

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: P311695

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-6500K**

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: P311695
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-6500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 6500K 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: 5668.0 lumens
Efficiency: N/A
Efficacy: 114.0 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

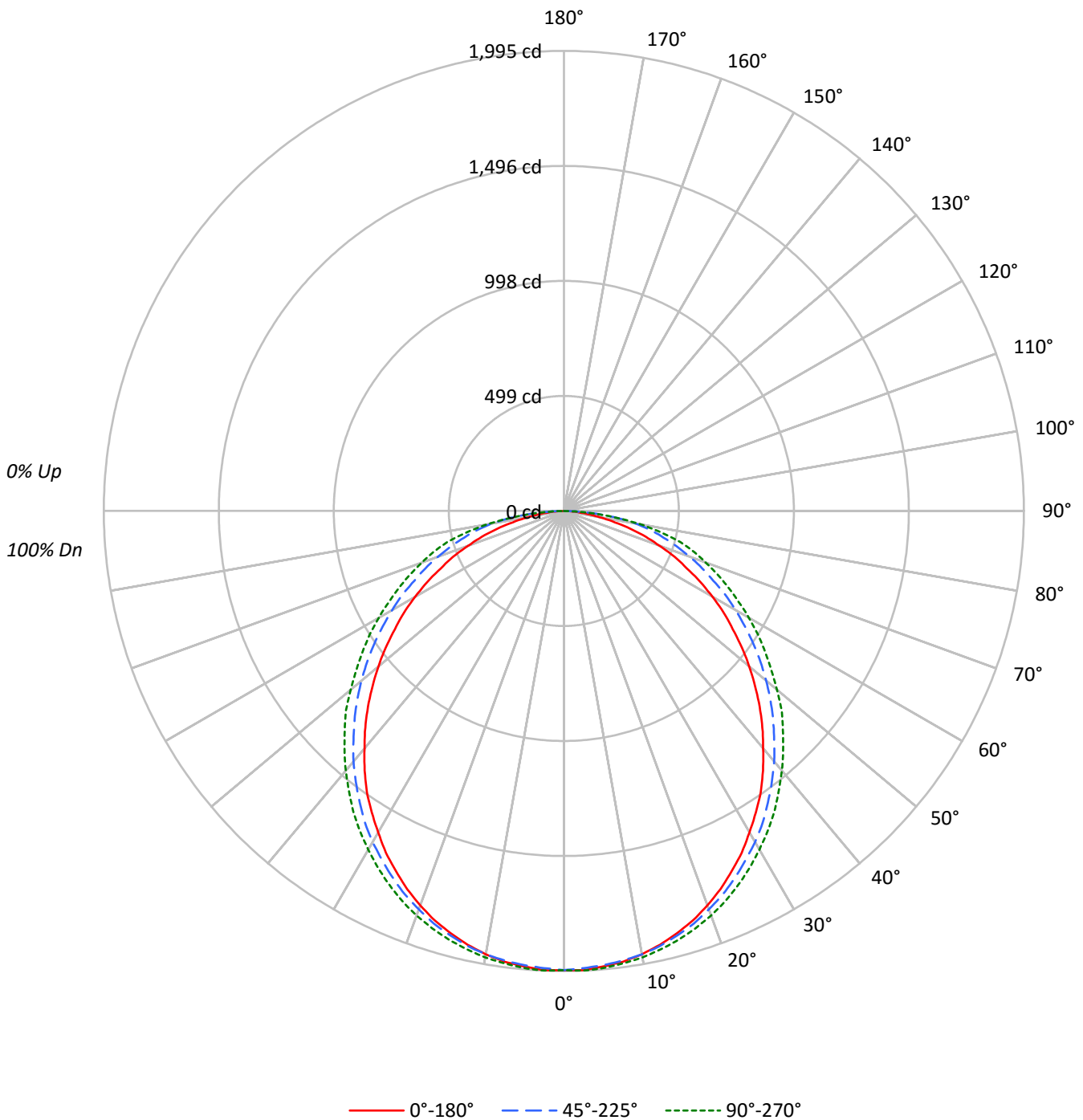
Input Watts (W): 49.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311695

