

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: P311791

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CP250-W2A-U-5000K**

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: P311791
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-CP250-W2A-U-5000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 5000K 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: 6473.0 lumens
Efficiency: N/A
Efficacy: 109.5 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

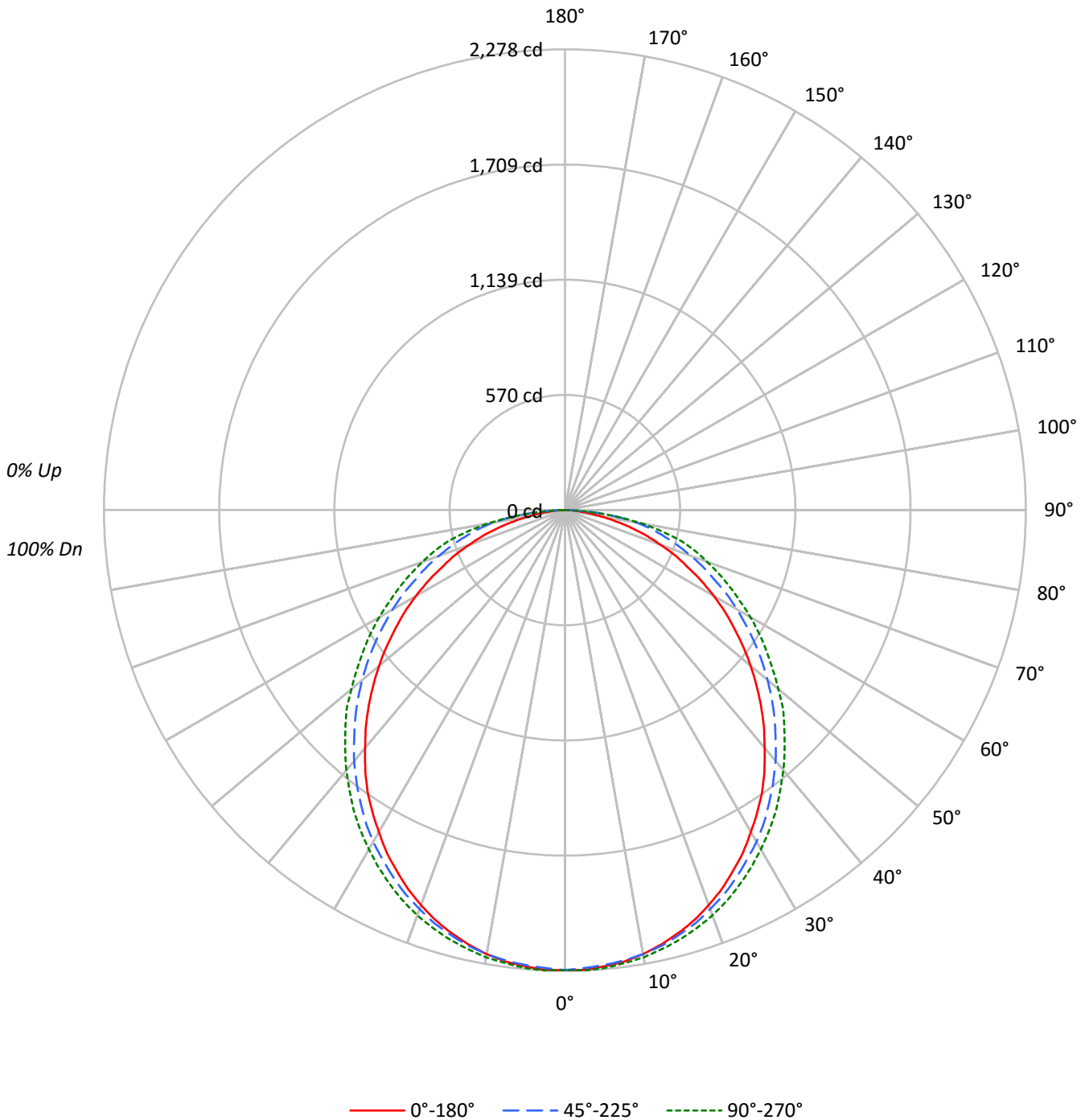
Input Watts (W): 59.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	3060	3060	3060
5°	3057	3049	3069
10°	3045	3045	3067
15°	3016	3030	3062
20°	2976	3006	3053
25°	2921	2976	3034
30°	2856	2942	3009
35°	2793	2894	2985
40°	2698	2846	2950
45°	2610	2790	2919
50°	2509	2737	2884
55°	2397	2686	2855
60°	2285	2645	2849
65°	2140	2599	2867
70°	1982	2613	2944
75°	1774	2662	3110
80°	1433	2820	3043
85°	1079	2476	2413



