

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: P311777

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-2700K**

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: P311777
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: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 2700K 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: 5816.0 lumens
Efficiency: N/A
Efficacy: 100.8 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

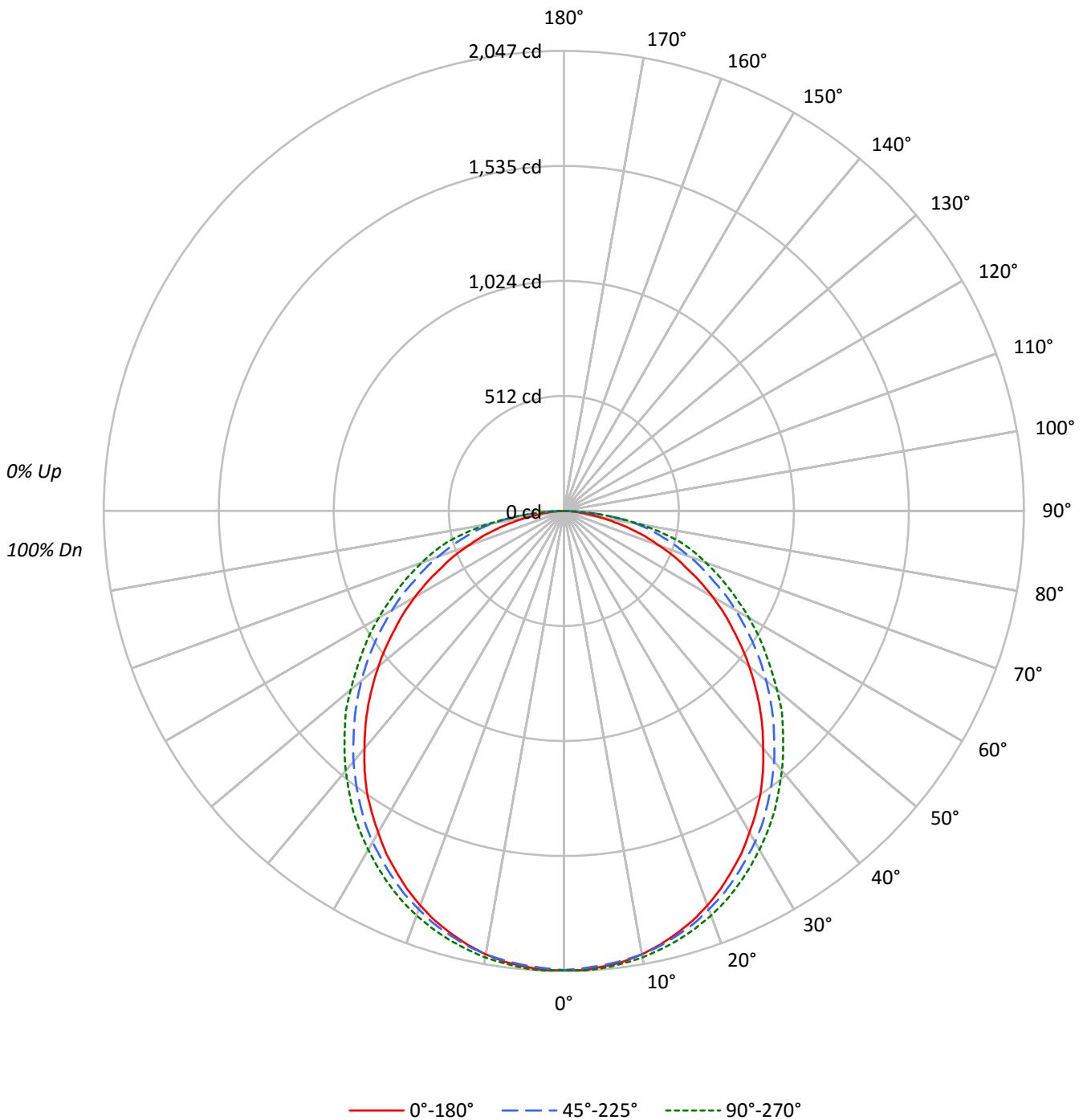
Input Watts (W): 57.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311777