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-6500K

Luminous Intensity Polar Plot





TEST NUMBER: P311695

CATALOG NUMBER: 24FC22-60HE-UNV-L82765-S-CP187-W2A-U-6500K

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°	2679	2679	2679
5°	2677	2670	2687
10°	2666	2666	2686
15°	2641	2653	2681
20°	2606	2632	2673
25°	2558	2606	2657
30°	2501	2576	2635
35°	2446	2534	2614
40°	2362	2492	2584
45°	2285	2443	2556
50°	2197	2397	2525
55°	2099	2352	2500
60°	2001	2316	2495
65°	1874	2275	2511
70°	1735	2288	2578
75°	1554	2331	2724
80°	1255	2469	2665
85°	945	2167	2112



TEST NUMBER: P311695

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-6500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.5	3.3
10°-20°	538.6	9.5
20°-30°	809.7	14.3
30°-40°	964.5	17.0
40°-50°	987.1	17.4
50°-60°	888.7	15.7
60°-70°	697.9	12.3
70°-80°	453.0	8.0
80°-90°	140.1	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°	1536.8	27.1
0°-40°	2501.3	44.1
0°-60°	4377.1	77.2
0°-90°	5668.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5668.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1991	1991	1991	1991	1991	
5°	1982	1986	1977	1988	1989	188
15°	1896	1901	1905	1921	1925	535
25°	1723	1737	1755	1784	1790	794
35°	1489	1507	1543	1581	1592	929
45°	1201	1230	1284	1332	1343	926
55°	895	934	1003	1055	1066	802
65°	589	634	715	774	789	586
75°	299	356	448	510	524	316
85°	61	113	140	137	137	74
90°	0	0	0	0	0	



TEST NUMBER: P311695

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-S-CP187-W2A-U-6500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1991.2	1991.2	1991.2	1991.2	1991.2
2.5°	1993.0	1993.0	1984.0	1993.0	1994.8
5°	1982.2	1985.8	1976.8	1987.6	1989.4
7.5°	1971.4	1971.4	1966.0	1976.8	1978.6
10°	1951.6	1953.4	1951.6	1964.2	1966.0
12.5°	1926.4	1930.0	1931.8	1944.4	1946.2
15°	1895.8	1901.2	1904.8	1921.0	1924.6
17.5°	1861.6	1867.0	1876.0	1894.0	1897.6
20°	1820.2	1827.4	1838.2	1861.6	1867.0
22.5°	1775.2	1782.4	1800.4	1822.0	1831.0
25°	1723.0	1737.4	1755.4	1784.2	1789.6
27.5°	1670.7	1683.3	1706.7	1737.4	1744.6
30°	1609.5	1629.3	1658.1	1688.7	1695.9
32.5°	1550.1	1569.9	1604.1	1636.5	1645.5
35°	1488.9	1506.9	1542.9	1580.7	1591.5
37.5°	1418.7	1442.1	1481.7	1519.5	1530.3
40°	1344.9	1373.7	1418.7	1458.3	1470.9
42.5°	1274.7	1305.3	1350.3	1393.5	1407.9
45°	1200.8	1229.7	1283.7	1332.3	1343.1
47.5°	1125.2	1157.6	1215.2	1263.9	1281.9
50°	1049.6	1083.8	1145.0	1195.4	1206.2
52.5°	974.0	1010.0	1074.8	1128.8	1134.2
55°	894.8	934.4	1002.8	1055.0	1065.8
57.5°	822.8	857.0	930.8	984.8	997.4
60°	743.6	781.4	860.6	911.0	927.2
62.5°	667.9	707.5	790.4	840.8	855.2
65°	588.7	633.7	714.7	774.2	788.6
67.5°	520.3	563.5	649.9	707.5	721.9
70°	441.1	489.7	581.5	640.9	655.3
72.5°	372.7	423.1	514.9	572.5	594.1
75°	298.9	356.5	448.3	509.5	523.9
77.5°	226.8	293.5	387.1	433.9	433.9
80°	162.0	232.2	318.7	340.3	343.9
82.5°	106.2	174.6	235.8	234.0	234.0
85°	61.2	113.4	140.4	136.8	136.8
87.5°	23.4	46.8	50.4	50.4	48.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)