

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: FAIL-SAFE

Report Number: P546224

Luminaire Tested: **FMR-12-4-LD4-2LO-35-UNV-93-85-EDD**

Issue Date: 6/15/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P546224
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)
Test Lab: INNOVATION CENTER
Issue Date: 6/15/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMR-12-4-LD4-2LO-35-UNV-93-85-EDD
Description: 1X4 FMR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

Summary

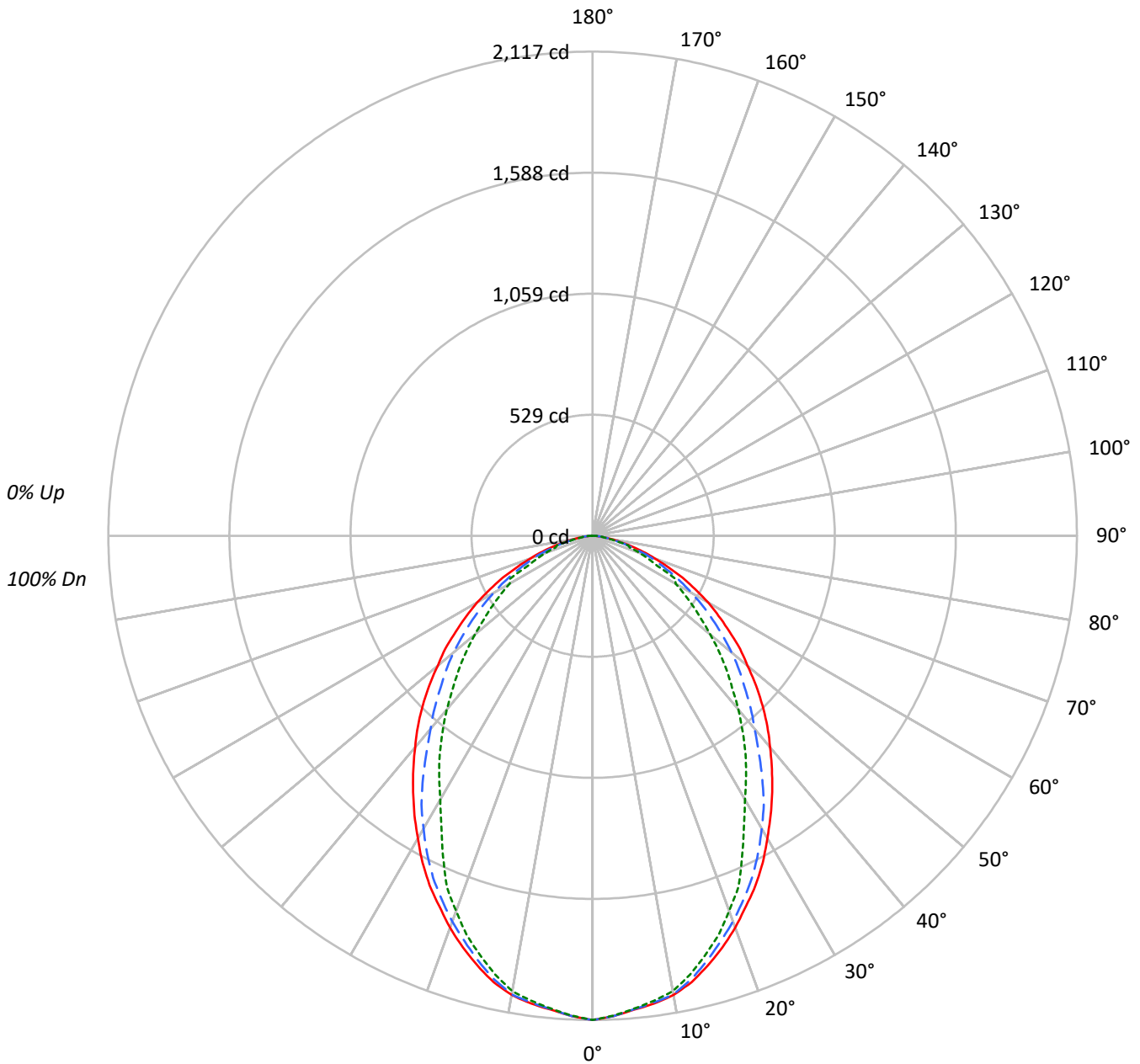
Lumens per Lamp: N/A
Luminaire Lumens: 4156.0 lumens
Efficiency: N/A
Efficacy: 88.8 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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									
RC	80									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	100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5697	5697	5697
5°	5619	5613	5606
10°	5571	5564	5524
15°	5421	5366	5291
20°	5221	5137	4997
25°	5007	4898	4593
30°	4745	4593	4137
35°	4494	4245	3827
40°	4239	3869	3482
45°	3996	3577	3148
50°	3699	3320	2807
55°	3422	3008	2515
60°	3135	2687	2252
65°	2758	2353	1995
70°	2272	2061	1695
75°	1807	1577	1654
80°	1213	1137	1062
85°	756	908	1059



