

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P300511

Luminaire Tested: **ML4D09\_27D2WE - TIR45FL40 - TL43R2GGBBB - TL44S2GGBBB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P300511  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1902-156-23)  
Test Lab: INNOVATION CENTER(G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: ML4D09\_27D2WE - TIR45FL40 - TL43R2GGBBB - TL44S2GGBBB  
Description: ML4 2700K, 900LM DIM-TO-WARM, 40 DEG FL OPTIC, WITH ROUND/SQUARE  
DIFFUSED CLEAR LENS, GERMAN BRONZE FLANGE, BLACK LENS FRAME  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 507.0 lumens  
Efficiency: N/A  
Efficacy: 45.3 lumens/watt  
Spacing Criteria (0/90/45): 0.58 / 0.58 / 0.57  
Luminous Opening: Circular (Dia: 0.19' x H: 0')  
CIE Type: Direct

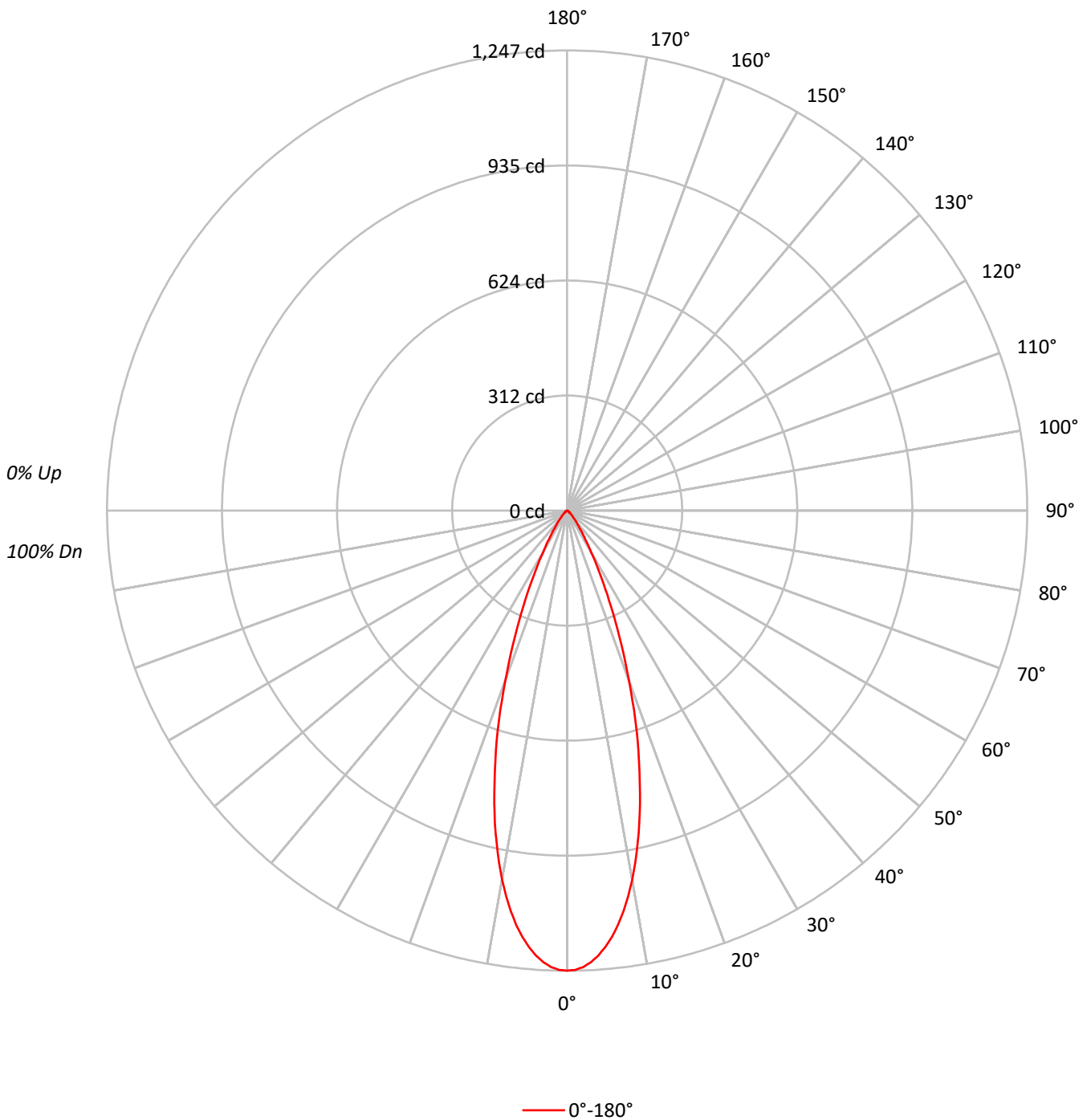
Input Watts (W): 11.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95		
2	110	105	102	99	108	104	101	98	101	98	96	98	96	94	95	93	92	90		
3	105	100	96	92	103	98	95	91	96	93	90	94	91	89	91	89	87	86		
4	101	95	90	86	99	94	89	86	92	88	85	90	87	84	88	85	83	82		
5	97	90	85	82	96	89	85	81	88	84	81	86	83	80	84	82	79	78		
6	93	86	81	77	92	85	81	77	84	80	77	82	79	76	81	78	76	74		
7	90	82	77	74	89	82	77	73	80	76	73	79	76	73	78	75	72	71		
8	87	79	74	70	86	78	73	70	77	73	70	76	72	70	75	72	69	68		
9	84	76	71	67	83	75	70	67	74	70	67	73	70	67	73	69	67	65		
10	81	73	68	65	80	72	68	64	71	67	64	71	67	64	70	67	64	63		

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

	0°
0°	486043
5°	464694
10°	401982
15°	307168
20°	203152
25°	115491
30°	58833
35°	29648
40°	16386
45°	9979
50°	6125
55°	4078
60°	3119
65°	1845
70°	1140
75°	1506
80°	0
85°	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.8	21.3
10°-20°	207.0	40.8
20°-30°	126.4	24.9
30°-40°	42.6	8.4
40°-50°	14.4	2.8
50°-60°	5.8	1.1
60°-70°	2.3	0.5
70°-80°	0.7	0.1
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°	441.2	87.0
0°-40°	483.8	95.4
0°-60°	504.0	99.4
0°-90°	507.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	507.0	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	1247	
5°	1188	108
15°	761	207
25°	268	126
35°	62	43
45°	18	14
55°	6	6
65°	2	2
75°	1	1
85°	0	0
90°	0	



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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	1246.8
1°	1244.8
2°	1237.7
3°	1225.7
4°	1208.6
5°	1187.5
6°	1161.3
7°	1131.2
8°	1096.0
9°	1057.8
10°	1015.5
11°	970.3
12°	920.0
13°	869.7
14°	816.4
15°	761.1
16°	706.9
17°	652.6
18°	598.3
19°	543.0
20°	489.7
21°	440.4
22°	393.1
23°	347.9
24°	306.7
25°	268.5
27.5°	189.0
30°	130.7
32.5°	90.5
35°	62.3
37.5°	44.2
40°	32.2
42.5°	23.1
45°	18.1
47.5°	13.1
50°	10.1
52.5°	8.0
55°	6.0
57.5°	5.0
60°	4.0
62.5°	3.0
65°	2.0
67.5°	2.0
70°	1.0
72.5°	1.0



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**CANDELA DISTRIBUTION (continued):**

	0°
75°	1.0
77.5°	0.0
80°	0.0
82.5°	0.0
85°	0.0
87.5°	0.0
90°	0.0

(END OF REPORT)