

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: P295519

Luminaire Tested: **HU1109D9SMB-3000K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P295519
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-3000K
Description: HALO HU11 UNDERCABINET LED FIXTURE
9-INCH, SELECTABLE CCT, MATTE BLACK FINISH
Light Source: (56) 90 CRI LEDS TUNED TO 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

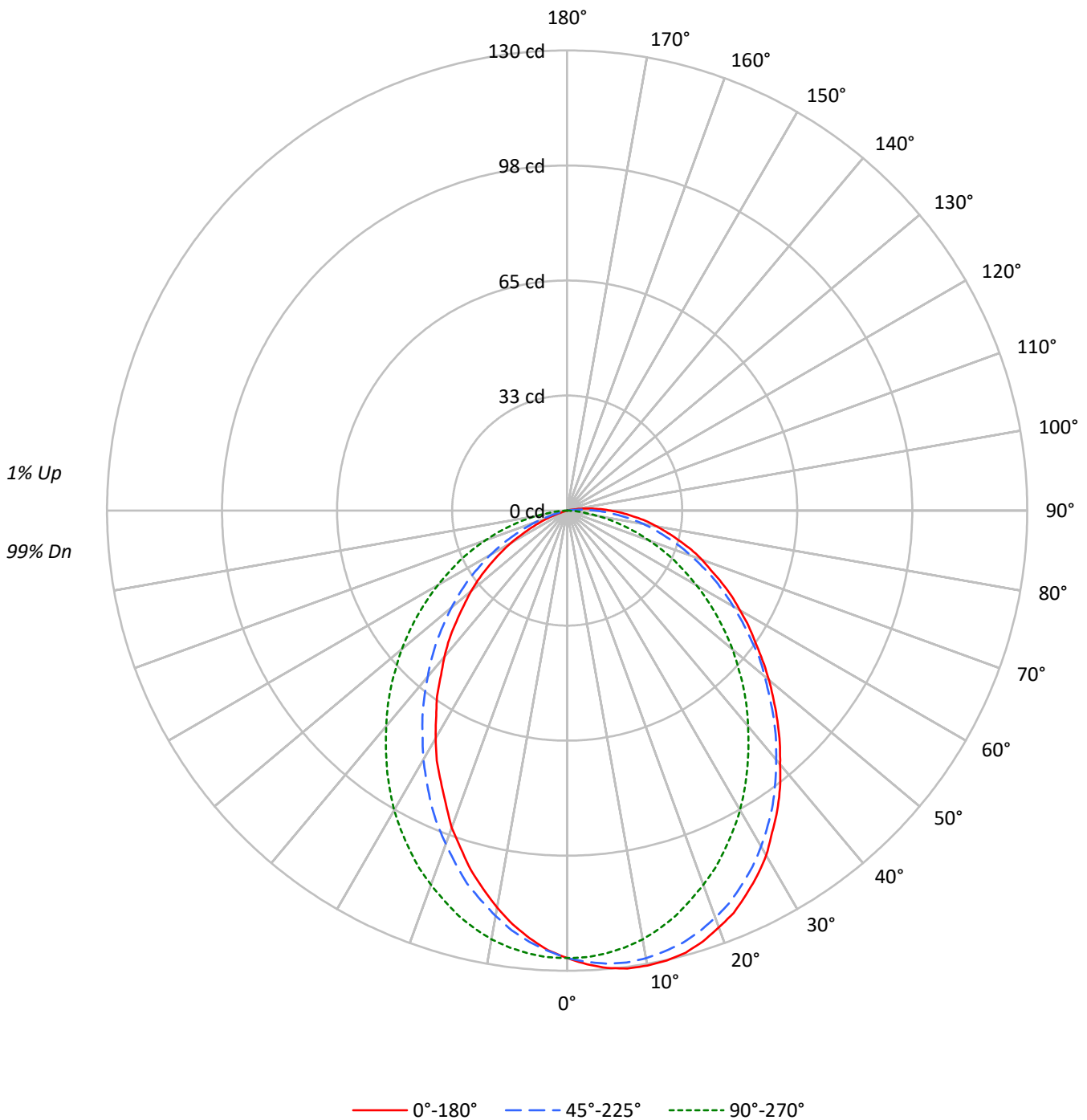
Lumens per Lamp: N/A
Luminaire Lumens: 300.0 lumens
Efficiency: N/A
Efficacy: 66.7 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.16 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 0.75' x L: 0.08' x H: 0.04')
CIE Type: Direct

