

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: P311665

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA08-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: P311665  
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: 24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-5000K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC 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

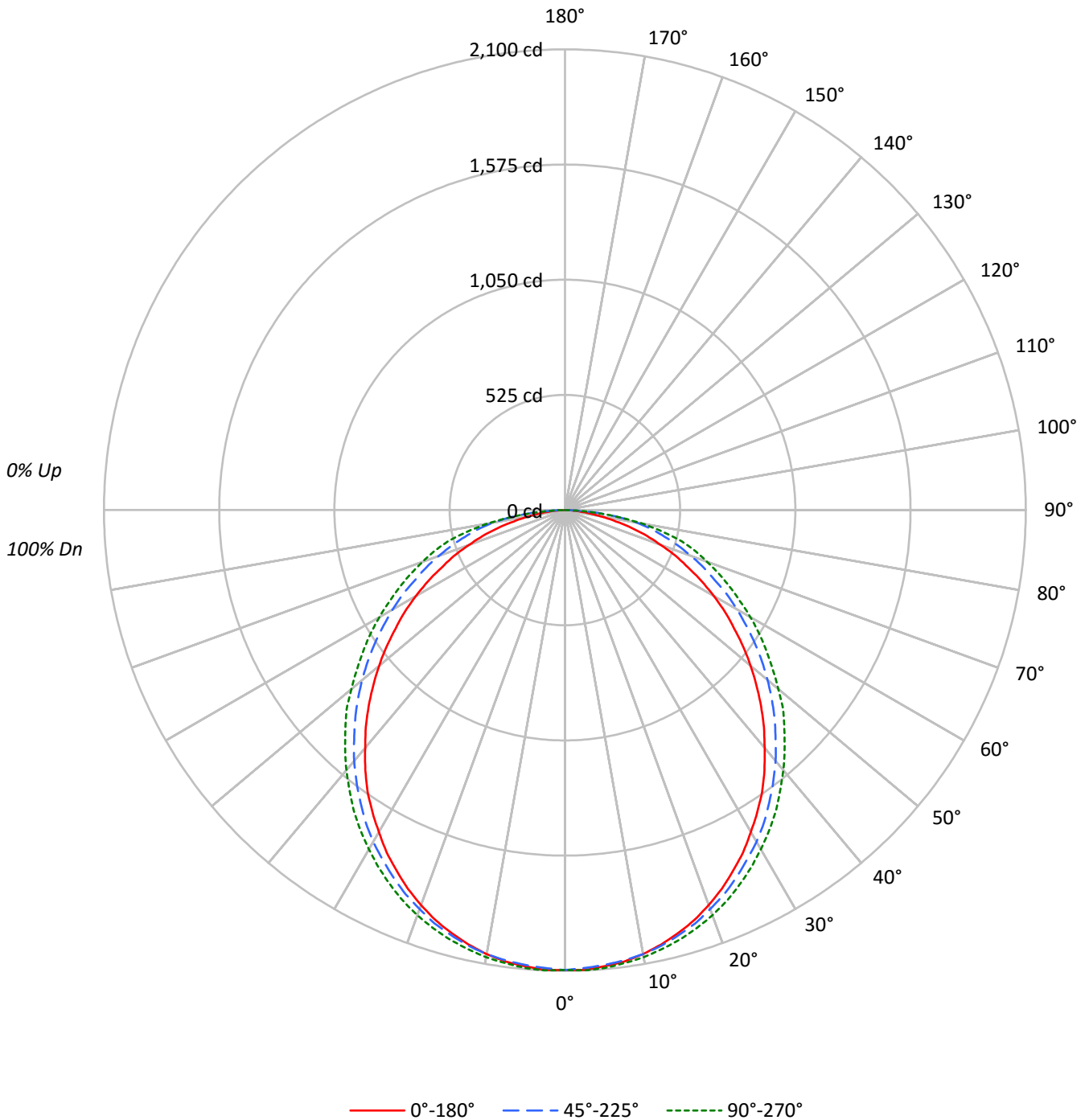
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5967.0 lumens  
Efficiency: N/A  
Efficacy: 122.5 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): 48.7  
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



