

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: P311754

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CA08-W2A-U-4500K**

Issue Date: 3/3/2020

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: P311754
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-70HE-UNV-L82765-S-CA08-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4500K TUNABLE CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment:

<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
AS-5443-2	Good	REFLECTOR
AS-5443-3	Good	DRIVER
AS-5443-4	Good	UPPER MODULE
AS-5443-5	Good	LENS
AS-5443-6	Good	DRIVER 2
AS-5443-7	Good	TRIM RING

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6881.0 lumens
Efficiency: N/A
Efficacy: 117.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

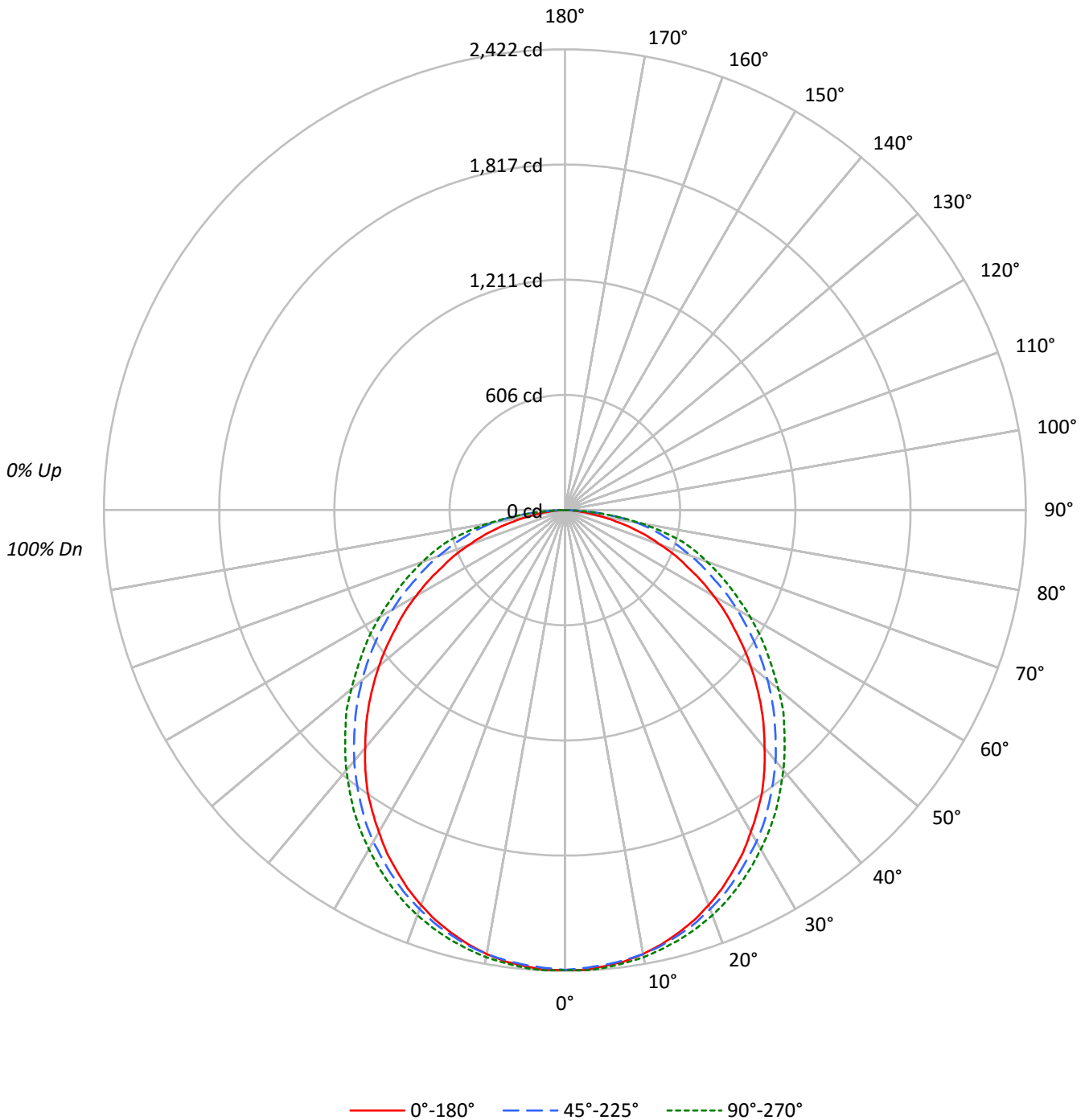
Input Watts (W): 58.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	108	103	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3252	3252	3252
5°	3250	3241	3262
10°	3237	3237	3261
15°	3206	3221	3255
20°	3164	3195	3245
25°	3105	3164	3225
30°	3036	3127	3199
35°	2969	3077	3174
40°	2868	3025	3136
45°	2774	2965	3103
50°	2667	2910	3065
55°	2548	2856	3035
60°	2429	2811	3029
65°	2275	2762	3048
70°	2107	2777	3130
75°	1886	2829	3306
80°	1524	2998	3235
85°	1147	2632	2564



