

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: P311111

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CP250-W2A-U-2700K**

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: P311111  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)  
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-CP250-W2A-U-2700K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.250" POLYCARB SHEET  
Light Source: (336) 2700K 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: 5490.0 lumens  
Efficiency: N/A  
Efficacy: 95.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

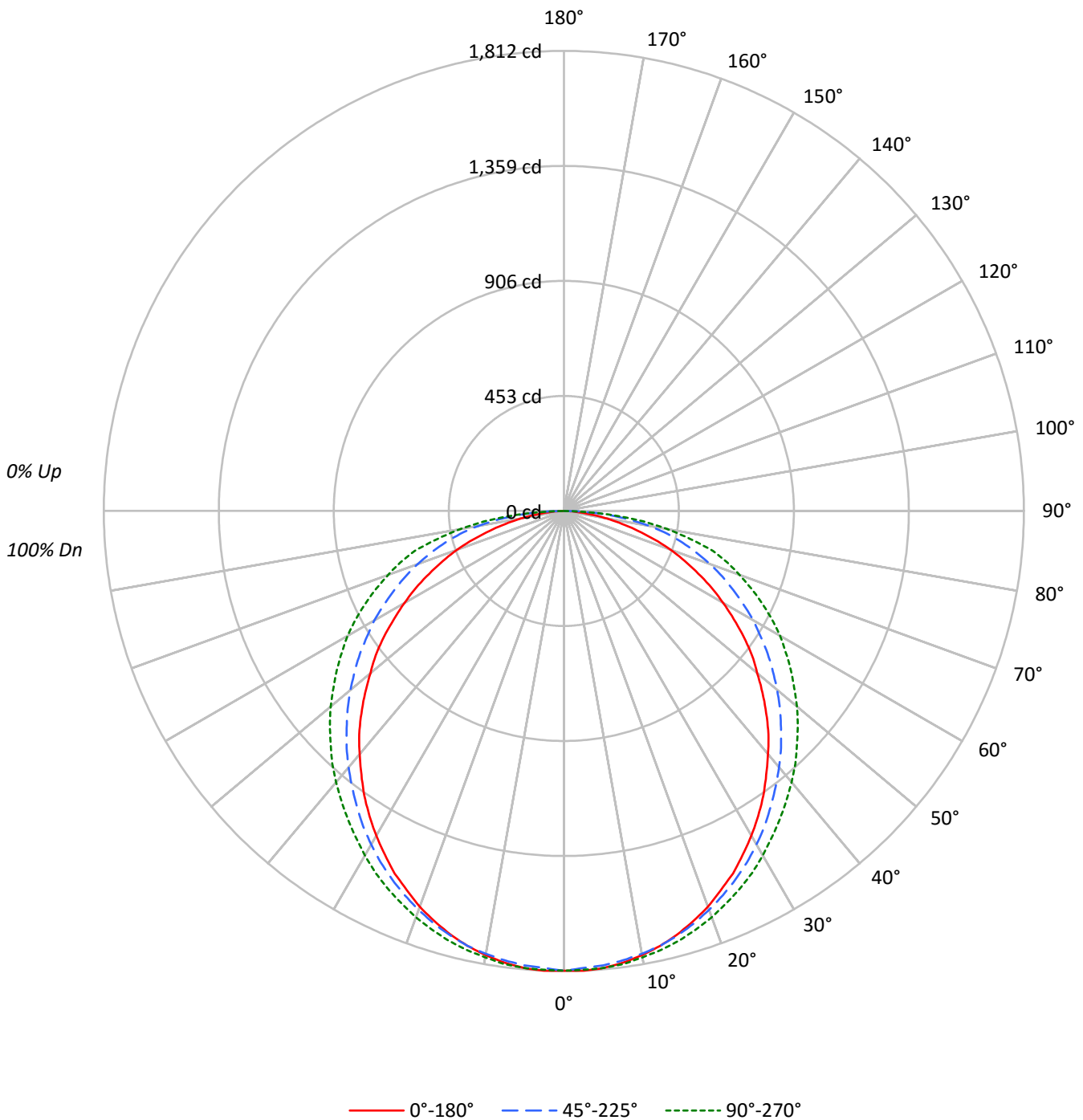
Input Watts (W): 57.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2436	2436	2436
5°	2440	2426	2440
10°	2426	2419	2439
15°	2405	2410	2441
20°	2376	2394	2439
25°	2339	2377	2436
30°	2295	2357	2434
35°	2250	2334	2435
40°	2198	2316	2451
45°	2145	2301	2471
50°	2082	2295	2509
55°	2030	2299	2559
60°	1951	2319	2647
65°	1862	2343	2743
70°	1763	2415	2895
75°	1572	2519	3163
80°	1340	2668	3232
85°	956	2643	3094



