

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: P601337

Luminaire Tested: **ML4DM06AWWD2W1E - 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: P601337  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Issue Date: 7/29/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML4DM06AWWD2W1E - TIR4D25AWW - TL43R2G\_ TL44S2G\_ 3000K  
 Description: DIRECT MOUNT, 25D WW OPTIC, DIFFUSE CLEAR LENS TRIM  
 Light Source: (1) SELECTABLE LUMEN LED D2W / 3000K CCT  
 Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 481.6 lumens  
 Efficiency: N/A  
 Efficacy: 58.0 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

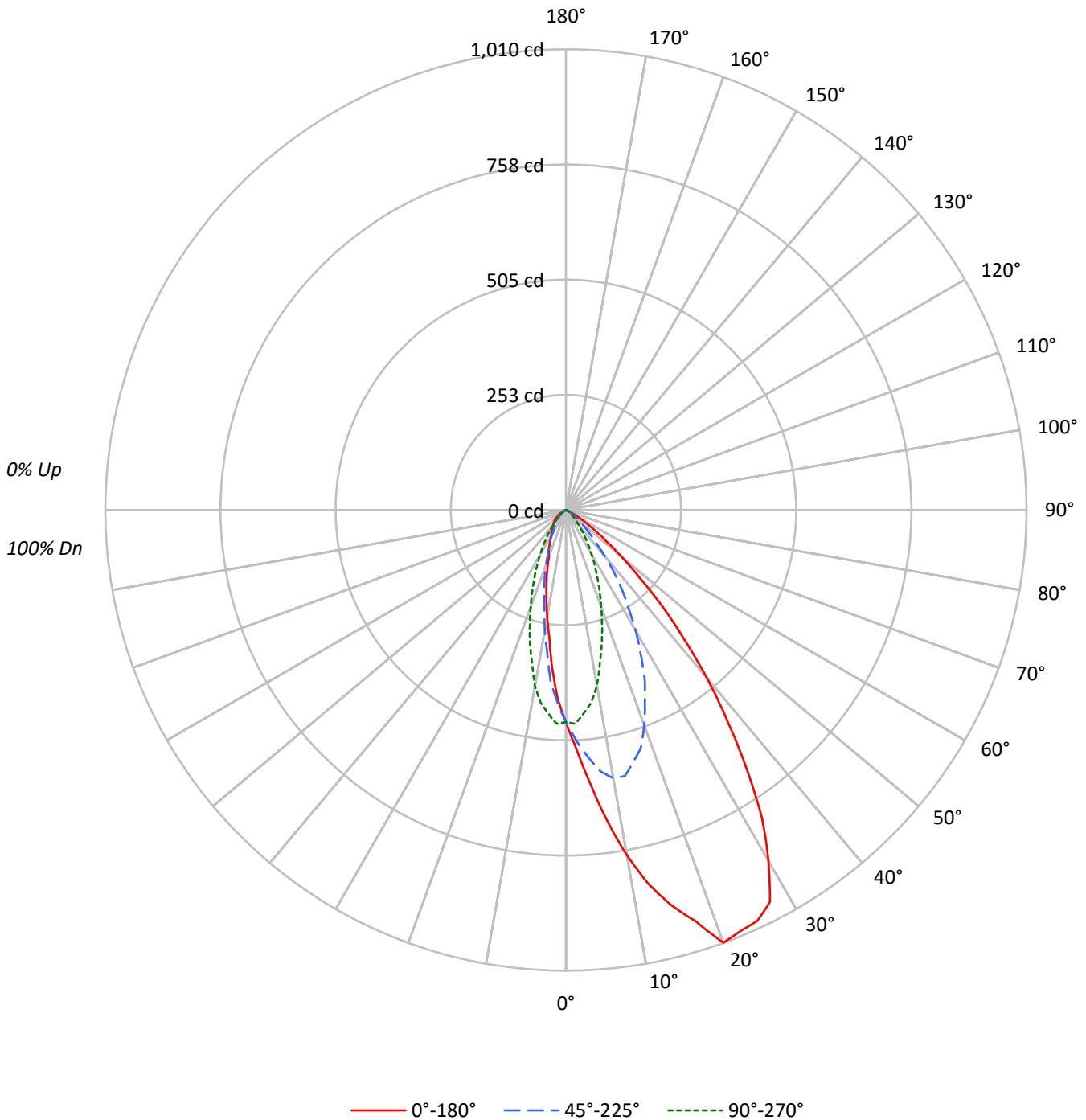
Input Watts (W): 8.3  
 Input Voltage (V): NR  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: NR  
 Total Harmonic Distortion (THDi): NR  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 25 FT



