

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: P314513

Luminaire Tested: **24FCZ2-70HE-UNV-L83050-S-CP250-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: P314513
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-L83050-S-CP250-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB 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: 6664.0 lumens
Efficiency: N/A
Efficacy: 110.1 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

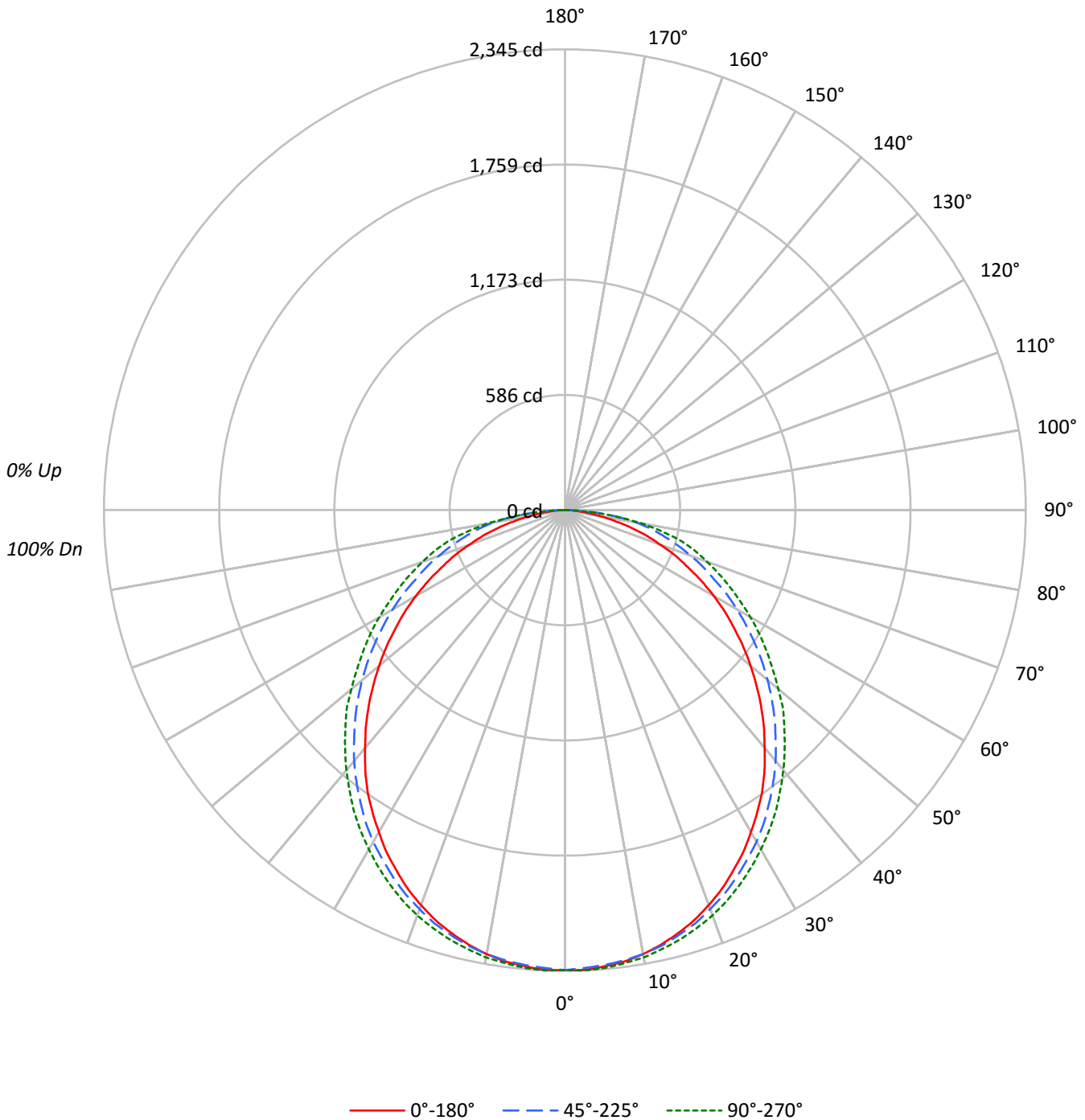
Input Watts (W): 60.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	3150	3150	3150
5°	3148	3139	3159
10°	3135	3135	3158
15°	3105	3120	3152
20°	3064	3094	3143
25°	3007	3064	3124
30°	2940	3029	3098
35°	2875	2980	3074
40°	2777	2930	3038
45°	2687	2872	3005
50°	2583	2818	2969
55°	2468	2766	2940
60°	2352	2723	2933
65°	2204	2675	2952
70°	2040	2690	3031
75°	1827	2740	3202
80°	1476	2903	3133
85°	1112	2549	2484



