

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: P311693

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-5500K**

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: P311693
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-CP187-W2A-U-5500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5500K 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: 5638.0 lumens
Efficiency: N/A
Efficacy: 115.3 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

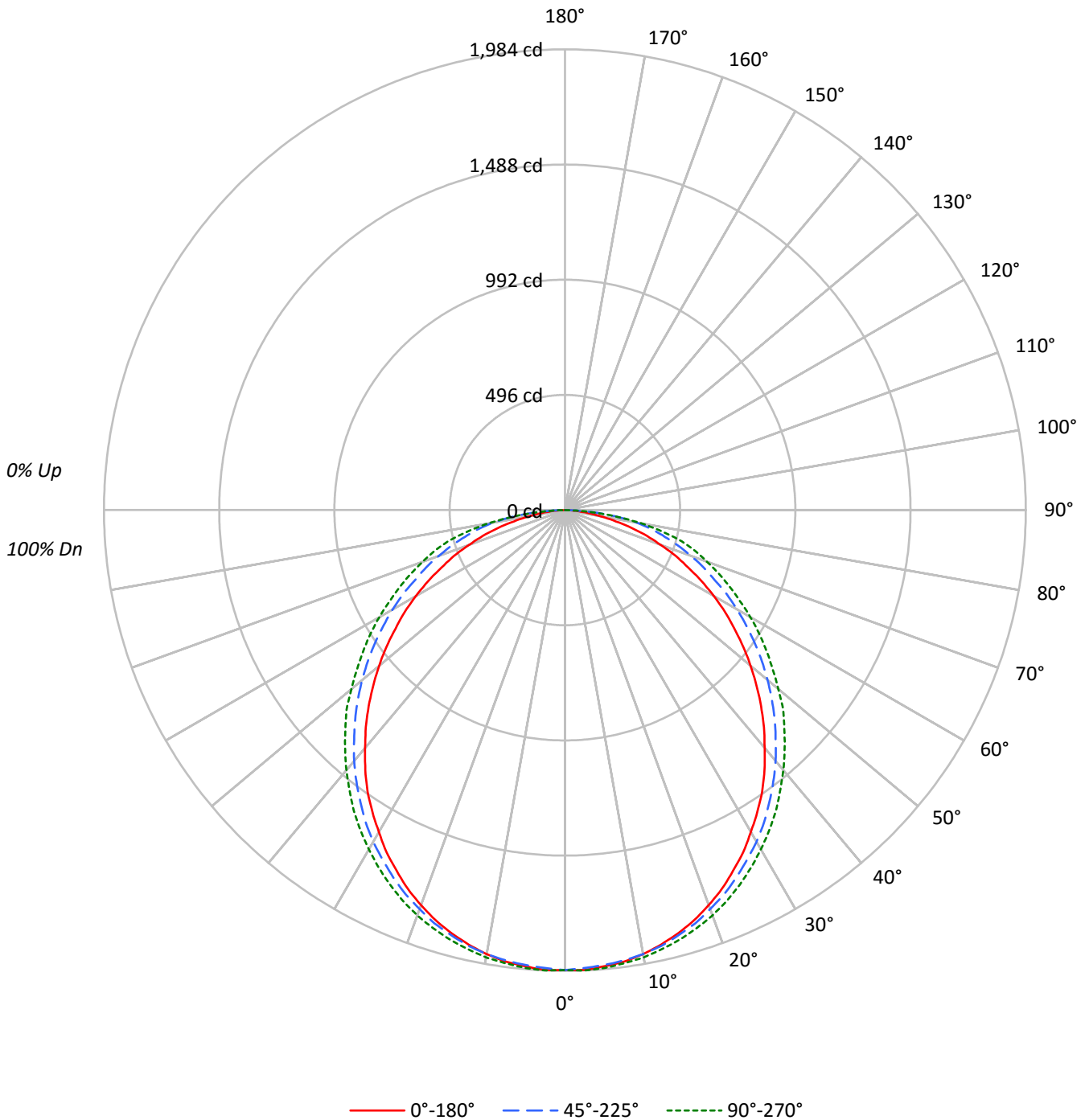
Input Watts (W): 48.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2665	2665	2665
5°	2663	2656	2673
10°	2652	2652	2672
15°	2627	2639	2667
20°	2592	2618	2659
25°	2544	2592	2643
30°	2487	2563	2621
35°	2433	2521	2600
40°	2350	2479	2570
45°	2273	2430	2542
50°	2186	2384	2512
55°	2088	2340	2487
60°	1990	2303	2482
65°	1864	2264	2497
70°	1726	2275	2565
75°	1546	2318	2709
80°	1249	2456	2650
85°	940	2157	2101



