

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: P311106

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-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: P311106  
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-L82765-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**

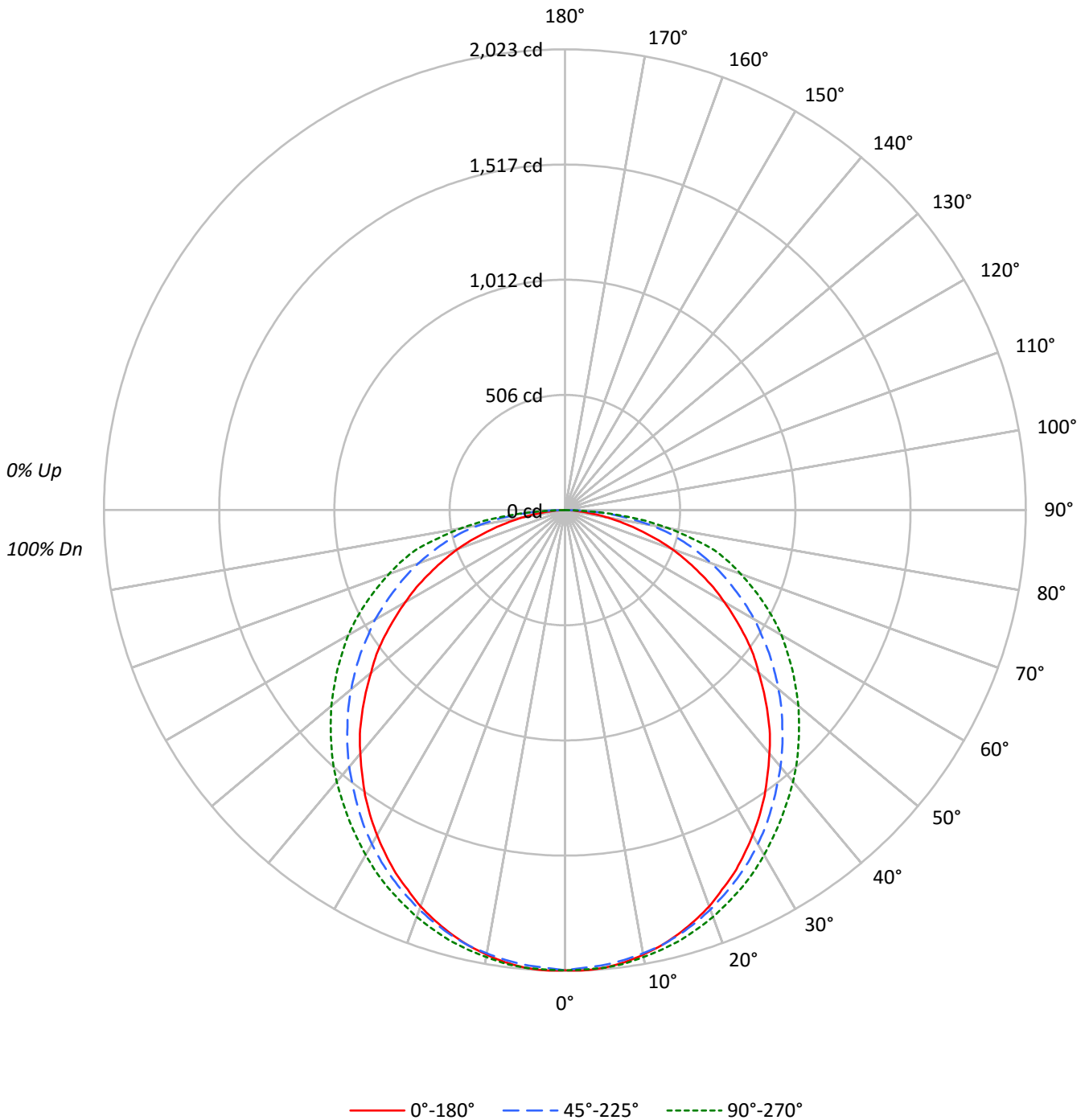
Lumens per Lamp: N/A  
Luminaire Lumens: 6128.0 lumens  
Efficiency: N/A  
Efficacy: 104.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 58.8  
Input Voltage (V): NR  
Input Current (A<sub>in</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



