

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: P311511

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-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: P311511  
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: 24FCZ2-45-UNV-L82765-S-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET  
Light Source: (168) 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**

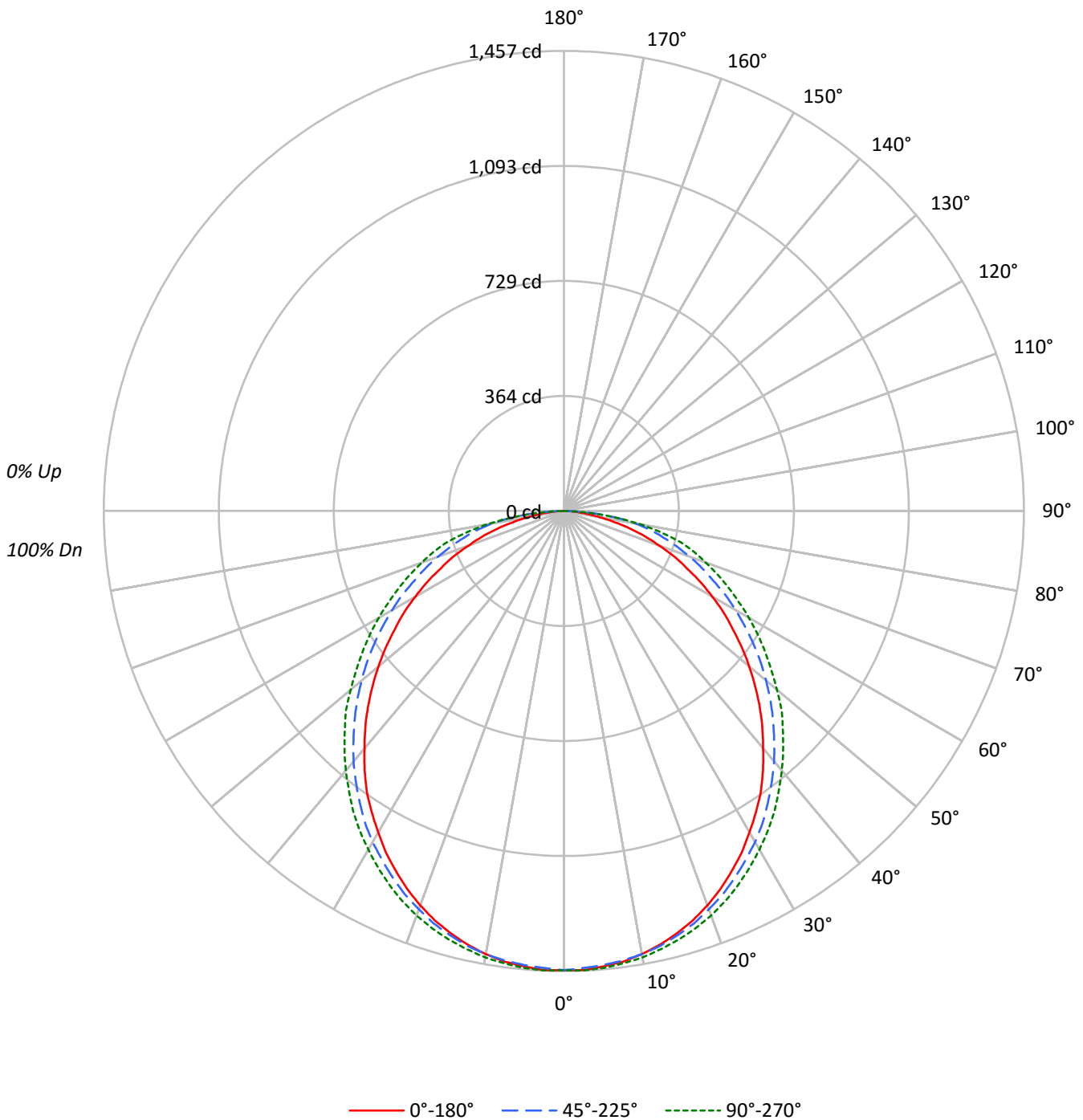
Lumens per Lamp: N/A  
Luminaire Lumens: 4139.0 lumens  
Efficiency: N/A  
Efficacy: 108.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 38.3  
Input Voltage (V): NR  
Input Current (A<sub>in</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	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°	1956	1956	1956
5°	1955	1950	1962
10°	1947	1947	1962
15°	1928	1938	1958
20°	1903	1922	1952
25°	1868	1903	1940
30°	1826	1881	1924
35°	1786	1851	1909
40°	1725	1820	1887
45°	1669	1784	1866
50°	1604	1750	1844
55°	1533	1718	1826
60°	1461	1691	1822
65°	1369	1662	1833
70°	1267	1670	1883
75°	1134	1702	1989
80°	917	1803	1946
85°	690	1582	1542



