

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: P314133

Luminaire Tested: **24FCZ2-70HE-UNV-L83050-CP187-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: P314133  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)  
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-L83050-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB 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**

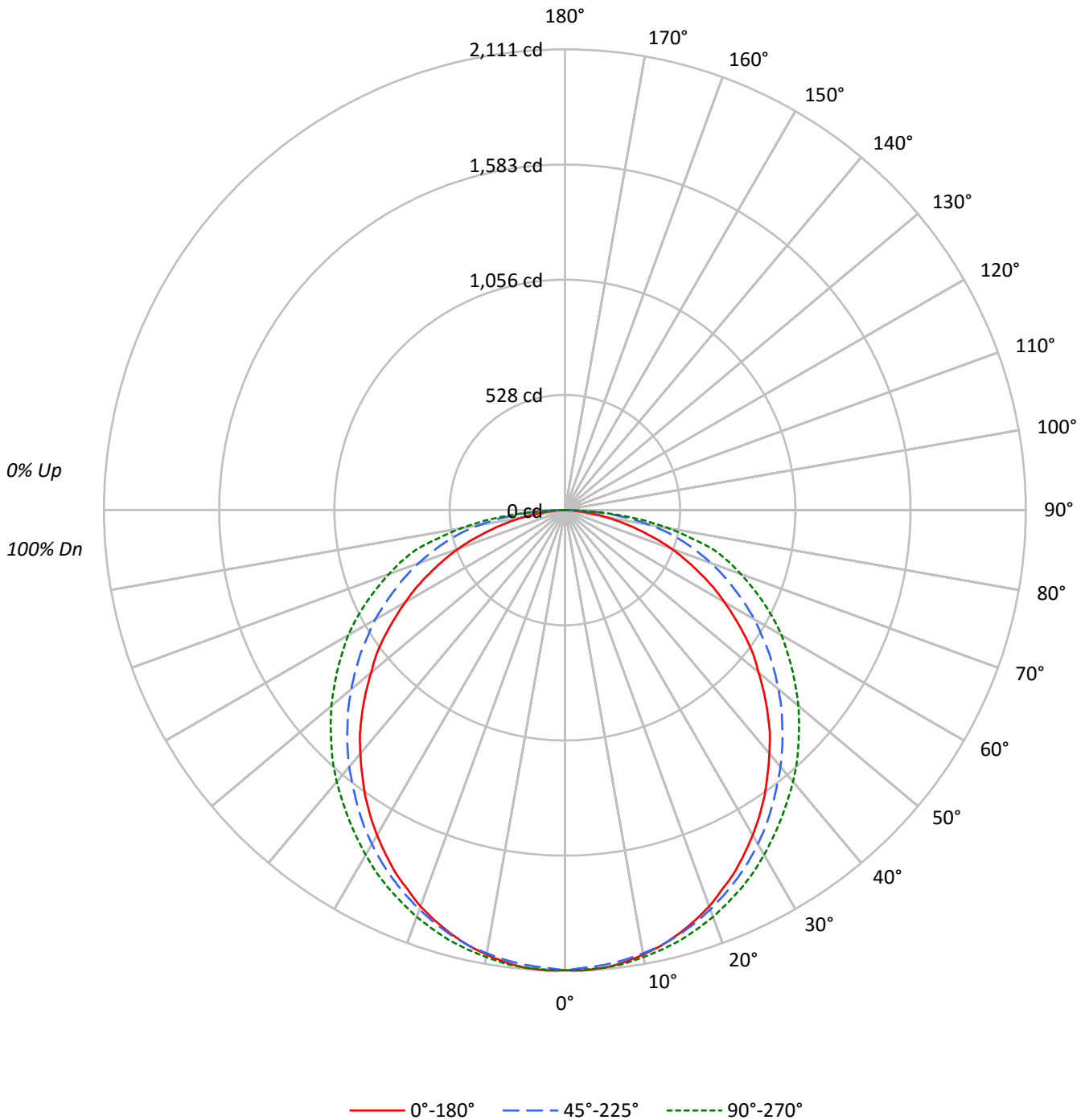
Lumens per Lamp: N/A  
Luminaire Lumens: 6394.0 lumens  
Efficiency: N/A  
Efficacy: 105.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 60.5  
Input Voltage (V): NR  
Input Current (A<sub>in</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



