

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: P311484

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CA08-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: P311484  
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-CA08-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC 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**

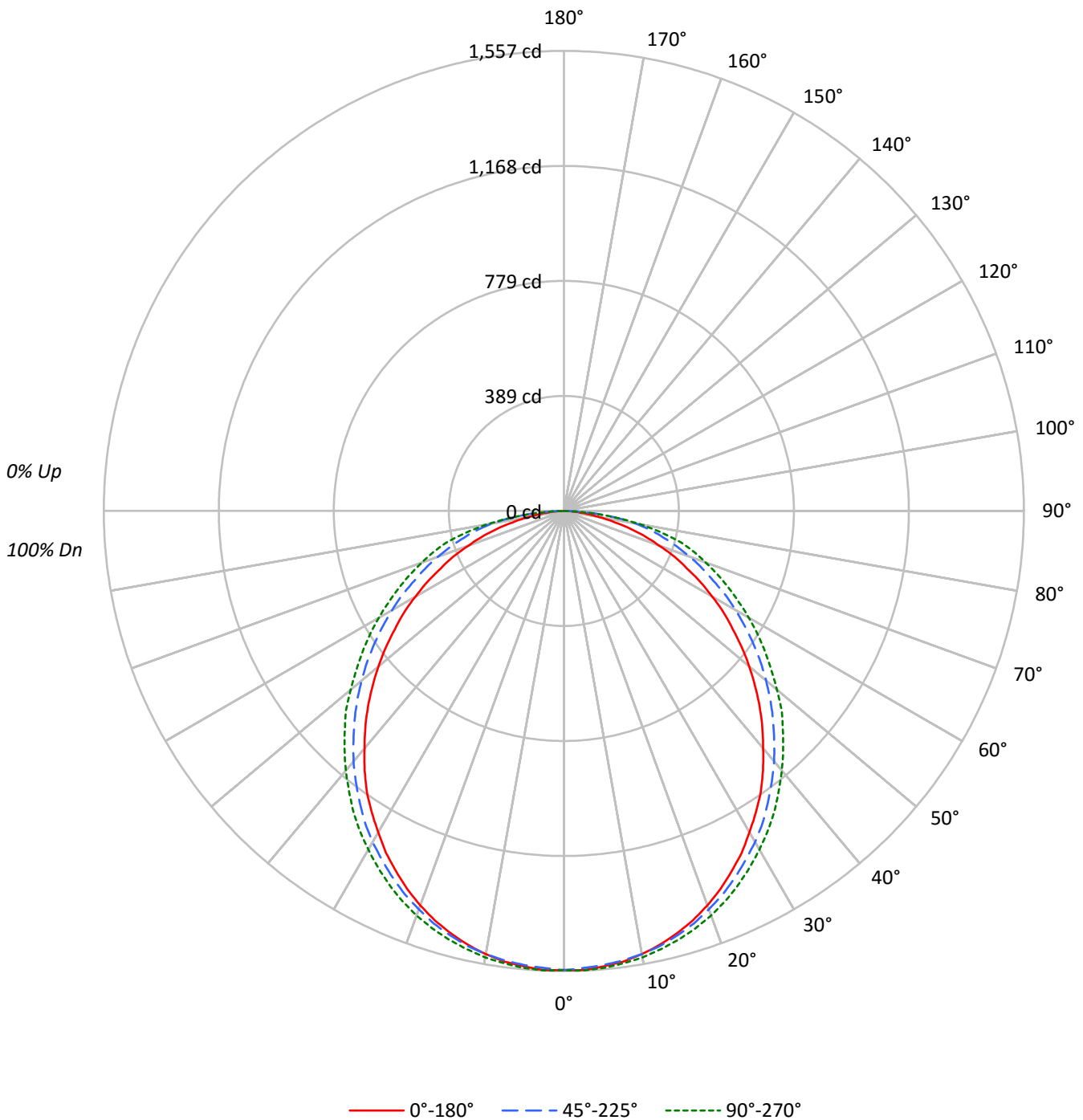
Lumens per Lamp: N/A  
Luminaire Lumens: 4423.0 lumens  
Efficiency: N/A  
Efficacy: 115.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 38.3  
Input Voltage (V): NR  
Input Current (A<sub>in</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°	2091	2091	2091
5°	2089	2083	2097
10°	2081	2081	2096
15°	2061	2070	2092
20°	2034	2054	2086
25°	1996	2034	2073
30°	1951	2010	2056
35°	1908	1978	2040
40°	1843	1945	2016
45°	1783	1906	1994
50°	1715	1870	1970
55°	1638	1836	1951
60°	1561	1807	1947
65°	1463	1776	1959
70°	1354	1785	2012
75°	1212	1818	2125
80°	979	1927	2079
85°	738	1692	1649