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-2700K

Luminous Intensity Polar Plot





TEST NUMBER: P311777

CATALOG NUMBER: 24FC22-70HE-UNV-L82765-S-CP187-W2A-U-2700K

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°	2749	2749	2749
5°	2747	2740	2757
10°	2736	2736	2756
15°	2710	2723	2751
20°	2674	2701	2743
25°	2625	2674	2726
30°	2566	2643	2704
35°	2509	2600	2682
40°	2424	2557	2651
45°	2345	2506	2622
50°	2254	2459	2591
55°	2154	2414	2565
60°	2053	2376	2560
65°	1923	2335	2576
70°	1781	2347	2645
75°	1594	2391	2795
80°	1289	2534	2734
85°	969	2225	2167



TEST NUMBER: P311777

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-S-CP187-W2A-U-2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.4	3.3
10°-20°	552.7	9.5
20°-30°	830.8	14.3
30°-40°	989.7	17.0
40°-50°	1012.9	17.4
50°-60°	911.9	15.7
60°-70°	716.1	12.3
70°-80°	464.8	8.0
80°-90°	143.7	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°	1577.0	27.1
0°-40°	2566.6	44.1
0°-60°	4491.4	77.2
0°-90°	5816.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5816.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2043	2043	2043	2043	2043	
5°	2034	2038	2028	2040	2041	193
15°	1945	1951	1954	1971	1975	549
25°	1768	1783	1801	1831	1836	814
35°	1528	1546	1583	1622	1633	953
45°	1232	1262	1317	1367	1378	950
55°	918	959	1029	1083	1094	823
65°	604	650	733	794	809	601
75°	307	366	460	523	538	325
85°	63	116	144	140	140	76
90°	0	0	0	0	0	



TEST NUMBER: P311777

CATALOG NUMBER: 24FC22-70HE-UNV-L82765-S-CP187-W2A-U-2700K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2043.2	2043.2	2043.2	2043.2	2043.2
2.5°	2045.0	2045.0	2035.8	2045.0	2046.9
5°	2034.0	2037.7	2028.4	2039.5	2041.4
7.5°	2022.9	2022.9	2017.3	2028.4	2030.3
10°	2002.6	2004.4	2002.6	2015.5	2017.3
12.5°	1976.7	1980.4	1982.2	1995.2	1997.0
15°	1945.3	1950.8	1954.5	1971.2	1974.8
17.5°	1910.2	1915.7	1925.0	1943.4	1947.1
20°	1867.7	1875.1	1886.2	1910.2	1915.7
22.5°	1821.5	1828.9	1847.4	1869.5	1878.8
25°	1767.9	1782.7	1801.2	1830.8	1836.3
27.5°	1714.4	1727.3	1751.3	1782.7	1790.1
30°	1651.6	1671.9	1701.4	1732.8	1740.2
32.5°	1590.6	1610.9	1646.0	1679.3	1688.5
35°	1527.8	1546.3	1583.2	1622.0	1633.1
37.5°	1455.7	1479.7	1520.4	1559.2	1570.3
40°	1380.0	1409.5	1455.7	1496.4	1509.3
42.5°	1307.9	1339.3	1385.5	1429.9	1444.6
45°	1232.2	1261.8	1317.2	1367.1	1378.1
47.5°	1154.6	1187.9	1247.0	1296.9	1315.3
50°	1077.0	1112.1	1174.9	1226.7	1237.7
52.5°	999.4	1036.4	1102.9	1158.3	1163.8
55°	918.1	958.8	1029.0	1082.6	1093.6
57.5°	844.3	879.4	955.1	1010.5	1023.4
60°	763.0	801.8	883.0	934.8	951.4
62.5°	685.4	726.0	811.0	862.7	877.5
65°	604.1	650.3	733.4	794.4	809.2
67.5°	533.9	578.2	666.9	726.0	740.8
70°	452.6	502.5	596.7	657.7	672.4
72.5°	382.4	434.1	528.3	587.5	609.6
75°	306.7	365.8	460.0	522.8	537.6
77.5°	232.8	301.1	397.2	445.2	445.2
80°	166.3	238.3	327.0	349.2	352.8
82.5°	109.0	179.2	242.0	240.2	240.2
85°	62.8	116.4	144.1	140.4	140.4
87.5°	24.0	48.0	51.7	51.7	49.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)