

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: P311664

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-4500K**

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: P311664
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-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4500K 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: 5887.0 lumens
Efficiency: N/A
Efficacy: 121.4 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

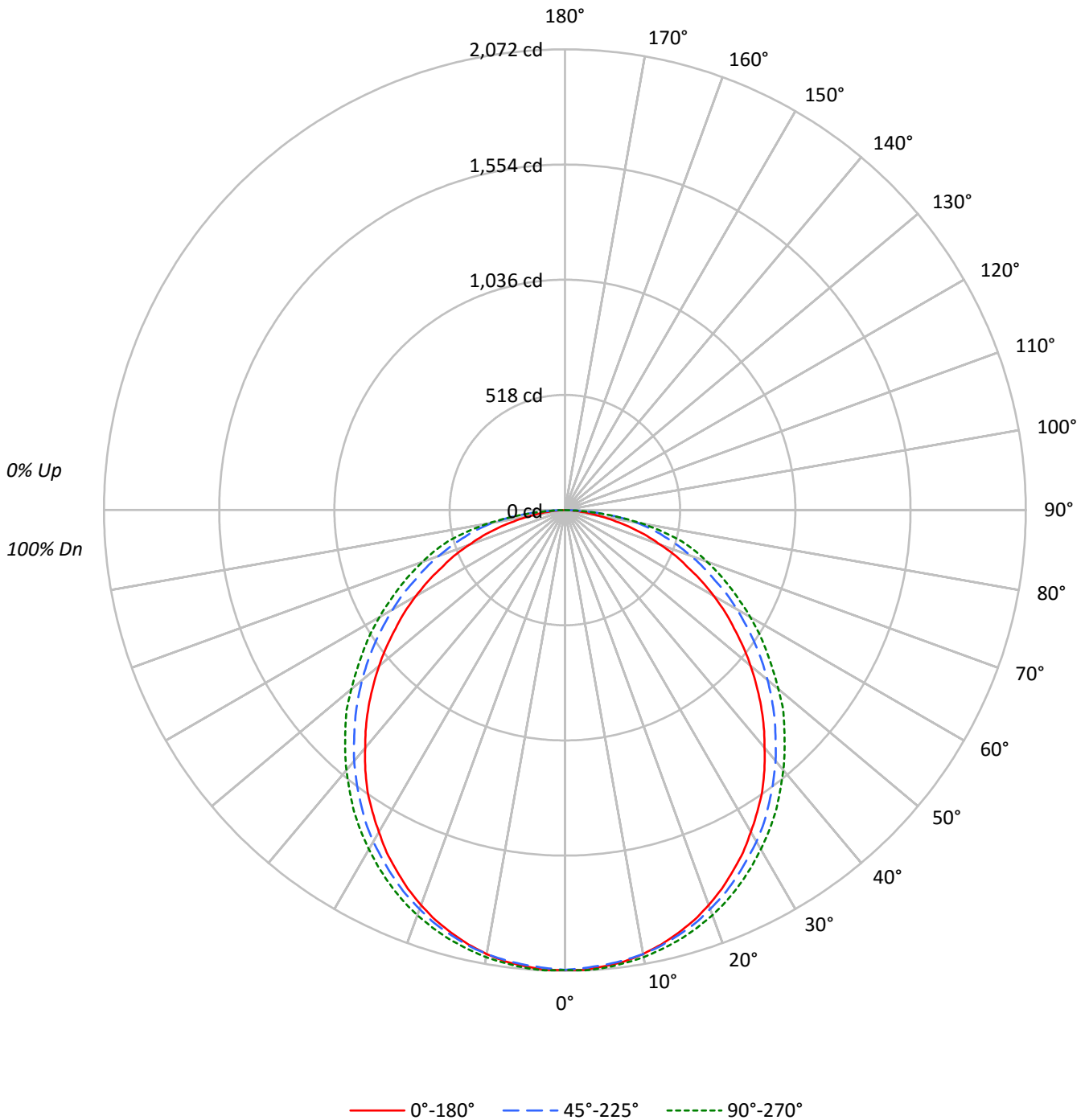
Input Watts (W): 48.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2783	2783	2783
5°	2781	2773	2791
10°	2769	2769	2790
15°	2743	2756	2785
20°	2707	2734	2776
25°	2657	2707	2759
30°	2597	2676	2737
35°	2540	2632	2715
40°	2453	2588	2683
45°	2373	2537	2654
50°	2282	2489	2623
55°	2180	2443	2597
60°	2078	2405	2591
65°	1947	2364	2607
70°	1802	2376	2678
75°	1614	2420	2829
80°	1304	2565	2768
85°	982	2252	2194



