

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: P310839

Luminaire Tested: **24FCZ2-45-UNV-L82765-CP187-W2A-U-5700K**

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: P310839  
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: 24FCZ2-45-UNV-L82765-CP187-W2A-U-5700K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET  
Light Source: (168) 5700K 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**

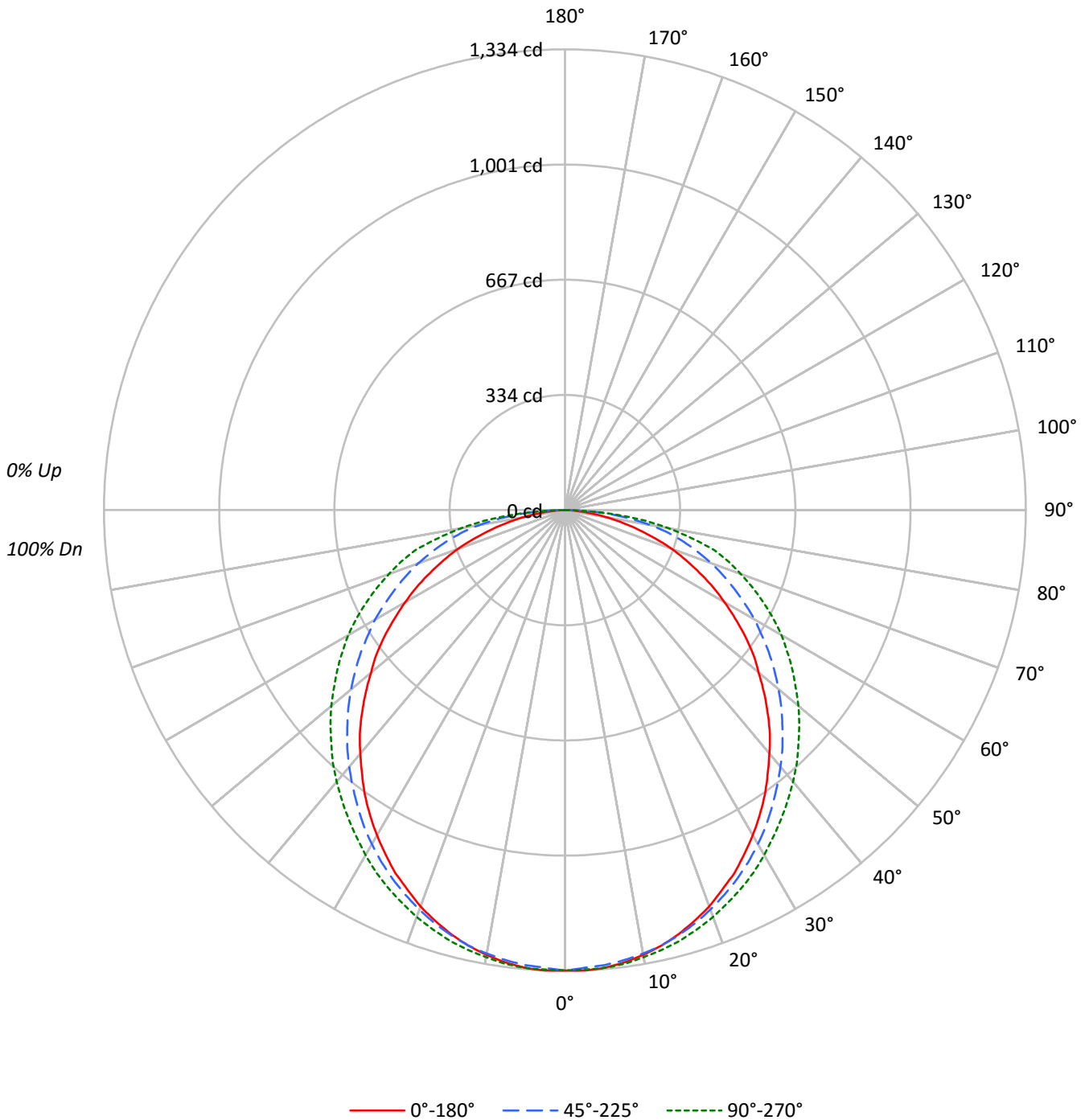
Lumens per Lamp: N/A  
Luminaire Lumens: 4042.0 lumens  
Efficiency: N/A  
Efficacy: 104.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 38.7  
Input Voltage (V): NR  
Input Current (A<sub>in</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°	1794	1794	1794
5°	1797	1786	1797
10°	1786	1781	1796
15°	1771	1775	1797
20°	1749	1763	1795
25°	1722	1750	1794
30°	1690	1736	1792
35°	1657	1718	1793
40°	1618	1705	1804
45°	1580	1694	1819
50°	1533	1690	1847
55°	1494	1692	1884
60°	1436	1707	1949
65°	1371	1725	2019
70°	1298	1778	2131
75°	1157	1854	2328
80°	987	1964	2380
85°	704	1947	2277