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.1	4.7
10°-20°	540.8	13.0
20°-30°	748.7	18.0
30°-40°	798.4	19.2
40°-50°	728.3	17.5
50°-60°	570.6	13.7
60°-70°	371.9	8.9
70°-80°	164.8	4.0
80°-90°	35.4	0.9
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°	1486.6	35.8
0°-40°	2285.0	55.0
0°-60°	3584.0	86.2
0°-90°	4156.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4156.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2117	2117	2117	2117	2117	
5°	2080	2078	2078	2075	2075	197
15°	1946	1946	1926	1906	1899	547
25°	1686	1676	1650	1591	1547	774
35°	1368	1358	1292	1194	1165	855
45°	1050	1028	940	862	827	809
55°	729	707	641	565	536	654
65°	433	409	370	377	313	427
75°	174	162	152	144	159	186
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2117.0	2117.0	2117.0	2117.0	2117.0
2.5°	2102.3	2102.3	2102.3	2099.9	2099.9
5°	2080.3	2077.9	2077.9	2075.4	2075.4
7.5°	2063.2	2060.7	2058.3	2055.8	2050.9
10°	2038.7	2038.7	2036.2	2024.0	2021.6
12.5°	1999.5	1997.1	1987.3	1970.2	1965.3
15°	1945.7	1945.7	1926.1	1906.5	1899.2
17.5°	1887.0	1884.5	1860.0	1840.5	1830.7
20°	1823.3	1818.4	1794.0	1762.1	1745.0
22.5°	1752.3	1752.3	1723.0	1681.4	1664.2
25°	1686.3	1676.5	1649.6	1590.8	1546.8
27.5°	1610.4	1595.7	1566.3	1483.1	1431.7
30°	1527.2	1519.8	1478.2	1370.6	1331.4
32.5°	1448.9	1436.6	1392.6	1280.0	1248.2
35°	1368.1	1358.3	1292.2	1194.3	1165.0
37.5°	1287.3	1275.1	1191.9	1113.6	1076.9
40°	1206.6	1191.9	1101.3	1030.4	991.2
42.5°	1130.7	1111.1	1023.0	947.1	903.1
45°	1049.9	1027.9	939.8	861.5	827.2
47.5°	969.2	949.6	868.8	788.1	748.9
50°	883.5	866.4	793.0	712.2	670.6
52.5°	812.5	785.6	714.6	633.9	599.6
55°	729.3	707.3	641.2	565.4	536.0
57.5°	653.5	631.4	570.2	499.3	474.8
60°	582.5	550.7	499.3	438.1	418.5
62.5°	504.2	479.7	435.6	384.2	408.7
65°	433.2	408.7	369.6	376.9	313.3
67.5°	354.9	342.6	308.4	274.1	264.3
70°	288.8	274.1	261.9	225.2	215.4
72.5°	230.1	215.4	198.2	178.7	171.3
75°	173.8	161.5	151.7	144.4	159.1
77.5°	119.9	115.0	107.7	100.3	97.9
80°	78.3	75.9	73.4	71.0	68.5
82.5°	46.5	46.5	46.5	46.5	46.5
85°	24.5	26.9	29.4	31.8	34.3
87.5°	14.7	14.7	17.1	19.6	22.0
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC





— 0°-180° - - 45°-225° - - - - 90°-270°







(END OF REPORT)