

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: P601255

Luminaire Tested: **ML408LSNFL95FS1E - TIR4D25NFL - TL41R\_ TL42S\_ 3000K**

Issue Date: 7/29/2022

Tested By:

Approved By:



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**Test Information**

Test Method: LM-79-08  
 Report Number: P601255  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Issue Date: 7/29/2022  
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
 Product Line: HALO  
 Catalog Number: ML408LSNFL95FS1E - TIR4D25NFL - TL41R\_ TL42S\_ 3000K  
 Description: RETROFIT, 25D OPTIC, OPEN TRIM  
 Light Source: (1) SELECTABLE LUMEN LED 95CRI / 3000K CCT  
 Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 1003.6 lumens  
 Efficiency: N/A  
 Efficacy: 97.4 lumens/watt  
 Spacing Criteria (0/90/45): 0.43 / 0.43 / 0.46  
 Luminous Opening: Circular (Dia: 0.21' x H: 0')  
 CIE Type: Direct

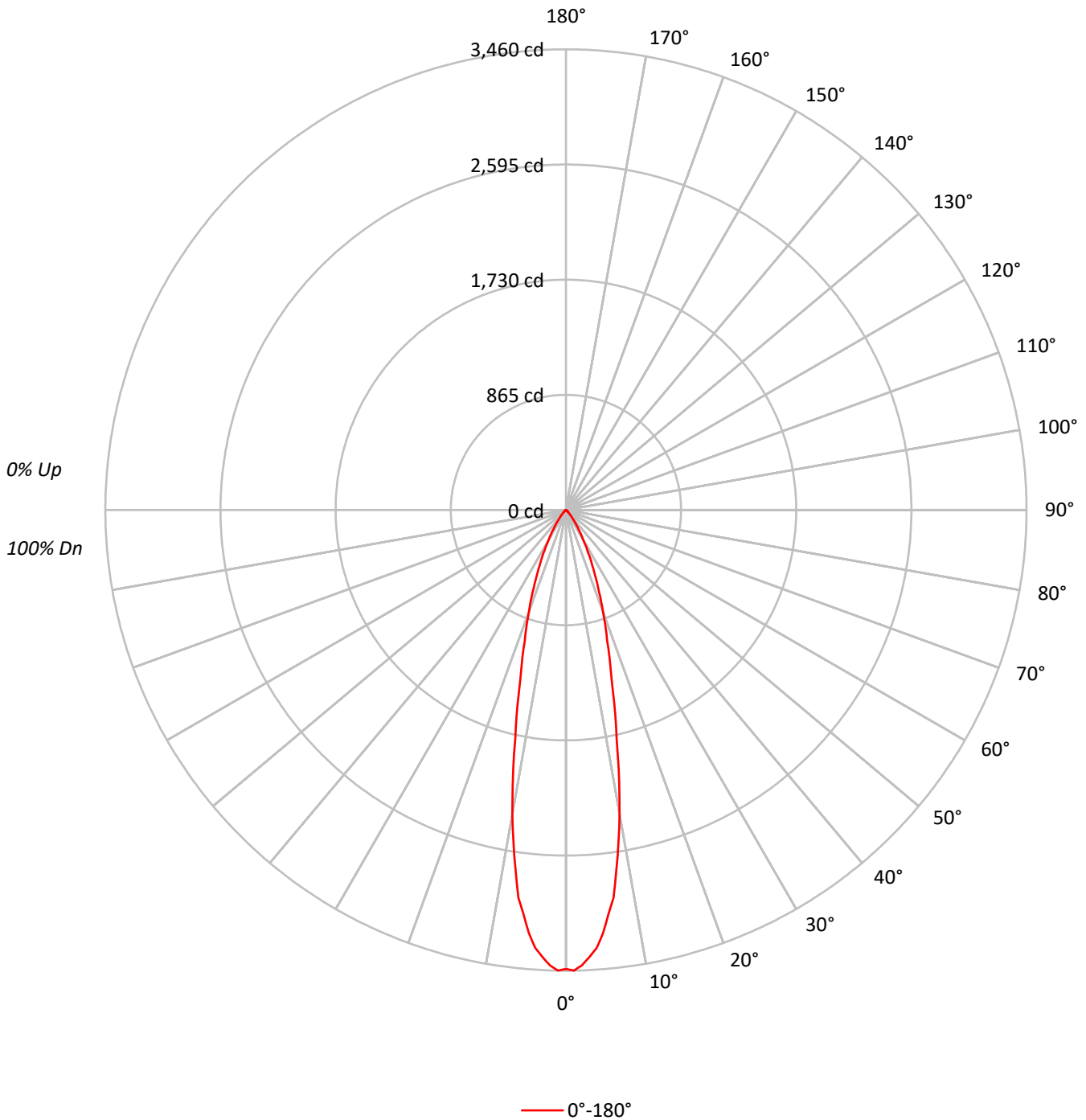
Input Watts (W): 10.3  
 Input Voltage (V): NR  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: NR  
 Total Harmonic Distortion (THDi): NR  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 25 FT



