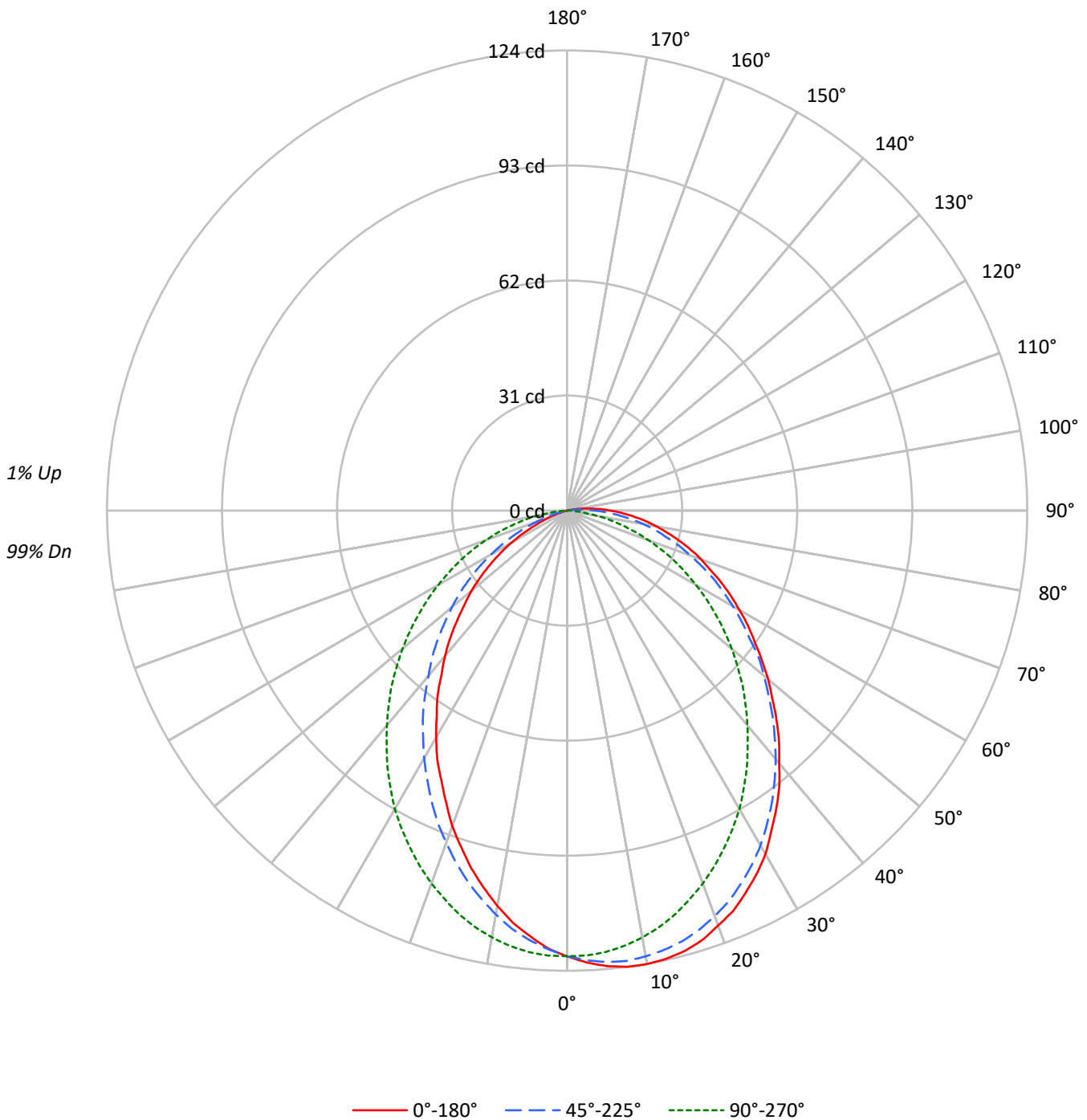
Lumens per Lamp: N/A  
Luminaire Lumens: 285.0 lumens  
Efficiency: N/A  
Efficacy: 63.3 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.16 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.75' x L: 0.08' x H: 0.04')  
CIE Type: Direct

Input Watts (W): 4.5  
Input Voltage (V): 120  
Input Current (Ain): 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: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	109	104	100	96	106	102	98	95	97	94	91	93	91	89	90	88	86	84
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	79	76	73	71
3	91	81	73	67	89	79	72	66	76	70	65	73	68	64	71	66	62	60
4	84	72	64	57	81	71	63	57	68	61	56	66	60	55	64	58	54	52
5	77	65	56	50	75	64	55	49	61	54	49	59	53	48	58	52	48	45
6	72	59	50	44	70	58	49	43	56	48	43	54	48	43	52	47	42	40
7	66	53	45	39	65	52	44	39	51	44	38	49	43	38	48	42	38	36
8	62	49	41	35	60	48	40	35	47	40	34	45	39	34	44	38	34	32
9	58	45	37	32	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	55	42	34	29	53	41	34	29	40	33	28	39	33	28	38	32	28	26

