

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: P311756

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CA08-W2A-U-5500K**

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: P311756
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-5500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 5500K 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: 7044.0 lumens
Efficiency: N/A
Efficacy: 118.8 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

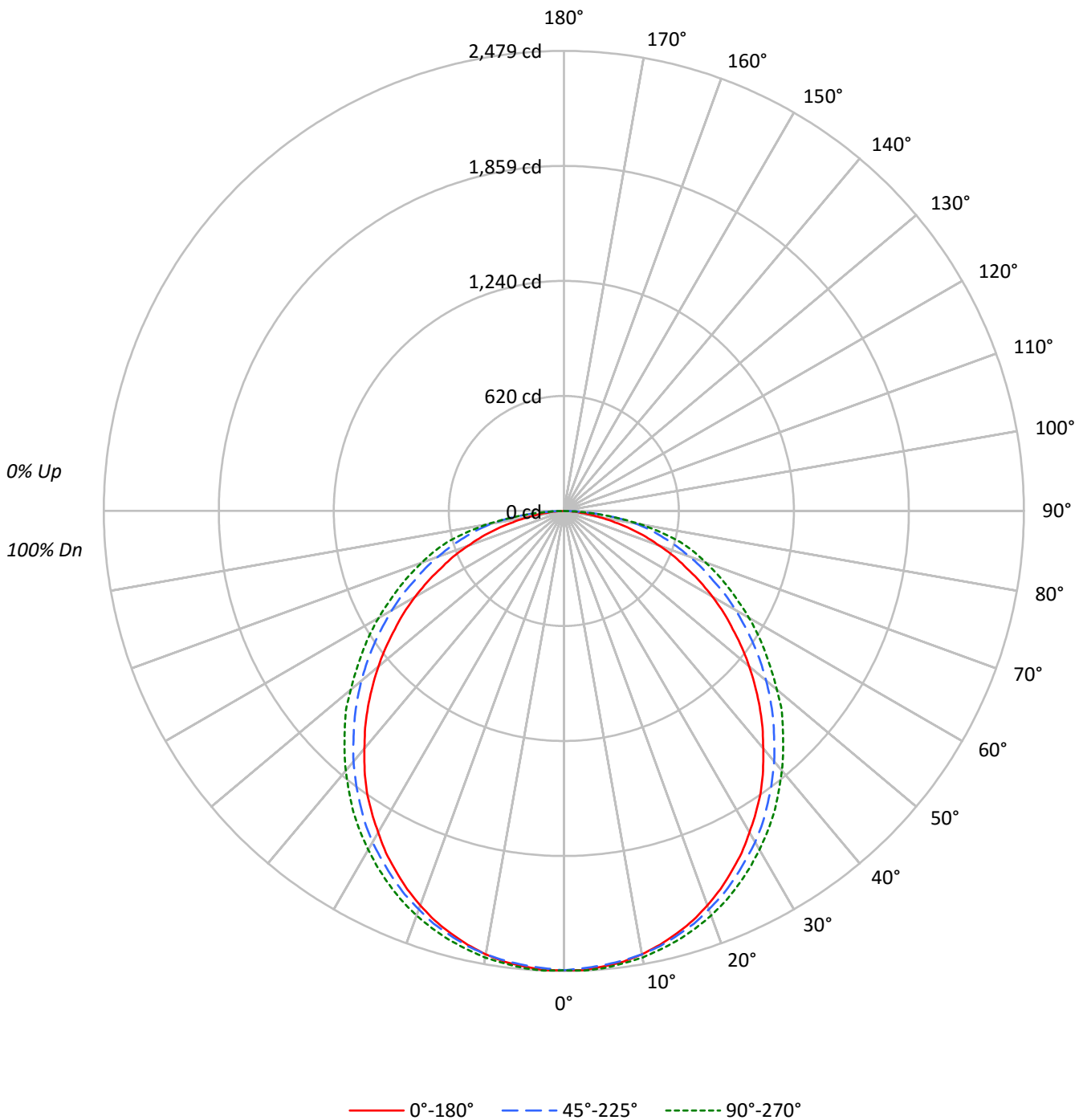
Input Watts (W): 59.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	3330	3330	3330
5°	3327	3318	3339
10°	3314	3314	3338
15°	3282	3297	3332
20°	3239	3271	3322
25°	3179	3239	3302
30°	3108	3202	3275
35°	3039	3150	3249
40°	2936	3097	3211
45°	2840	3036	3176
50°	2730	2979	3138
55°	2609	2924	3107
60°	2487	2878	3101
65°	2329	2828	3120
70°	2157	2843	3204
75°	1931	2896	3385
80°	1561	3068	3312
85°	1175	2694	2624