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.1	3.3
10°-20°	420.3	9.5
20°-30°	631.8	14.3
30°-40°	752.6	17.0
40°-50°	770.3	17.4
50°-60°	693.5	15.7
60°-70°	544.6	12.3
70°-80°	353.5	8.0
80°-90°	109.3	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°	1199.3	27.1
0°-40°	1951.9	44.1
0°-60°	3415.6	77.2
0°-90°	4423.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4423.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1554	1554	1554	1554	1554	
5°	1547	1550	1543	1551	1552	147
15°	1479	1484	1486	1499	1502	417
25°	1344	1356	1370	1392	1396	619
35°	1162	1176	1204	1234	1242	725
45°	937	960	1002	1040	1048	722
55°	698	729	782	823	832	626
65°	459	494	558	604	615	457
75°	233	278	350	398	409	247
85°	48	88	110	107	107	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1553.8	1553.8	1553.8	1553.8	1553.8
2.5°	1555.2	1555.2	1548.2	1555.2	1556.6
5°	1546.8	1549.6	1542.6	1551.0	1552.4
7.5°	1538.4	1538.4	1534.2	1542.6	1544.0
10°	1522.9	1524.3	1522.9	1532.8	1534.2
12.5°	1503.3	1506.1	1507.5	1517.3	1518.7
15°	1479.4	1483.6	1486.4	1499.0	1501.8
17.5°	1452.7	1456.9	1463.9	1478.0	1480.8
20°	1420.4	1426.0	1434.4	1452.7	1456.9
22.5°	1385.2	1390.9	1404.9	1421.8	1428.8
25°	1344.5	1355.7	1369.8	1392.3	1396.5
27.5°	1303.8	1313.6	1331.9	1355.7	1361.4
30°	1256.0	1271.4	1293.9	1317.8	1323.4
32.5°	1209.6	1225.1	1251.8	1277.1	1284.1
35°	1161.9	1175.9	1204.0	1233.5	1241.9
37.5°	1107.1	1125.3	1156.2	1185.7	1194.2
40°	1049.5	1071.9	1107.1	1138.0	1147.8
42.5°	994.7	1018.6	1053.7	1087.4	1098.6
45°	937.1	959.6	1001.7	1039.6	1048.1
47.5°	878.1	903.4	948.3	986.2	1000.3
50°	819.1	845.8	893.5	932.9	941.3
52.5°	760.1	788.2	838.7	880.9	885.1
55°	698.2	729.1	782.5	823.3	831.7
57.5°	642.0	668.7	726.3	768.5	778.3
60°	580.2	609.7	671.5	710.9	723.5
62.5°	521.2	552.1	616.8	656.1	667.3
65°	459.4	494.5	557.7	604.1	615.3
67.5°	406.0	439.7	507.2	552.1	563.4
70°	344.2	382.1	453.8	500.1	511.4
72.5°	290.8	330.2	401.8	446.8	463.6
75°	233.2	278.2	349.8	397.6	408.8
77.5°	177.0	229.0	302.1	338.6	338.6
80°	126.4	181.2	248.7	265.5	268.3
82.5°	82.9	136.3	184.0	182.6	182.6
85°	47.8	88.5	109.6	106.8	106.8
87.5°	18.3	36.5	39.3	39.3	37.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)