

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: P311441

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-5500K**

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: P311441  
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: 24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-5500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET  
Light Source: (336) 5500K 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**

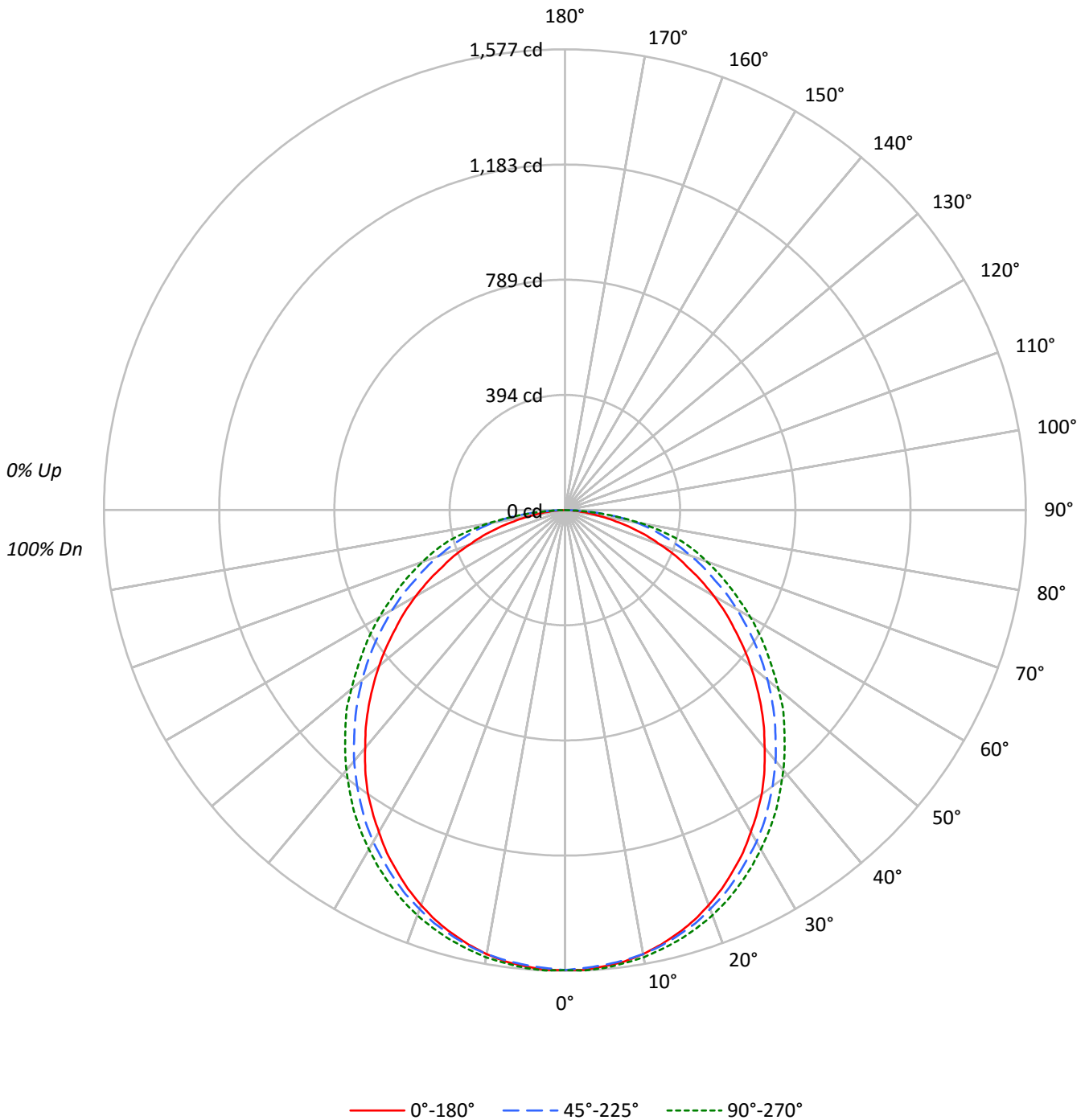
Lumens per Lamp: N/A  
Luminaire Lumens: 4481.0 lumens  
Efficiency: N/A  
Efficacy: 129.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.7  
Input Voltage (V): NR  
Input Current (A<sub>in</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	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°	2118	2118	2118
5°	2117	2111	2124
10°	2108	2108	2124
15°	2088	2098	2119
20°	2060	2081	2113
25°	2022	2060	2100
30°	1977	2037	2083
35°	1933	2004	2067
40°	1867	1970	2043
45°	1807	1931	2020
50°	1737	1895	1996
55°	1659	1860	1977
60°	1582	1831	1972
65°	1482	1799	1985
70°	1372	1808	2038
75°	1228	1842	2153
80°	993	1952	2107
85°	747	1714	1670