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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	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°	2719	2719	2719
5°	2724	2708	2724
10°	2708	2700	2722
15°	2685	2690	2724
20°	2652	2672	2722
25°	2611	2653	2720
30°	2562	2631	2717
35°	2511	2605	2718
40°	2453	2585	2735
45°	2395	2569	2758
50°	2324	2562	2800
55°	2266	2566	2857
60°	2178	2588	2954
65°	2078	2615	3062
70°	1968	2696	3231
75°	1755	2811	3530
80°	1497	2978	3608
85°	1067	2950	3452



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.3	3.1
10°-20°	546.9	8.9
20°-30°	826.0	13.5
30°-40°	995.5	16.2
40°-50°	1045.1	17.1
50°-60°	977.8	16.0
60°-70°	807.5	13.2
70°-80°	550.2	9.0
80°-90°	187.7	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°	1564.2	25.5
0°-40°	2559.7	41.8
0°-60°	4582.6	74.8
0°-90°	6128.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6128.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2021	2021	2021	2021	2021	
5°	2017	2015	2005	2017	2017	191
15°	1927	1930	1932	1952	1956	543
25°	1759	1767	1787	1822	1832	809
35°	1529	1545	1586	1639	1655	955
45°	1258	1285	1350	1423	1450	971
55°	966	1004	1094	1183	1218	862
65°	653	708	821	925	962	647
75°	338	415	541	642	679	360
85°	69	136	191	216	224	87
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2021.0	2021.0	2021.0	2021.0	2021.0
2.5°	2023.0	2021.0	2010.8	2021.0	2018.9
5°	2016.9	2014.9	2004.7	2016.9	2016.9
7.5°	2002.7	2002.7	1992.5	2006.7	2008.8
10°	1982.3	1982.3	1976.2	1992.5	1992.5
12.5°	1957.9	1957.9	1957.9	1974.2	1976.2
15°	1927.4	1929.5	1931.5	1951.8	1955.9
17.5°	1890.8	1894.9	1901.0	1925.4	1929.5
20°	1852.2	1856.3	1866.4	1894.9	1901.0
22.5°	1803.4	1813.6	1827.8	1860.3	1866.4
25°	1758.7	1766.8	1787.1	1821.7	1831.9
27.5°	1703.8	1716.0	1742.4	1779.0	1793.2
30°	1648.9	1661.1	1693.6	1736.3	1748.5
32.5°	1589.9	1608.2	1642.8	1687.5	1701.8
35°	1528.9	1545.2	1585.9	1638.7	1655.0
37.5°	1461.8	1484.2	1528.9	1585.9	1606.2
40°	1396.8	1421.2	1472.0	1533.0	1557.4
42.5°	1331.7	1356.1	1413.0	1482.2	1506.6
45°	1258.5	1285.0	1350.0	1423.2	1449.6
47.5°	1185.3	1217.9	1289.0	1366.3	1394.7
50°	1110.1	1146.7	1224.0	1305.3	1337.8
52.5°	1043.0	1077.6	1158.9	1246.3	1276.8
55°	965.8	1004.4	1093.8	1183.3	1217.9
57.5°	886.5	929.2	1024.7	1122.3	1156.9
60°	809.2	856.0	961.7	1059.3	1097.9
62.5°	734.0	780.7	890.5	992.2	1030.8
65°	652.6	707.5	821.4	925.1	961.7
67.5°	575.4	634.3	754.3	856.0	892.6
70°	500.2	557.1	685.2	784.8	821.4
72.5°	418.8	483.9	612.0	715.7	754.3
75°	337.5	414.8	540.8	642.5	679.1
77.5°	262.3	341.6	467.6	551.0	569.3
80°	193.2	274.5	384.3	443.2	465.6
82.5°	124.0	205.3	292.8	335.5	353.8
85°	69.1	136.2	191.1	215.5	223.6
87.5°	28.5	59.0	77.3	87.4	87.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)