TEST NUMBER: P314133

CATALOG NUMBER: 24FCZ2-70HE-UNV-L83050-CP187-W2A-U-4500K

### Luminous Intensity Polar Plot





TEST NUMBER: P314133

CATALOG NUMBER: 24FCZ2-70HE-UNV-L83050-CP187-W2A-U-4500K

**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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2837	2837	2837
5°	2842	2825	2842
10°	2826	2817	2840
15°	2801	2807	2843
20°	2767	2789	2840
25°	2724	2768	2838
30°	2673	2745	2834
35°	2620	2718	2836
40°	2560	2698	2854
45°	2499	2680	2878
50°	2425	2673	2922
55°	2364	2677	2981
60°	2272	2700	3083
65°	2168	2729	3195
70°	2053	2812	3372
75°	1831	2934	3684
80°	1561	3106	3764
85°	1113	3078	3603



TEST NUMBER: P314133

CATALOG NUMBER: 24FCZ2-70HE-UNV-L83050-CP187-W2A-U-4500K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	199.6	3.1
10°-20°	570.6	8.9
20°-30°	861.9	13.5
30°-40°	1038.8	16.2
40°-50°	1090.5	17.1
50°-60°	1020.2	16.0
60°-70°	842.5	13.2
70°-80°	574.1	9.0
80°-90°	195.8	3.1
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°	1632.1	25.5
0°-40°	2670.8	41.8
0°-60°	4781.6	74.8
0°-90°	6394.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6394.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2109	2109	2109	2109	2109	
5°	2104	2102	2092	2104	2104	200
15°	2011	2013	2015	2037	2041	567
25°	1835	1844	1865	1901	1911	844
35°	1595	1612	1655	1710	1727	997
45°	1313	1341	1409	1485	1513	1013
55°	1008	1048	1141	1235	1271	899
65°	681	738	857	965	1003	675
75°	352	433	564	670	709	376
85°	72	142	199	225	233	90
90°	0	0	0	0	0	



TEST NUMBER: P314133

CATALOG NUMBER: 24FCZ2-70HE-UNV-L83050-CP187-W2A-U-4500K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2108.7	2108.7	2108.7	2108.7	2108.7
2.5°	2110.8	2108.7	2098.1	2108.7	2106.6
5°	2104.4	2102.3	2091.7	2104.4	2104.4
7.5°	2089.6	2089.6	2079.0	2093.8	2096.0
10°	2068.4	2068.4	2062.0	2079.0	2079.0
12.5°	2042.9	2042.9	2042.9	2059.9	2062.0
15°	2011.1	2013.2	2015.3	2036.6	2040.8
17.5°	1972.9	1977.2	1983.5	2009.0	2013.2
20°	1932.6	1936.9	1947.5	1977.2	1983.5
22.5°	1881.7	1892.3	1907.2	1941.1	1947.5
25°	1835.0	1843.5	1864.7	1900.8	1911.4
27.5°	1777.7	1790.5	1818.1	1856.2	1871.1
30°	1720.5	1733.2	1767.1	1811.7	1824.4
32.5°	1658.9	1678.0	1714.1	1760.8	1775.6
35°	1595.3	1612.3	1654.7	1709.9	1726.8
37.5°	1525.3	1548.6	1595.3	1654.7	1675.9
40°	1457.4	1482.9	1535.9	1599.5	1625.0
42.5°	1389.5	1415.0	1474.4	1546.5	1572.0
45°	1313.2	1340.7	1408.6	1485.0	1512.6
47.5°	1236.8	1270.7	1345.0	1425.6	1455.3
50°	1158.3	1196.5	1277.1	1361.9	1395.9
52.5°	1088.3	1124.3	1209.2	1300.4	1332.2
55°	1007.7	1048.0	1141.3	1234.7	1270.7
57.5°	924.9	969.5	1069.2	1171.0	1207.1
60°	844.3	893.1	1003.4	1105.3	1145.6
62.5°	765.8	814.6	929.2	1035.3	1075.6
65°	681.0	738.3	857.1	965.2	1003.4
67.5°	600.4	661.9	787.0	893.1	931.3
70°	521.9	581.3	714.9	818.9	857.1
72.5°	437.0	504.9	638.5	746.7	787.0
75°	352.2	432.8	564.3	670.4	708.6
77.5°	273.7	356.4	487.9	574.9	594.0
80°	201.5	286.4	400.9	462.5	485.8
82.5°	129.4	214.3	305.5	350.0	369.1
85°	72.1	142.1	199.4	224.9	233.4
87.5°	29.7	61.5	80.6	91.2	91.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)