Input Watts (W): 4.5
Input Voltage (V): 120
Input Current (A_{in}): 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°	21769	21769	21769
5°	21483	21609	20092
10°	20973	21302	18305
15°	20330	20818	16525
20°	19429	20210	14777
25°	18446	19542	13006
30°	17361	18825	11466
35°	16118	17971	9982
40°	14824	17077	8536
45°	13639	16244	7177
50°	12491	15329	5943
55°	11369	14327	4660
60°	10411	13260	3378
65°	9479	12162	2045
70°	8591	10703	891
75°	7615	8984	70
80°	6619	6712	0
85°	5532	3263	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	11.9	4.0
10°-20°	33.1	11.0
20°-30°	47.8	15.9
30°-40°	53.9	18.0
40°-50°	51.9	17.3
50°-60°	43.5	14.5
60°-70°	31.0	10.3
70°-80°	17.5	5.8
80°-90°	7.5	2.5
90°-100°	1.8	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°	92.8	30.9
0°-40°	146.7	48.9
0°-60°	242.1	80.7
0°-90°	298.1	99.4
90°-120°	1.9	0.6
90°-150°	1.9	0.6
90°-180°	2.0	0.7
0°-180°	300.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	126	126	126	126	126	
5°	130	128	126	122	121	12
15°	129	126	118	109	105	36
25°	120	117	106	91	84	55
35°	104	101	89	71	64	65
45°	84	82	70	52	44	65
55°	65	63	52	34	27	58
65°	48	46	33	17	10	48
75°	33	29	16	3	0	35
85°	19	14	3	0	0	17
90°	12	8	0	0	0	7
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°	126.4	126.4	126.4	126.4	126.4	126.4	126.4	126.4	126.4
2.5°	128.3	127.9	127.6	127.2	126.3	125.6	124.5	124.2	124.3
5°	129.7	129.2	128.5	127.4	125.6	124.1	122.3	121.4	121.3
7.5°	130.5	129.8	128.8	127.0	124.5	122.1	119.6	118.4	117.9
10°	130.5	130.0	128.4	126.1	123.0	119.7	116.3	114.4	113.9
12.5°	130.2	129.5	127.5	124.7	120.9	116.7	112.7	110.4	109.5
15°	129.3	128.4	126.4	123.1	118.5	113.5	109.1	106.0	105.1
17.5°	127.6	126.8	124.6	121.0	115.5	110.4	104.7	101.4	100.0
20°	125.3	124.6	122.4	118.4	112.5	106.6	100.2	96.4	95.3
22.5°	123.0	122.0	119.9	115.5	109.3	102.4	95.9	91.5	89.6
25°	119.7	119.0	116.7	112.4	105.5	98.0	91.1	86.4	84.4
27.5°	116.3	115.6	113.4	108.9	101.7	93.9	86.0	80.9	79.7
30°	112.5	111.9	109.6	105.1	97.7	89.5	81.2	75.8	74.3
32.5°	107.8	107.7	105.5	101.1	93.3	84.7	76.0	70.8	68.8
35°	103.5	103.0	101.3	96.8	88.8	79.8	71.3	65.9	64.1
37.5°	98.8	98.1	96.6	92.4	84.1	74.8	66.2	60.7	58.5
40°	93.6	93.4	91.9	87.8	79.5	70.1	61.3	55.5	53.9
42.5°	88.9	88.5	87.3	83.1	75.0	65.3	56.7	50.9	49.3
45°	84.0	83.7	82.5	78.4	70.4	60.6	52.0	46.3	44.2
47.5°	79.1	78.7	77.4	73.7	65.5	55.7	47.1	41.5	39.5
50°	74.4	74.1	72.8	69.0	61.0	51.1	42.7	37.1	35.4
52.5°	69.6	69.2	68.5	64.2	56.2	46.5	38.2	32.8	31.1
55°	64.9	64.8	63.3	59.4	51.5	41.9	33.8	28.1	26.6
57.5°	60.8	60.2	58.7	55.0	46.8	37.5	29.3	24.3	22.4
60°	56.4	55.9	54.3	50.2	42.2	33.1	25.0	19.8	18.3
62.5°	52.4	51.8	49.9	45.6	37.6	28.5	20.7	16.2	14.1
65°	48.2	47.5	45.8	41.1	33.4	24.2	16.6	12.0	10.4
67.5°	43.9	43.5	41.3	36.8	29.0	19.9	13.0	8.7	7.0
70°	40.5	39.5	37.2	32.3	24.5	16.0	9.0	5.1	4.2
72.5°	36.8	35.8	33.3	28.2	20.4	12.0	5.7	2.6	1.5
75°	32.8	32.1	29.1	23.9	16.3	8.3	2.9	0.7	0.3
77.5°	29.1	28.4	25.5	19.9	12.5	5.1	0.9	0.0	0.0
80°	25.6	24.7	21.9	16.4	8.9	2.4	0.1	0.0	0.0
82.5°	22.4	21.3	18.1	12.5	5.4	0.7	0.0	0.0	0.0
85°	18.8	17.8	14.4	9.0	2.7	0.1	0.0	0.0	0.0
87.5°	15.5	14.5	11.2	6.0	0.9	0.0	0.0	0.0	0.0
90°	12.3	11.2	8.0	3.2	0.1	0.0	0.0	0.0	0.0
92.5°	9.4	8.3	5.1	1.2	0.0	0.0	0.0	0.0	0.0
95°	6.5	5.5	2.8	0.2	0.0	0.1	0.0	0.0	0.0
97.5°	4.0	3.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0
100°	2.0	1.3	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)