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.6	3.3
10°-20°	633.3	9.5
20°-30°	952.0	14.3
30°-40°	1134.0	17.0
40°-50°	1160.5	17.4
50°-60°	1044.8	15.7
60°-70°	820.5	12.3
70°-80°	532.5	8.0
80°-90°	164.7	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°	1806.9	27.1
0°-40°	2940.8	44.1
0°-60°	5146.2	77.2
0°-90°	6664.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6664.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2341	2341	2341	2341	2341	
5°	2330	2335	2324	2337	2339	221
15°	2229	2235	2240	2259	2263	628
25°	2026	2043	2064	2098	2104	933
35°	1750	1772	1814	1858	1871	1092
45°	1412	1446	1509	1566	1579	1089
55°	1052	1099	1179	1240	1253	943
65°	692	745	840	910	927	689
75°	351	419	527	599	616	372
85°	72	133	165	161	161	87
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2341.1	2341.1	2341.1	2341.1	2341.1
2.5°	2343.2	2343.2	2332.6	2343.2	2345.3
5°	2330.5	2334.8	2324.2	2336.9	2339.0
7.5°	2317.8	2317.8	2311.5	2324.2	2326.3
10°	2294.5	2296.7	2294.5	2309.4	2311.5
12.5°	2264.9	2269.1	2271.3	2286.1	2288.2
15°	2228.9	2235.3	2239.5	2258.6	2262.8
17.5°	2188.7	2195.1	2205.6	2226.8	2231.0
20°	2140.0	2148.5	2161.2	2188.7	2195.1
22.5°	2087.1	2095.6	2116.7	2142.1	2152.7
25°	2025.7	2042.6	2063.8	2097.7	2104.0
27.5°	1964.3	1979.1	2006.7	2042.6	2051.1
30°	1892.4	1915.6	1949.5	1985.5	1994.0
32.5°	1822.5	1845.8	1886.0	1924.1	1934.7
35°	1750.5	1771.7	1814.0	1858.5	1871.2
37.5°	1668.0	1695.5	1742.1	1786.5	1799.2
40°	1581.2	1615.1	1668.0	1714.6	1729.4
42.5°	1498.6	1534.6	1587.5	1638.4	1655.3
45°	1411.9	1445.7	1509.2	1566.4	1579.1
47.5°	1323.0	1361.1	1428.8	1485.9	1507.1
50°	1234.1	1274.3	1346.2	1405.5	1418.2
52.5°	1145.2	1187.5	1263.7	1327.2	1333.5
55°	1052.0	1098.6	1179.0	1240.4	1253.1
57.5°	967.3	1007.6	1094.4	1157.9	1172.7
60°	874.2	918.7	1011.8	1071.1	1090.1
62.5°	785.3	831.9	929.2	988.5	1005.4
65°	692.2	745.1	840.3	910.2	927.1
67.5°	611.7	662.5	764.1	831.9	848.8
70°	518.6	575.8	683.7	753.6	770.5
72.5°	438.2	497.4	605.4	673.1	698.5
75°	351.4	419.1	527.1	599.0	616.0
77.5°	266.7	345.0	455.1	510.1	510.1
80°	190.5	273.1	374.7	400.1	404.3
82.5°	124.9	205.3	277.3	275.2	275.2
85°	72.0	133.4	165.1	160.9	160.9
87.5°	27.5	55.0	59.3	59.3	57.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)