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.3	3.3
10°-20°	669.4	9.5
20°-30°	1006.3	14.3
30°-40°	1198.6	17.0
40°-50°	1226.7	17.4
50°-60°	1104.4	15.7
60°-70°	867.3	12.3
70°-80°	562.9	8.0
80°-90°	174.1	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°	1909.9	27.1
0°-40°	3108.5	44.1
0°-60°	5439.7	77.2
0°-90°	7044.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7044.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2475	2475	2475	2475	2475	
5°	2463	2468	2457	2470	2472	234
15°	2356	2363	2367	2387	2392	664
25°	2141	2159	2182	2217	2224	986
35°	1850	1873	1918	1964	1978	1154
45°	1492	1528	1595	1656	1669	1151
55°	1112	1161	1246	1311	1325	997
65°	732	788	888	962	980	728
75°	371	443	557	633	651	393
85°	76	141	174	170	170	92
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2474.6	2474.6	2474.6	2474.6	2474.6
2.5°	2476.8	2476.8	2465.7	2476.8	2479.1
5°	2463.4	2467.9	2456.7	2470.1	2472.4
7.5°	2450.0	2450.0	2443.3	2456.7	2458.9
10°	2425.4	2427.6	2425.4	2441.0	2443.3
12.5°	2394.1	2398.5	2400.8	2416.4	2418.7
15°	2356.0	2362.7	2367.2	2387.3	2391.8
17.5°	2313.5	2320.2	2331.4	2353.8	2358.3
20°	2262.0	2271.0	2284.4	2313.5	2320.2
22.5°	2206.1	2215.1	2237.4	2264.3	2275.5
25°	2141.2	2159.1	2181.5	2217.3	2224.0
27.5°	2076.3	2092.0	2121.1	2159.1	2168.1
30°	2000.3	2024.9	2060.7	2098.7	2107.7
32.5°	1926.4	1951.0	1993.6	2033.8	2045.0
35°	1850.4	1872.7	1917.5	1964.5	1977.9
37.5°	1763.1	1792.2	1841.4	1888.4	1901.8
40°	1671.4	1707.2	1763.1	1812.3	1828.0
42.5°	1584.1	1622.1	1678.1	1731.8	1749.7
45°	1492.4	1528.2	1595.3	1655.7	1669.1
47.5°	1398.4	1438.7	1510.3	1570.7	1593.1
50°	1304.4	1346.9	1423.0	1485.7	1499.1
52.5°	1210.5	1255.2	1335.7	1402.9	1409.6
55°	1112.0	1161.2	1246.3	1311.1	1324.6
57.5°	1022.5	1065.0	1156.8	1223.9	1239.5
60°	924.1	971.0	1069.5	1132.1	1152.3
62.5°	830.1	879.3	982.2	1044.9	1062.8
65°	731.6	787.6	888.3	962.1	980.0
67.5°	646.6	700.3	807.7	879.3	897.2
70°	548.2	608.6	722.7	796.5	814.4
72.5°	463.1	525.8	639.9	711.5	738.4
75°	371.4	443.0	557.1	633.2	651.1
77.5°	281.9	364.7	481.0	539.2	539.2
80°	201.4	288.6	396.0	422.9	427.4
82.5°	132.0	217.0	293.1	290.9	290.9
85°	76.1	141.0	174.5	170.0	170.0
87.5°	29.1	58.2	62.6	62.6	60.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)