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	171.3	3.1
10°-20°	489.9	8.9
20°-30°	740.0	13.5
30°-40°	891.9	16.2
40°-50°	936.3	17.1
50°-60°	876.0	16.0
60°-70°	723.4	13.2
70°-80°	492.9	9.0
80°-90°	168.1	3.1
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°	1401.3	25.5
0°-40°	2293.2	41.8
0°-60°	4105.5	74.8
0°-90°	5490.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5490.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1811	1811	1811	1811	1811	
5°	1807	1805	1796	1807	1807	171
15°	1727	1729	1730	1749	1752	487
25°	1576	1583	1601	1632	1641	725
35°	1370	1384	1421	1468	1483	856
45°	1128	1151	1210	1275	1299	870
55°	865	900	980	1060	1091	772
65°	585	634	736	829	862	580
75°	302	372	484	576	608	322
85°	62	122	171	193	200	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1810.6	1810.6	1810.6	1810.6	1810.6
2.5°	1812.4	1810.6	1801.4	1810.6	1808.7
5°	1806.9	1805.1	1796.0	1806.9	1806.9
7.5°	1794.2	1794.2	1785.1	1797.8	1799.6
10°	1775.9	1775.9	1770.5	1785.1	1785.1
12.5°	1754.1	1754.1	1754.1	1768.7	1770.5
15°	1726.8	1728.6	1730.4	1748.6	1752.3
17.5°	1694.0	1697.6	1703.1	1724.9	1728.6
20°	1659.4	1663.0	1672.1	1697.6	1703.1
22.5°	1615.7	1624.8	1637.5	1666.7	1672.1
25°	1575.6	1582.9	1601.1	1632.0	1641.2
27.5°	1526.4	1537.3	1561.0	1593.8	1606.5
30°	1477.2	1488.2	1517.3	1555.5	1566.5
32.5°	1424.4	1440.8	1471.8	1511.8	1524.6
35°	1369.8	1384.3	1420.8	1468.1	1482.7
37.5°	1309.6	1329.7	1369.8	1420.8	1439.0
40°	1251.4	1273.2	1318.8	1373.4	1395.3
42.5°	1193.1	1214.9	1265.9	1327.9	1349.7
45°	1127.5	1151.2	1209.5	1275.0	1298.7
47.5°	1061.9	1091.1	1154.8	1224.0	1249.5
50°	994.5	1027.3	1096.5	1169.4	1198.5
52.5°	934.4	965.4	1038.2	1116.6	1143.9
55°	865.2	899.8	980.0	1060.1	1091.1
57.5°	794.2	832.4	918.0	1005.5	1036.4
60°	725.0	766.8	861.6	949.0	983.6
62.5°	657.6	699.4	797.8	888.9	923.5
65°	584.7	633.9	735.9	828.8	861.6
67.5°	515.5	568.3	675.8	766.8	799.6
70°	448.1	499.1	613.8	703.1	735.9
72.5°	375.2	433.5	548.3	641.2	675.8
75°	302.4	371.6	484.5	575.6	608.4
77.5°	235.0	306.0	418.9	493.6	510.0
80°	173.0	245.9	344.3	397.1	417.1
82.5°	111.1	184.0	262.3	300.5	316.9
85°	61.9	122.0	171.2	193.1	200.4
87.5°	25.5	52.8	69.2	78.3	78.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)