

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: P601388

Luminaire Tested: **ML4DM08LSAWW95FS1E - TIR4D25AWW - TL43R2G_ TL44S2G_ 3000K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P601388
 Test Lab: COOPER LIGHTING SOLUTIONS
 Issue Date: 7/29/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4DM08LSAWW95FS1E - TIR4D25AWW - TL43R2G_ TL44S2G_ 3000K
 Description: DIRECT MOUNT, 25D WW OPTIC, DIFFUSE CLEAR LENS TRIM
 Light Source: (1) SELECTABLE LUMEN LED 95CRI / 3000K CCT
 Ballast/Driver: -

Summary

Lumens per Lamp: N/A
 Luminaire Lumens: 691.8 lumens
 Efficiency: N/A
 Efficacy: 67.2 lumens/watt
 Spacing Criteria (0/90/45): 1.33 / 0.62 / 0.83
 Luminous Opening: Circular (Dia: 0.21' x H: 0')
 CIE Type: Direct

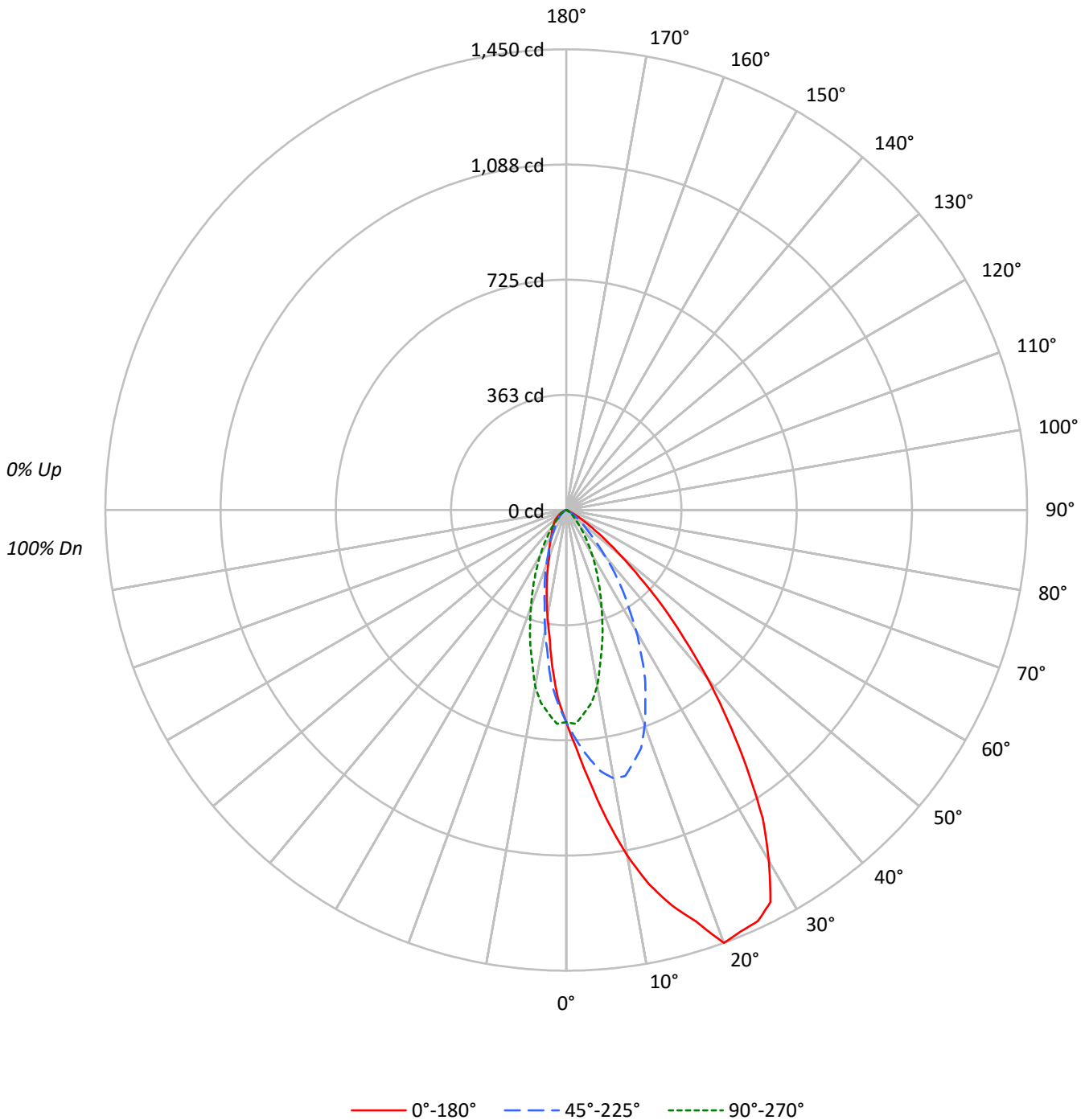
Input Watts (W): 10.3
 Input Voltage (V): NR
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT