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.0	3.3
10°-20°	425.8	9.5
20°-30°	640.1	14.3
30°-40°	762.5	17.0
40°-50°	780.4	17.4
50°-60°	702.6	15.7
60°-70°	551.7	12.3
70°-80°	358.1	8.0
80°-90°	110.8	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°	1215.0	27.1
0°-40°	1977.5	44.1
0°-60°	3460.4	77.2
0°-90°	4481.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4481.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1574	1574	1574	1574	1574	
5°	1567	1570	1563	1571	1573	149
15°	1499	1503	1506	1519	1522	423
25°	1362	1374	1388	1410	1415	627
35°	1177	1191	1220	1250	1258	734
45°	949	972	1015	1053	1062	732
55°	707	739	793	834	843	634
65°	465	501	565	612	623	463
75°	236	282	354	403	414	250
85°	48	90	111	108	108	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1574.2	1574.2	1574.2	1574.2	1574.2
2.5°	1575.6	1575.6	1568.5	1575.6	1577.1
5°	1567.1	1569.9	1562.8	1571.4	1572.8
7.5°	1558.5	1558.5	1554.3	1562.8	1564.2
10°	1542.9	1544.3	1542.9	1552.9	1554.3
12.5°	1523.0	1525.8	1527.2	1537.2	1538.6
15°	1498.8	1503.0	1505.9	1518.7	1521.5
17.5°	1471.7	1476.0	1483.1	1497.3	1500.2
20°	1439.0	1444.7	1453.2	1471.7	1476.0
22.5°	1403.4	1409.1	1423.3	1440.4	1447.5
25°	1362.1	1373.5	1387.7	1410.5	1414.8
27.5°	1320.9	1330.8	1349.3	1373.5	1379.2
30°	1272.5	1288.1	1310.9	1335.1	1340.8
32.5°	1225.5	1241.1	1268.2	1293.8	1300.9
35°	1177.1	1191.3	1219.8	1249.7	1258.2
37.5°	1121.6	1140.1	1171.4	1201.3	1209.8
40°	1063.2	1086.0	1121.6	1152.9	1162.9
42.5°	1007.7	1031.9	1067.5	1101.7	1113.0
45°	949.4	972.1	1014.8	1053.3	1061.8
47.5°	889.6	915.2	960.7	999.2	1013.4
50°	829.8	856.8	905.2	945.1	953.6
52.5°	770.0	798.5	849.7	892.4	896.7
55°	707.4	738.7	792.8	834.1	842.6
57.5°	650.5	677.5	735.9	778.6	788.5
60°	587.8	617.7	680.4	720.2	733.0
62.5°	528.1	559.4	624.8	664.7	676.1
65°	465.4	501.0	565.1	612.0	623.4
67.5°	411.3	445.5	513.8	559.4	570.8
70°	348.7	387.1	459.7	506.7	518.1
72.5°	294.6	334.5	407.1	452.6	469.7
75°	236.3	281.8	354.4	402.8	414.2
77.5°	179.3	232.0	306.0	343.0	343.0
80°	128.1	183.6	251.9	269.0	271.9
82.5°	84.0	138.1	186.5	185.0	185.0
85°	48.4	89.7	111.0	108.2	108.2
87.5°	18.5	37.0	39.9	39.9	38.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)