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.9	3.3
10°-20°	653.9	9.5
20°-30°	983.0	14.3
30°-40°	1170.9	17.0
40°-50°	1198.3	17.4
50°-60°	1078.9	15.7
60°-70°	847.3	12.3
70°-80°	549.9	8.0
80°-90°	170.1	2.5
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°	1865.7	27.1
0°-40°	3036.6	44.1
0°-60°	5313.8	77.2
0°-90°	6881.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6881.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2417	2417	2417	2417	2417	
5°	2406	2411	2400	2413	2415	229
15°	2302	2308	2312	2332	2336	649
25°	2092	2109	2131	2166	2172	964
35°	1808	1829	1873	1919	1932	1128
45°	1458	1493	1558	1617	1630	1124
55°	1086	1134	1217	1281	1294	974
65°	715	769	868	940	957	711
75°	363	433	544	618	636	384
85°	74	138	170	166	166	90
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2417.3	2417.3	2417.3	2417.3	2417.3
2.5°	2419.5	2419.5	2408.6	2419.5	2421.7
5°	2406.4	2410.8	2399.9	2413.0	2415.2
7.5°	2393.3	2393.3	2386.7	2399.9	2402.0
10°	2369.3	2371.4	2369.3	2384.6	2386.7
12.5°	2338.7	2343.0	2345.2	2360.5	2362.7
15°	2301.5	2308.1	2312.4	2332.1	2336.5
17.5°	2260.0	2266.5	2277.5	2299.3	2303.7
20°	2209.7	2218.4	2231.6	2260.0	2266.5
22.5°	2155.1	2163.8	2185.7	2211.9	2222.8
25°	2091.7	2109.2	2131.0	2166.0	2172.5
27.5°	2028.3	2043.6	2072.0	2109.2	2117.9
30°	1954.0	1978.0	2013.0	2050.1	2058.9
32.5°	1881.9	1905.9	1947.4	1986.8	1997.7
35°	1807.5	1829.4	1873.1	1919.0	1932.1
37.5°	1722.3	1750.7	1798.8	1844.7	1857.8
40°	1632.7	1667.7	1722.3	1770.4	1785.7
42.5°	1547.4	1584.6	1639.2	1691.7	1709.2
45°	1457.8	1492.8	1558.4	1617.4	1630.5
47.5°	1366.0	1405.4	1475.3	1534.3	1556.2
50°	1274.2	1315.8	1390.1	1451.3	1464.4
52.5°	1182.4	1226.2	1304.8	1370.4	1377.0
55°	1086.3	1134.4	1217.4	1280.8	1293.9
57.5°	998.8	1040.4	1130.0	1195.6	1210.9
60°	902.7	948.6	1044.7	1105.9	1125.6
62.5°	810.9	859.0	959.5	1020.7	1038.2
65°	714.7	769.4	867.7	939.8	957.3
67.5°	631.7	684.1	789.0	859.0	876.4
70°	535.5	594.5	706.0	778.1	795.6
72.5°	452.4	513.6	625.1	695.0	721.3
75°	362.8	432.8	544.2	618.5	636.0
77.5°	275.4	356.3	469.9	526.7	526.7
80°	196.7	282.0	386.9	413.1	417.5
82.5°	129.0	212.0	286.3	284.1	284.1
85°	74.3	137.7	170.5	166.1	166.1
87.5°	28.4	56.8	61.2	61.2	59.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)