Meas		Calibration Due Date	
Instrument	Identificatio		
Photometer	GONIO 1 11111111	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

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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	102	102	102	100
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85
3	101	94	88	84	99	92	87	83	89	85	82	87	83	80	85	82	79	78
4	95	87	81	76	93	85	80	75	83	78	75	81	77	74	79	76	73	71
5	89	80	74	69	88	79	73	69	78	72	68	76	71	68	74	70	67	65
6	84	75	68	64	83	74	68	63	72	67	63	71	66	62	70	65	62	60
7	80	70	63	59	78	69	63	58	68	62	58	66	62	58	65	61	57	56
8	76	65	59	54	74	65	58	54	64	58	54	62	57	54	61	57	53	52
9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48
10	68	58	51	47	67	57	51	47	56	51	47	55	50	47	55	50	47	45

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	210773	210773	210773
5°	272627	203622	157345
10°	354015	180262	108535
15°	421543	142726	77444
20°	487177	108538	52253
25°	497214	81702	42924
30°	464956	59323	33581
35°	381353	40128	29990
40°	284502	26134	26134
45°	191753	17639	22953
50°	112249	12920	19994
55°	59291	9194	15800
60°	28735	5305	12062
65°	11656	3586	8069
70°	5539	2216	4432
75°	2928	1464	0
80°	2182	2182	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.0	9.0
10°-20°	160.4	23.2
20°-30°	196.5	28.4
30°-40°	154.0	22.3
40°-50°	79.4	11.5
50°-60°	30.1	4.4
60°-70°	7.7	1.1
70°-80°	1.5	0.2
80°-90°	0.1	0.0
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°	418.9	60.6
0°-40°	572.9	82.8
0°-60°	682.4	98.6
0°-90°	691.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	691.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	668	668	668	668	668	
5°	860	779	642	544	496	90
15°	1290	821	437	262	237	368
25°	1427	586	234	122	123	648
35°	989	311	104	57	78	614
45°	429	108	40	31	51	334
55°	108	34	17	14	29	104
65°	16	6	5	5	11	19
75°	2	1	1	1	0	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	45°	67.5°	90°	112.5°	135°
0°	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5	667.5
2.5°	752.4	748.8	768.0	740.5	722.5	746.4	724.9	699.8	673.5	629.2	606.5
5°	860.1	862.5	866.1	857.7	854.1	851.7	778.7	710.6	642.4	575.4	544.3
7.5°	983.3	960.6	974.9	942.6	948.6	931.9	829.0	699.8	611.3	525.1	452.2
10°	1104.1	1079.0	1091.0	1061.0	1053.9	1039.5	857.7	671.1	562.2	446.2	384.0