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

	0°	90°	180°
0°	20684	20684	20684
5°	20406	20542	19065
10°	19944	20228	17389
15°	19308	19782	15692
20°	18452	19204	14033
25°	17521	18560	12359
30°	16497	17901	10895
35°	15292	17080	9484
40°	14080	16239	8109
45°	12957	15437	6820
50°	11870	14550	5658
55°	10808	13603	4432
60°	9894	12600	3212
65°	9007	11543	1927
70°	8146	10179	849
75°	7244	8488	70
80°	6309	6410	0
85°	5238	3142	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	11.3	4.0
10°-20°	31.5	11.0
20°-30°	45.4	15.9
30°-40°	51.2	18.0
40°-50°	49.3	17.3
50°-60°	41.4	14.5
60°-70°	29.5	10.3
70°-80°	16.6	5.8
80°-90°	7.1	2.5
90°-100°	1.7	0.6
100°-110°	0.1	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°	88.2	30.9
0°-40°	139.4	48.9
0°-60°	230.0	80.7
0°-90°	283.2	99.4
90°-120°	1.8	0.6
90°-150°	1.8	0.6
90°-180°	2.0	0.7
0°-180°	285.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	120	120	120	120	120	
5°	123	122	119	116	115	12
15°	123	120	113	104	100	35
25°	114	111	100	86	80	52
35°	98	96	84	68	61	61
45°	80	78	67	49	42	62
55°	62	60	49	32	25	55
65°	46	44	32	16	10	45
75°	31	28	15	3	0	33
85°	18	14	3	0	0	16
90°	12	8	0	0	0	6
95°	6	3	0	0	0	4
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	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°	120.1	120.1	120.1	120.1	120.1	120.1	120.1	120.1	120.1
2.5°	121.9	121.6	121.3	120.7	120.0	119.3	118.3	118.0	118.1
5°	123.2	122.7	122.1	120.9	119.4	117.9	116.2	115.2	115.1
7.5°	124.0	123.3	122.4	120.6	118.3	116.0	113.7	112.5	112.0
10°	124.1	123.5	122.0	119.8	116.8	113.7	110.5	108.7	108.2
12.5°	123.7	122.9	121.2	118.5	114.9	110.9	107.1	104.9	104.0
15°	122.8	122.0	120.1	116.9	112.6	107.8	103.5	100.7	99.8
17.5°	121.3	120.5	118.4	114.9	109.8	104.9	99.5	96.3	95.0
20°	119.0	118.4	116.3	112.5	106.9	101.3	95.2	91.6	90.5
22.5°	116.8	116.0	113.9	109.6	103.7	97.3	91.1	86.9	85.2
25°	113.7	113.0	110.9	106.8	100.2	93.2	86.4	82.1	80.2
27.5°	110.5	109.9	107.7	103.5	96.6	89.2	81.7	76.9	75.8
30°	106.9	106.3	104.2	99.8	92.9	85.1	77.1	72.0	70.6
32.5°	102.4	102.3	100.2	96.0	88.6	80.5	72.2	67.3	65.4
35°	98.2	97.8	96.2	92.0	84.4	75.9	67.8	62.6	60.9
37.5°	93.9	93.2	91.8	87.8	79.9	71.1	62.9	57.7	55.6
40°	88.9	88.6	87.4	83.4	75.6	66.6	58.1	52.7	51.2
42.5°	84.5	84.1	82.8	78.9	71.2	62.1	53.9	48.4	46.7
45°	79.8	79.5	78.3	74.5	66.9	57.6	49.4	44.0	42.0
47.5°	75.0	74.8	73.6	70.1	62.3	53.0	44.7	39.4	37.5
50°	70.7	70.4	69.2	65.5	57.9	48.5	40.6	35.1	33.7
52.5°	66.1	65.7	65.1	61.0	53.4	44.2	36.3	31.2	29.4
55°	61.7	61.6	60.0	56.5	48.9	39.8	32.1	26.7	25.3
57.5°	57.8	57.2	55.8	52.2	44.5	35.6	27.9	23.1	21.2
60°	53.6	53.2	51.6	47.7	40.1	31.4	23.7	18.9	17.4
62.5°	49.7	49.2	47.4	43.3	35.8	27.0	19.7	15.4	13.4
65°	45.8	45.1	43.5	39.0	31.7	23.0	15.8	11.4	9.8
67.5°	41.7	41.4	39.3	34.9	27.5	18.9	12.3	8.3	6.6
70°	38.4	37.5	35.3	30.7	23.3	15.2	8.5	4.9	4.0
72.5°	34.9	34.0	31.6	26.8	19.4	11.4	5.4	2.5	1.5
75°	31.2	30.5	27.7	22.7	15.4	7.9	2.8	0.6	0.3
77.5°	27.7	26.9	24.3	18.9	11.9	4.9	0.8	0.0	0.0
80°	24.4	23.5	20.8	15.5	8.5	2.3	0.1	0.0	0.0
82.5°	21.2	20.2	17.2	11.9	5.1	0.6	0.0	0.0	0.0
85°	17.8	16.9	13.7	8.5	2.6	0.1	0.0	0.0	0.0
87.5°	14.7	13.8	10.7	5.7	0.8	0.0	0.0	0.0	0.0
90°	11.7	10.7	7.6	3.0	0.1	0.0	0.0	0.0	0.0
92.5°	8.9	7.9	4.9	1.1	0.0	0.0	0.0	0.0	0.0
95°	6.2	5.2	2.7	0.2	0.0	0.1	0.0	0.0	0.0
97.5°	3.8	2.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.9	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
102.5°	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
115°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
117.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)