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.8	3.3
10°-20°	559.4	9.5
20°-30°	841.0	14.3
30°-40°	1001.7	17.0
40°-50°	1025.2	17.4
50°-60°	923.0	15.7
60°-70°	724.9	12.3
70°-80°	470.4	8.0
80°-90°	145.5	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°	1596.2	27.1
0°-40°	2598.0	44.1
0°-60°	4546.2	77.2
0°-90°	5887.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5887.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2068	2068	2068	2068	2068	
5°	2059	2062	2053	2064	2066	196
15°	1969	1975	1978	1995	1999	555
25°	1790	1804	1823	1853	1859	824
35°	1546	1565	1602	1642	1653	965
45°	1247	1277	1333	1384	1395	962
55°	929	970	1042	1096	1107	833
65°	612	658	742	804	819	609
75°	310	370	466	529	544	328
85°	64	118	146	142	142	77
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2068.1	2068.1	2068.1	2068.1	2068.1
2.5°	2070.0	2070.0	2060.7	2070.0	2071.9
5°	2058.8	2062.5	2053.2	2064.4	2066.3
7.5°	2047.6	2047.6	2042.0	2053.2	2055.1
10°	2027.0	2028.9	2027.0	2040.1	2042.0
12.5°	2000.8	2004.6	2006.4	2019.5	2021.4
15°	1969.0	1974.6	1978.4	1995.2	1999.0
17.5°	1933.5	1939.1	1948.5	1967.2	1970.9
20°	1890.5	1898.0	1909.2	1933.5	1939.1
22.5°	1843.8	1851.2	1869.9	1892.4	1901.7
25°	1789.5	1804.5	1823.2	1853.1	1858.7
27.5°	1735.3	1748.4	1772.7	1804.5	1812.0
30°	1671.7	1692.3	1722.2	1754.0	1761.5
32.5°	1610.0	1630.6	1666.1	1699.8	1709.1
35°	1546.4	1565.1	1602.5	1641.8	1653.0
37.5°	1473.5	1497.8	1539.0	1578.2	1589.4
40°	1396.8	1426.8	1473.5	1514.6	1527.7
42.5°	1323.9	1355.7	1402.4	1447.3	1462.3
45°	1247.2	1277.2	1333.3	1383.7	1395.0
47.5°	1168.7	1202.4	1262.2	1312.7	1331.4
50°	1090.2	1125.7	1189.3	1241.6	1252.9
52.5°	1011.6	1049.0	1116.3	1172.4	1178.1
55°	929.4	970.5	1041.6	1095.8	1107.0
57.5°	854.6	890.1	966.8	1022.9	1035.9
60°	772.3	811.5	893.8	946.2	963.0
62.5°	693.7	734.9	820.9	873.3	888.2
65°	611.5	658.2	742.4	804.1	819.0
67.5°	540.4	585.3	675.0	734.9	749.8
70°	458.1	508.6	604.0	665.7	680.7
72.5°	387.1	439.4	534.8	594.6	617.1
75°	310.4	370.2	465.6	529.2	544.1
77.5°	235.6	304.8	402.0	450.7	450.7
80°	168.3	241.2	331.0	353.4	357.2
82.5°	110.3	181.4	245.0	243.1	243.1
85°	63.6	117.8	145.9	142.1	142.1
87.5°	24.3	48.6	52.4	52.4	50.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)