12.5°	1207.0	1196.2	1184.3	1143.6	1129.2	1089.8	857.7	632.8	492.8	385.2	313.4
15°	1289.5	1278.8	1265.6	1213.0	1168.7	1134.0	820.6	579.0	436.6	330.2	262.0
17.5°	1357.7	1315.8	1317.0	1241.7	1203.4	1157.9	784.7	523.9	378.0	276.3	222.5
20°	1449.8	1373.3	1360.1	1280.0	1208.2	1157.9	721.3	464.1	323.0	233.3	183.0
22.5°	1435.5	1367.3	1382.8	1264.4	1187.8	1167.5	650.7	400.7	277.5	196.2	147.1
25°	1427.1	1378.0	1351.7	1224.9	1132.8	1068.2	586.1	350.5	234.5	161.5	122.0
27.5°	1391.2	1317.0	1277.6	1149.6	1047.9	995.3	509.6	296.7	196.2	128.0	102.9
30°	1275.2	1221.3	1179.5	1045.5	937.8	887.6	441.4	246.4	162.7	105.3	81.3
32.5°	1149.6	1102.9	1038.3	928.3	805.1	756.0	366.0	210.5	132.8	83.7	68.2
35°	989.3	951.0	890.0	778.7	660.3	638.8	311.0	168.7	104.1	67.0	57.4
37.5°	833.8	800.3	738.1	637.6	545.5	514.4	251.2	135.2	83.7	55.0	49.0
40°	690.2	650.7	610.1	512.0	436.6	403.1	192.6	105.3	63.4	44.3	41.9
42.5°	549.1	525.1	480.9	409.1	334.9	313.4	143.5	79.0	50.2	37.1	35.9
45°	429.4	404.3	362.5	314.6	252.4	235.7	107.7	61.0	39.5	29.9	31.1
47.5°	313.4	301.4	273.9	233.3	192.6	173.5	81.3	47.8	31.1	25.1	26.3
50°	228.5	216.5	203.4	166.3	134.0	129.2	61.0	37.1	26.3	20.3	21.5
52.5°	157.9	156.7	142.4	118.4	98.1	89.7	46.7	28.7	21.5	16.7	17.9
55°	107.7	106.5	96.9	82.5	69.4	63.4	33.5	21.5	16.7	13.2	14.4
57.5°	69.4	70.6	64.6	56.2	45.5	41.9	22.7	15.6	12.0	9.6	10.8
60°	45.5	45.5	39.5	35.9	28.7	26.3	15.6	10.8	8.4	7.2	8.4
62.5°	27.5	28.7	25.1	20.3	17.9	15.6	9.6	7.2	6.0	4.8	6.0
65°	15.6	16.7	14.4	12.0	10.8	9.6	6.0	4.8	4.8	3.6	4.8
67.5°	9.6	9.6	8.4	7.2	6.0	6.0	3.6	3.6	3.6	3.6	3.6
70°	6.0	6.0	4.8	4.8	3.6	3.6	2.4	3.6	2.4	2.4	2.4
72.5°	3.6	3.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.2	1.2
75°	2.4	2.4	2.4	2.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	157.5°	180°
0°	667.5	667.5
2.5°	592.1	594.5
5°	510.8	496.4
7.5°	424.7	401.9
10°	343.3	338.5
12.5°	289.5	283.5
15°	242.8	236.9
17.5°	203.4	192.6
20°	169.9	155.5
22.5°	141.2	142.4
25°	120.8	123.2
27.5°	104.1	106.5
30°	87.3	92.1
32.5°	79.0	86.1
35°	68.2	77.8
37.5°	61.0	70.6
40°	53.8	63.4
42.5°	47.8	57.4
45°	41.9	51.4
47.5°	37.1	46.7
50°	31.1	40.7
52.5°	26.3	34.7
55°	21.5	28.7
57.5°	17.9	23.9
60°	14.4	19.1
62.5°	10.8	14.4
65°	7.2	10.8
67.5°	4.8	7.2
70°	3.6	4.8
72.5°	1.2	2.4
75°	0.0	0.0
77.5°	0.0	0.0
80°	0.0	0.0
82.5°	0.0	0.0
85°	0.0	0.0
87.5°	0.0	0.0
90°	0.0	0.0

(END OF REPORT)