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	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	115	112	110	108	112	110	108	107	106	105	103	102	101	100	99	98	97	97	98	97	96
2	110	106	103	100	108	105	102	99	101	99	97	98	97	95	96	94	93	93	96	94	91
3	106	101	97	94	104	100	96	93	97	94	91	95	92	90	93	90	89	89	93	90	87
4	102	96	92	88	101	95	91	88	93	90	87	91	88	86	89	87	85	85	89	87	84
5	98	92	87	84	97	91	87	83	89	86	83	88	84	82	86	84	81	81	86	84	80
6	95	88	83	80	94	87	83	80	86	82	79	85	81	78	83	80	78	78	83	80	77
7	92	84	80	76	91	84	79	76	83	79	76	82	78	75	81	77	75	75	81	77	74
8	89	81	76	73	88	81	76	73	80	76	73	79	75	72	78	75	72	72	78	75	71
9	86	78	74	70	85	78	73	70	77	73	70	76	72	70	75	72	70	70	75	72	69
10	83	75	71	68	82	75	71	68	74	70	68	74	70	67	73	70	67	67	73	70	66

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

	0°
0°	1088727
5°	1011519
10°	743652
15°	433769
20°	273697
25°	168525
30°	96222
35°	52040
40°	24608
45°	12280
50°	7025
55°	3303
60°	1516
65°	897
70°	1108
75°	0
80°	0
85°	0

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	276.5	27.5
10°-20°	381.4	38.0
20°-30°	225.9	22.5
30°-40°	88.4	8.8
40°-50°	23.6	2.4
50°-60°	6.1	0.6
60°-70°	1.6	0.2
70°-80°	0.2	0.0
80°-90°	0.0	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°	883.8	88.1
0°-40°	972.2	96.9
0°-60°	1001.8	99.8
0°-90°	1003.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1003.6	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	3448	
5°	3191	276
15°	1327	381
25°	484	226
35°	135	88
45°	28	24
55°	6	6
65°	1	2
75°	0	0
85°	0	0
90°	0	

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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	3447.9
1°	3459.9
2°	3421.7
3°	3361.9
4°	3298.6
5°	3191.2
6°	3051.4
7°	2933.2
8°	2725.4
9°	2524.7
10°	2319.3
12.5°	1761.6
15°	1326.9
17.5°	1029.5
20°	814.5
22.5°	631.8
25°	483.7
27.5°	361.9
30°	263.9
32.5°	192.3
35°	135.0
37.5°	89.6
40°	59.7
42.5°	39.4
45°	27.5
47.5°	20.3
50°	14.3
52.5°	9.6
55°	6.0
57.5°	3.6
60°	2.4
62.5°	2.4
65°	1.2
67.5°	1.2
70°	1.2
72.5°	0.0
75°	0.0
77.5°	0.0
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0
90°	0.0

(END OF REPORT)