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°	146768	146768	146768
5°	189834	141781	109577
10°	246505	125529	75574
15°	293527	99379	53906
20°	339223	75573	36392
25°	346213	56860	29893
30°	323741	41311	23372
35°	265517	27947	20854
40°	198104	18178	18178
45°	133521	12280	15987
50°	78157	8990	13902
55°	41289	6441	11010
60°	20020	3663	8399
65°	8069	2466	5604
70°	3878	1570	3047
75°	2074	976	0
80°	1455	1455	0
85°	0	0	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.2	9.0
10°-20°	111.7	23.2
20°-30°	136.8	28.4
30°-40°	107.2	22.3
40°-50°	55.3	11.5
50°-60°	21.0	4.4
60°-70°	5.4	1.1
70°-80°	1.1	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°	291.7	60.6
0°-40°	398.9	82.8
0°-60°	475.2	98.7
0°-90°	481.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	481.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	465	465	465	465	465	
5°	599	542	447	379	346	62
15°	898	571	304	182	165	256
25°	994	408	163	85	86	451
35°	689	217	72	40	54	427
45°	299	75	28	22	36	233
55°	75	23	12	10	20	73
65°	11	4	3	3	8	13
75°	2	1	1	1	0	2
85°	0	0	0	0	0	0
90°	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°	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8	464.8
2.5°	523.9	521.4	534.7	515.6	503.1	519.7	504.7	487.3	468.9	438.1	422.3
5°	598.9	600.5	603.0	597.2	594.7	593.0	542.2	494.7	447.3	400.6	379.0
7.5°	684.6	668.8	678.8	656.3	660.5	648.8	577.2	487.3	425.6	365.6	314.8
10°	768.8	751.3	759.6	738.8	733.8	723.8	597.2	467.3	391.5	310.7	267.4
12.5°	840.4	832.9	824.6	796.3	786.3	758.8	597.2	440.6	343.2	268.2	218.2
15°	897.9	890.4	881.2	844.6	813.7	789.6	571.4	403.1	304.0	229.9	182.4
17.5°	945.3	916.2	917.0	864.6	837.9	806.3	546.4	364.8	263.2	192.4	154.9
20°	1009.5	956.2	947.0	891.2	841.2	806.3	502.2	323.2	224.9	162.4	127.4
22.5°	999.5	952.0	962.8	880.4	827.1	812.9	453.1	279.0	193.2	136.6	102.4
25°	993.7	959.5	941.2	852.9	788.8	743.8	408.1	244.0	163.2	112.4	85.0
27.5°	968.7	917.0	889.5	800.4	729.6	693.0	354.8	206.6	136.6	89.1	71.6
30°	887.9	850.4	821.2	728.0	653.0	618.0	307.3	171.6	113.3	73.3	56.6
32.5°	800.4	767.9	723.0	646.3	560.5	526.4	254.9	146.6	92.5	58.3	47.5
35°	688.8	662.2	619.7	542.2	459.8	444.8	216.6	117.4	72.5	46.6	40.0
37.5°	580.5	557.2	513.9	443.9	379.8	358.1	174.9	94.1	58.3	38.3	34.1
40°	480.6	453.1	424.8	356.5	304.0	280.7	134.1	73.3	44.1	30.8	29.2
42.5°	382.3	365.6	334.8	284.9	233.2	218.2	99.9	55.0	35.0	25.8	25.0
45°	299.0	281.5	252.4	219.1	175.7	164.1	75.0	42.5	27.5	20.8	21.7
47.5°	218.2	209.9	190.7	162.4	134.1	120.8	56.6	33.3	21.7	17.5	18.3
50°	159.1	150.8	141.6	115.8	93.3	90.0	42.5	25.8	18.3	14.2	15.0
52.5°	109.9	109.1	99.1	82.5	68.3	62.5	32.5	20.0	15.0	11.7	12.5
55°	75.0	74.1	67.5	57.5	48.3	44.1	23.3	15.0	11.7	9.2	10.0
57.5°	48.3	49.1	45.0	39.1	31.7	29.2	15.8	10.8	8.3	6.7	7.5
60°	31.7	31.7	27.5	25.0	20.0	18.3	10.8	7.5	5.8	5.0	5.8
62.5°	19.2	20.0	17.5	14.2	12.5	10.8	6.7	5.0	4.2	3.3	4.2
65°	10.8	11.7	10.0	8.3	7.5	6.7	4.2	3.3	3.3	2.5	3.3
67.5°	6.7	6.7	5.8	5.0	4.2	4.2	2.5	2.5	2.5	2.5	2.5
70°	4.2	4.2	3.3	3.3	2.5	2.5	1.7	2.5	1.7	1.7	1.7
72.5°	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.8	0.8
75°	1.7	1.7	1.7	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.0
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	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°	464.8	464.8
2.5°	412.3	414.0
5°	355.7	345.7
7.5°	295.7	279.9
10°	239.0	235.7
12.5°	201.6	197.4
15°	169.1	164.9
17.5°	141.6	134.1
20°	118.3	108.3
22.5°	98.3	99.1
25°	84.1	85.8
27.5°	72.5	74.1
30°	60.8	64.1
32.5°	55.0	60.0
35°	47.5	54.1
37.5°	42.5	49.1
40°	37.5	44.1
42.5°	33.3	40.0
45°	29.2	35.8
47.5°	25.8	32.5
50°	21.7	28.3
52.5°	18.3	24.2
55°	15.0	20.0
57.5°	12.5	16.7
60°	10.0	13.3
62.5°	7.5	10.0
65°	5.0	7.5
67.5°	3.3	5.0
70°	2.5	3.3
72.5°	0.8	1.7
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)