TEST NUMBER: P311665  
CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-5000K

### Luminous Intensity Polar Plot





TEST NUMBER: P311665

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-5000K

**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°	2820	2820	2820
5°	2818	2811	2829
10°	2807	2807	2828
15°	2780	2793	2822
20°	2744	2771	2814
25°	2693	2744	2797
30°	2632	2712	2774
35°	2575	2668	2752
40°	2487	2623	2720
45°	2406	2571	2690
50°	2313	2523	2658
55°	2210	2476	2632
60°	2106	2438	2627
65°	1973	2395	2643
70°	1827	2408	2714
75°	1635	2453	2867
80°	1322	2600	2805
85°	994	2282	2223



TEST NUMBER: P311665

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-5000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.5	3.3
10°-20°	567.1	9.5
20°-30°	852.4	14.3
30°-40°	1015.3	17.0
40°-50°	1039.2	17.4
50°-60°	935.6	15.7
60°-70°	734.7	12.3
70°-80°	476.8	8.0
80°-90°	147.5	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°	1617.9	27.1
0°-40°	2633.3	44.1
0°-60°	4608.0	77.2
0°-90°	5967.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5967.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2096	2096	2096	2096	2096	
5°	2087	2091	2081	2092	2094	198
15°	1996	2002	2005	2022	2026	563
25°	1814	1829	1848	1878	1884	836
35°	1567	1586	1624	1664	1676	978
45°	1264	1294	1351	1403	1414	975
55°	942	984	1056	1111	1122	845
65°	620	667	752	815	830	617
75°	315	375	472	536	552	333
85°	64	119	148	144	144	78
90°	0	0	0	0	0	



TEST NUMBER: P311665

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-5000K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2096.2	2096.2	2096.2	2096.2	2096.2
2.5°	2098.1	2098.1	2088.7	2098.1	2100.0
5°	2086.8	2090.6	2081.1	2092.5	2094.4
7.5°	2075.4	2075.4	2069.7	2081.1	2083.0
10°	2054.5	2056.4	2054.5	2067.8	2069.7
12.5°	2028.0	2031.8	2033.7	2047.0	2048.9
15°	1995.8	2001.5	2005.3	2022.3	2026.1
17.5°	1959.8	1965.5	1974.9	1993.9	1997.7
20°	1916.2	1923.8	1935.1	1959.8	1965.5
22.5°	1868.8	1876.4	1895.3	1918.1	1927.6
25°	1813.8	1829.0	1848.0	1878.3	1884.0
27.5°	1758.9	1772.1	1796.8	1829.0	1836.6
30°	1694.4	1715.3	1745.6	1777.8	1785.4
32.5°	1631.9	1652.7	1688.7	1722.9	1732.3
35°	1567.4	1586.4	1624.3	1664.1	1675.5
37.5°	1493.5	1518.2	1559.9	1599.7	1611.0
40°	1415.8	1446.1	1493.5	1535.2	1548.5
42.5°	1341.9	1374.1	1421.5	1467.0	1482.2
45°	1264.2	1294.5	1351.4	1402.6	1413.9
47.5°	1184.6	1218.7	1279.4	1330.5	1349.5
50°	1105.0	1141.0	1205.4	1258.5	1269.9
52.5°	1025.4	1063.3	1131.5	1188.4	1194.1
55°	942.0	983.7	1055.7	1110.7	1122.0
57.5°	866.2	902.2	979.9	1036.8	1050.0
60°	782.8	822.6	906.0	959.0	976.1
62.5°	703.2	744.9	832.1	885.1	900.3
65°	619.8	667.2	752.4	815.0	830.2
67.5°	547.8	593.2	684.2	744.9	760.0
70°	464.4	515.5	612.2	674.7	689.9
72.5°	392.3	445.4	542.1	602.7	625.5
75°	314.6	375.3	471.9	536.4	551.5
77.5°	238.8	308.9	407.5	456.8	456.8
80°	170.6	244.5	335.5	358.2	362.0
82.5°	111.8	183.8	248.3	246.4	246.4
85°	64.4	119.4	147.8	144.0	144.0
87.5°	24.6	49.3	53.1	53.1	51.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)