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.7	3.3
10°-20°	393.3	9.5
20°-30°	591.3	14.3
30°-40°	704.3	17.0
40°-50°	720.8	17.4
50°-60°	648.9	15.7
60°-70°	509.6	12.3
70°-80°	330.8	8.0
80°-90°	102.3	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°	1122.3	27.1
0°-40°	1826.6	44.1
0°-60°	3196.3	77.2
0°-90°	4139.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4139.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1454	1454	1454	1454	1454	
5°	1448	1450	1444	1451	1453	138
15°	1384	1388	1391	1403	1405	390
25°	1258	1269	1282	1303	1307	580
35°	1087	1100	1127	1154	1162	678
45°	877	898	937	973	981	676
55°	653	682	732	770	778	586
65°	430	463	522	565	576	428
75°	218	260	327	372	383	231
85°	45	83	102	100	100	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1454.1	1454.1	1454.1	1454.1	1454.1
2.5°	1455.4	1455.4	1448.8	1455.4	1456.7
5°	1447.5	1450.1	1443.5	1451.4	1452.7
7.5°	1439.6	1439.6	1435.7	1443.5	1444.9
10°	1425.1	1426.4	1425.1	1434.3	1435.7
12.5°	1406.7	1409.4	1410.7	1419.9	1421.2
15°	1384.4	1388.3	1391.0	1402.8	1405.4
17.5°	1359.4	1363.3	1369.9	1383.1	1385.7
20°	1329.2	1334.4	1342.3	1359.4	1363.3
22.5°	1296.3	1301.6	1314.7	1330.5	1337.0
25°	1258.2	1268.7	1281.8	1302.9	1306.8
27.5°	1220.0	1229.2	1246.3	1268.7	1273.9
30°	1175.3	1189.8	1210.8	1233.2	1238.4
32.5°	1132.0	1146.4	1171.4	1195.1	1201.6
35°	1087.3	1100.4	1126.7	1154.3	1162.2
37.5°	1036.0	1053.1	1082.0	1109.6	1117.5
40°	982.1	1003.1	1036.0	1064.9	1074.1
42.5°	930.8	953.2	986.0	1017.6	1028.1
45°	876.9	897.9	937.4	972.9	980.8
47.5°	821.7	845.4	887.4	922.9	936.1
50°	766.5	791.4	836.1	873.0	880.8
52.5°	711.3	737.5	784.9	824.3	828.3
55°	653.4	682.3	732.3	770.4	778.3
57.5°	600.8	625.8	679.7	719.1	728.3
60°	543.0	570.6	628.4	665.2	677.1
62.5°	487.8	516.7	577.2	614.0	624.5
65°	429.9	462.8	521.9	565.3	575.8
67.5°	379.9	411.5	474.6	516.7	527.2
70°	322.1	357.6	424.6	468.0	478.6
72.5°	272.1	309.0	376.0	418.1	433.9
75°	218.2	260.3	327.4	372.1	382.6
77.5°	165.7	214.3	282.7	316.8	316.8
80°	118.3	169.6	232.7	248.5	251.1
82.5°	77.6	127.5	172.2	170.9	170.9
85°	44.7	82.8	102.5	99.9	99.9
87.5°	17.1	34.2	36.8	36.8	35.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)