

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: P311663

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-4000K**

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: P311663  
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-4000K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET  
Light Source: (336) 4000K 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: 5784.0 lumens  
Efficiency: N/A  
Efficacy: 120.0 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

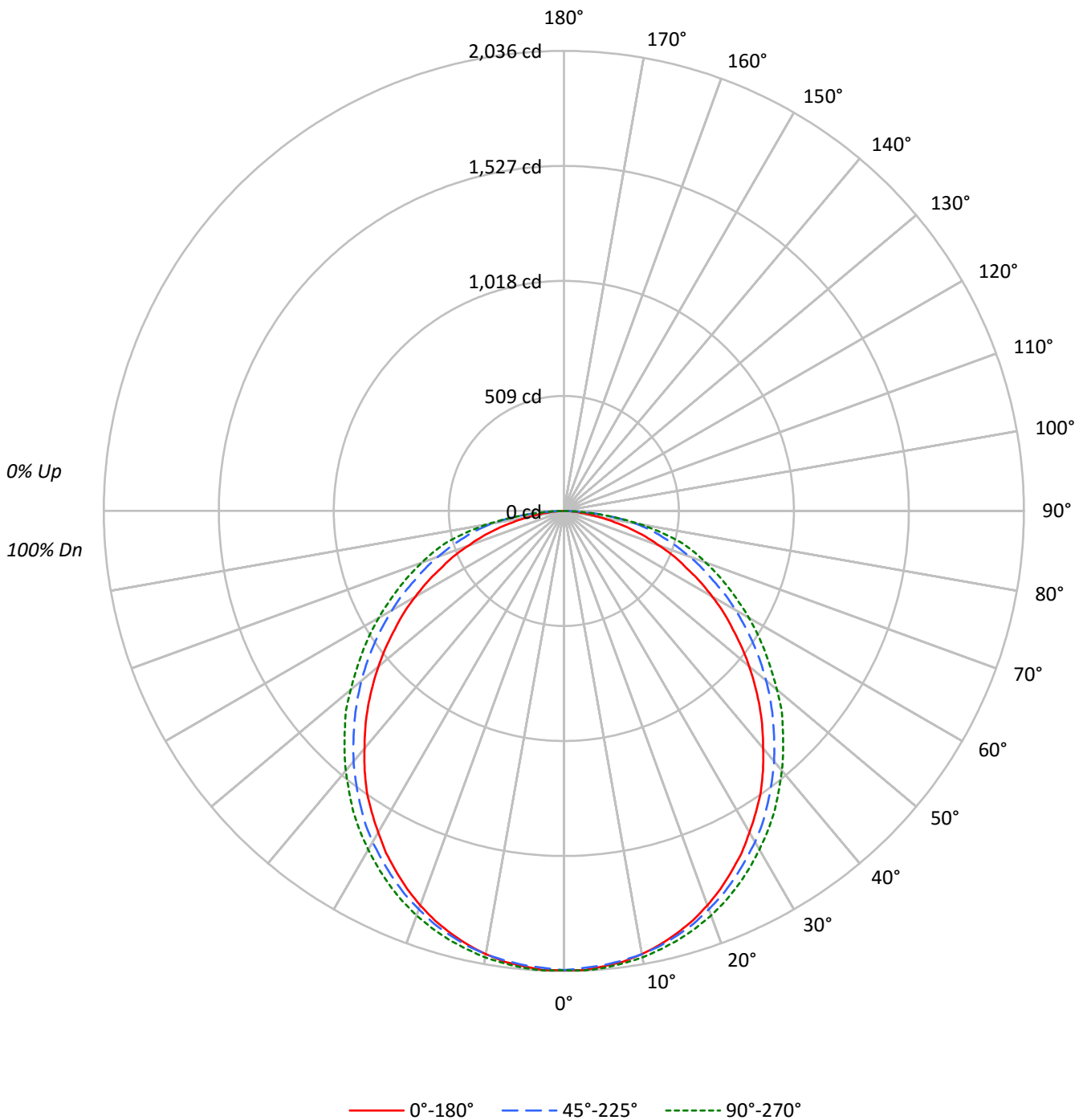
Input Watts (W): 48.2  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	2734	2734	2734
5°	2732	2725	2742
10°	2721	2721	2741
15°	2695	2708	2736
20°	2659	2686	2728
25°	2610	2659	2711
30°	2552	2629	2689
35°	2496	2586	2668
40°	2410	2543	2636
45°	2332	2492	2608
50°	2242	2446	2577
55°	2142	2400	2551
60°	2042	2363	2546
65°	1913	2322	2562
70°	1771	2334	2631
75°	1586	2378	2779
80°	1281	2520	2719
85°	965	2212	2155