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	215.3	3.3
10°-20°	615.1	9.5
20°-30°	924.7	14.3
30°-40°	1101.5	17.0
40°-50°	1127.3	17.4
50°-60°	1014.9	15.7
60°-70°	797.0	12.3
70°-80°	517.3	8.0
80°-90°	160.0	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°	1755.1	27.1
0°-40°	2856.6	44.1
0°-60°	4998.7	77.2
0°-90°	6473.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6473.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2274	2274	2274	2274	2274	
5°	2264	2268	2258	2270	2272	215
15°	2165	2171	2175	2194	2198	610
25°	1968	1984	2005	2038	2044	906
35°	1700	1721	1762	1805	1818	1061
45°	1371	1404	1466	1522	1534	1057
55°	1022	1067	1145	1205	1217	916
65°	672	724	816	884	901	669
75°	341	407	512	582	598	361
85°	70	130	160	156	156	84
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2274.0	2274.0	2274.0	2274.0	2274.0
2.5°	2276.1	2276.1	2265.8	2276.1	2278.1
5°	2263.7	2267.8	2257.6	2269.9	2272.0
7.5°	2251.4	2251.4	2245.2	2257.6	2259.6
10°	2228.8	2230.8	2228.8	2243.2	2245.2
12.5°	2200.0	2204.1	2206.2	2220.5	2222.6
15°	2165.0	2171.2	2175.3	2193.8	2197.9
17.5°	2126.0	2132.1	2142.4	2163.0	2167.1
20°	2078.7	2086.9	2099.2	2126.0	2132.1
22.5°	2027.3	2035.5	2056.1	2080.7	2091.0
25°	1967.7	1984.1	2004.7	2037.6	2043.7
27.5°	1908.0	1922.4	1949.1	1984.1	1992.3
30°	1838.1	1860.7	1893.6	1928.6	1936.8
32.5°	1770.3	1792.9	1832.0	1869.0	1879.2
35°	1700.4	1720.9	1762.0	1805.2	1817.6
37.5°	1620.2	1646.9	1692.1	1735.3	1747.7
40°	1535.9	1568.8	1620.2	1665.4	1679.8
42.5°	1455.7	1490.6	1542.0	1591.4	1607.8
45°	1371.4	1404.3	1466.0	1521.5	1533.8
47.5°	1285.0	1322.0	1387.8	1443.4	1463.9
50°	1198.7	1237.8	1307.7	1365.2	1377.6
52.5°	1112.3	1153.5	1227.5	1289.2	1295.3
55°	1021.9	1067.1	1145.2	1204.9	1217.2
57.5°	939.6	978.7	1063.0	1124.7	1139.1
60°	849.2	892.3	982.8	1040.4	1058.9
62.5°	762.8	808.0	902.6	960.2	976.6
65°	672.3	723.7	816.3	884.1	900.6
67.5°	594.2	643.5	742.2	808.0	824.5
70°	503.7	559.2	664.1	732.0	748.4
72.5°	425.6	483.2	588.0	653.8	678.5
75°	341.3	407.1	512.0	581.9	598.3
77.5°	259.1	335.1	442.1	495.5	495.5
80°	185.0	265.2	363.9	388.6	392.7
82.5°	121.3	199.4	269.3	267.3	267.3
85°	69.9	129.5	160.4	156.3	156.3
87.5°	26.7	53.5	57.6	57.6	55.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)