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.5	3.3
10°-20°	535.8	9.5
20°-30°	805.4	14.3
30°-40°	959.4	17.0
40°-50°	981.9	17.4
50°-60°	884.0	15.7
60°-70°	694.2	12.3
70°-80°	450.5	8.0
80°-90°	139.3	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°	1528.7	27.1
0°-40°	2488.1	44.1
0°-60°	4353.9	77.2
0°-90°	5638.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5638.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1981	1981	1981	1981	1981	
5°	1972	1975	1966	1977	1979	187
15°	1886	1891	1895	1911	1914	532
25°	1714	1728	1746	1775	1780	790
35°	1481	1499	1535	1572	1583	924
45°	1194	1223	1277	1325	1336	921
55°	890	929	998	1049	1060	798
65°	586	630	711	770	784	583
75°	297	355	446	507	521	315
85°	61	113	140	136	136	74
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1980.7	1980.7	1980.7	1980.7	1980.7
2.5°	1982.5	1982.5	1973.5	1982.5	1984.2
5°	1971.7	1975.3	1966.3	1977.1	1978.9
7.5°	1961.0	1961.0	1955.6	1966.3	1968.1
10°	1941.3	1943.1	1941.3	1953.8	1955.6
12.5°	1916.2	1919.8	1921.6	1934.1	1935.9
15°	1885.8	1891.1	1894.7	1910.8	1914.4
17.5°	1851.7	1857.1	1866.1	1884.0	1887.5
20°	1810.5	1817.7	1828.4	1851.7	1857.1
22.5°	1765.8	1772.9	1790.8	1812.3	1821.3
25°	1713.8	1728.2	1746.1	1774.7	1780.1
27.5°	1661.9	1674.4	1697.7	1728.2	1735.3
30°	1601.0	1620.7	1649.4	1679.8	1687.0
32.5°	1541.9	1561.6	1595.6	1627.9	1636.8
35°	1481.0	1498.9	1534.7	1572.4	1583.1
37.5°	1411.2	1434.5	1473.9	1511.5	1522.2
40°	1337.8	1366.4	1411.2	1450.6	1463.1
42.5°	1267.9	1298.4	1343.1	1386.1	1400.4
45°	1194.5	1223.1	1276.9	1325.2	1336.0
47.5°	1119.3	1151.5	1208.8	1257.2	1275.1
50°	1044.1	1078.1	1139.0	1189.1	1199.9
52.5°	968.8	1004.7	1069.1	1122.9	1128.2
55°	890.0	929.4	997.5	1049.4	1060.2
57.5°	818.4	852.4	925.9	979.6	992.1
60°	739.6	777.2	856.0	906.2	922.3
62.5°	664.4	703.8	786.2	836.3	850.6
65°	585.6	630.4	711.0	770.1	784.4
67.5°	517.6	560.5	646.5	703.8	718.1
70°	438.8	487.1	578.4	637.5	651.9
72.5°	370.7	420.8	512.2	569.5	591.0
75°	297.3	354.6	445.9	506.8	521.1
77.5°	225.6	291.9	385.0	431.6	431.6
80°	161.2	231.0	317.0	338.5	342.0
82.5°	105.7	173.7	234.6	232.8	232.8
85°	60.9	112.8	139.7	136.1	136.1
87.5°	23.3	46.6	50.1	50.1	48.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)