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	126.2	3.1
10°-20°	360.7	8.9
20°-30°	544.8	13.5
30°-40°	656.7	16.2
40°-50°	689.4	17.1
50°-60°	645.0	16.0
60°-70°	532.6	13.2
70°-80°	362.9	9.0
80°-90°	123.8	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°	1031.7	25.5
0°-40°	1688.4	41.8
0°-60°	3022.7	74.8
0°-90°	4042.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4042.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1333	1333	1333	1333	1333	
5°	1330	1329	1322	1330	1330	126
15°	1271	1273	1274	1287	1290	358
25°	1160	1165	1179	1202	1208	534
35°	1008	1019	1046	1081	1092	630
45°	830	848	890	939	956	640
55°	637	662	722	780	803	569
65°	430	467	542	610	634	427
75°	223	274	357	424	448	237
85°	46	90	126	142	148	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1333.0	1333.0	1333.0	1333.0	1333.0
2.5°	1334.4	1333.0	1326.3	1333.0	1331.7
5°	1330.3	1329.0	1322.3	1330.3	1330.3
7.5°	1320.9	1320.9	1314.2	1323.6	1325.0
10°	1307.5	1307.5	1303.5	1314.2	1314.2
12.5°	1291.4	1291.4	1291.4	1302.2	1303.5
15°	1271.3	1272.7	1274.0	1287.4	1290.1
17.5°	1247.2	1249.9	1253.9	1270.0	1272.7
20°	1221.7	1224.4	1231.1	1249.9	1253.9
22.5°	1189.5	1196.2	1205.6	1227.1	1231.1
25°	1160.0	1165.4	1178.8	1201.6	1208.3
27.5°	1123.8	1131.9	1149.3	1173.4	1182.8
30°	1087.6	1095.6	1117.1	1145.3	1153.3
32.5°	1048.7	1060.8	1083.6	1113.1	1122.5
35°	1008.5	1019.2	1046.0	1080.9	1091.6
37.5°	964.2	979.0	1008.5	1046.0	1059.4
40°	921.3	937.4	970.9	1011.2	1027.3
42.5°	878.4	894.5	932.0	977.6	993.7
45°	830.1	847.6	890.5	938.7	956.2
47.5°	781.8	803.3	850.2	901.2	920.0
50°	732.2	756.4	807.3	861.0	882.4
52.5°	688.0	710.8	764.4	822.1	842.2
55°	637.0	662.5	721.5	780.5	803.3
57.5°	584.7	612.9	675.9	740.3	763.1
60°	533.7	564.6	634.3	698.7	724.2
62.5°	484.1	515.0	587.4	654.4	679.9
65°	430.5	466.7	541.8	610.2	634.3
67.5°	379.5	418.4	497.5	564.6	588.7
70°	329.9	367.5	451.9	517.7	541.8
72.5°	276.3	319.2	403.7	472.1	497.5
75°	222.6	273.6	356.7	423.8	447.9
77.5°	173.0	225.3	308.4	363.4	375.5
80°	127.4	181.0	253.5	292.4	307.1
82.5°	81.8	135.4	193.1	221.3	233.3
85°	45.6	89.9	126.1	142.2	147.5
87.5°	18.8	38.9	51.0	57.7	57.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)