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	192.4	3.3
10°-20°	549.7	9.5
20°-30°	826.3	14.3
30°-40°	984.2	17.0
40°-50°	1007.3	17.4
50°-60°	906.9	15.7
60°-70°	712.2	12.3
70°-80°	462.2	8.0
80°-90°	142.9	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°	1568.3	27.1
0°-40°	2552.5	44.1
0°-60°	4466.6	77.2
0°-90°	5784.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5784.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2032	2032	2032	2032	2032	
5°	2023	2026	2017	2028	2030	192
15°	1935	1940	1944	1960	1964	545
25°	1758	1773	1791	1821	1826	810
35°	1519	1538	1574	1613	1624	948
45°	1225	1255	1310	1360	1371	945
55°	913	954	1023	1077	1088	819
65°	601	647	729	790	805	598
75°	305	364	458	520	535	323
85°	62	116	143	140	140	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2032.0	2032.0	2032.0	2032.0	2032.0
2.5°	2033.8	2033.8	2024.6	2033.8	2035.6
5°	2022.8	2026.4	2017.3	2028.3	2030.1
7.5°	2011.7	2011.7	2006.2	2017.3	2019.1
10°	1991.5	1993.4	1991.5	2004.4	2006.2
12.5°	1965.8	1969.5	1971.3	1984.2	1986.0
15°	1934.6	1940.1	1943.8	1960.3	1964.0
17.5°	1899.7	1905.2	1914.4	1932.7	1936.4
20°	1857.4	1864.8	1875.8	1899.7	1905.2
22.5°	1811.5	1818.8	1837.2	1859.3	1868.4
25°	1758.2	1772.9	1791.3	1820.7	1826.2
27.5°	1704.9	1717.8	1741.7	1772.9	1780.3
30°	1642.5	1662.7	1692.1	1723.3	1730.7
32.5°	1581.8	1602.0	1637.0	1670.0	1679.2
35°	1519.4	1537.7	1574.5	1613.1	1624.1
37.5°	1447.7	1471.6	1512.0	1550.6	1561.6
40°	1372.4	1401.8	1447.7	1488.1	1501.0
42.5°	1300.7	1332.0	1377.9	1422.0	1436.7
45°	1225.4	1254.8	1309.9	1359.5	1370.6
47.5°	1148.3	1181.3	1240.1	1289.7	1308.1
50°	1071.1	1106.0	1168.5	1219.9	1230.9
52.5°	993.9	1030.7	1096.8	1151.9	1157.4
55°	913.1	953.5	1023.3	1076.6	1087.6
57.5°	839.6	874.5	949.8	1005.0	1017.8
60°	758.8	797.4	878.2	929.6	946.2
62.5°	681.6	722.0	806.5	858.0	872.7
65°	600.8	646.7	729.4	790.0	804.7
67.5°	531.0	575.0	663.2	722.0	736.7
70°	450.1	499.7	593.4	654.0	668.7
72.5°	380.3	431.7	525.4	584.2	606.3
75°	305.0	363.8	457.5	519.9	534.6
77.5°	231.5	299.5	395.0	442.8	442.8
80°	165.3	237.0	325.2	347.2	350.9
82.5°	108.4	178.2	240.7	238.8	238.8
85°	62.5	115.7	143.3	139.6	139.6
87.5°	23.9	47.8	51.4	51.4	49.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)