

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: P311439

Luminaire Tested: **24FCZ2-45HE-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: P311439
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-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC 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

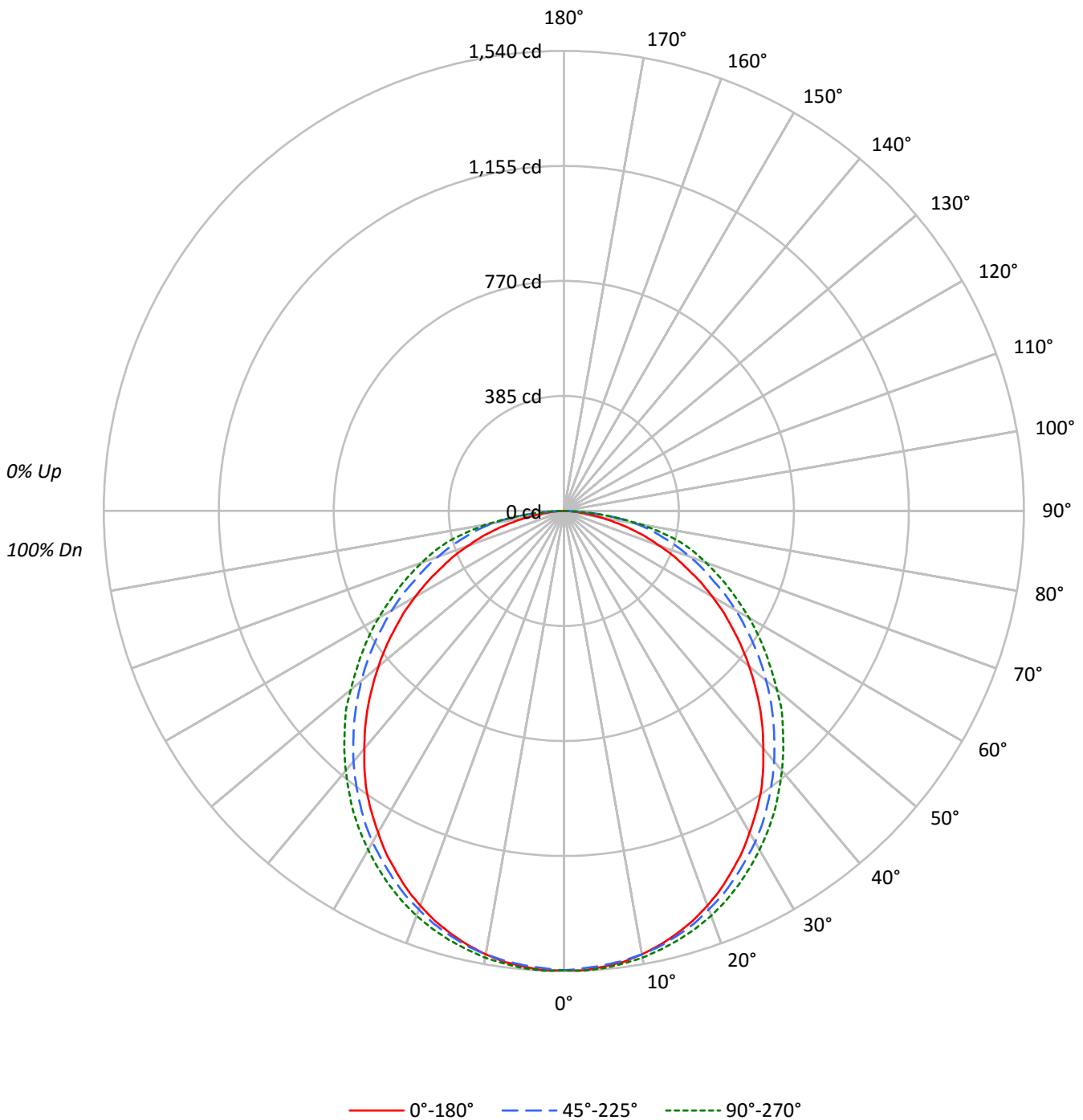
Lumens per Lamp: N/A
Luminaire Lumens: 4377.0 lumens
Efficiency: N/A
Efficacy: 127.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 34.4
Input Voltage (V): NR
Input Current (A_{in}): 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°	2069	2069	2069
5°	2067	2062	2075
10°	2059	2059	2074
15°	2039	2049	2070
20°	2013	2032	2064
25°	1975	2012	2052
30°	1931	1989	2035
35°	1889	1957	2019
40°	1824	1924	1995
45°	1764	1886	1974
50°	1697	1851	1950
55°	1621	1817	1931
60°	1545	1788	1927
65°	1447	1757	1939
70°	1340	1767	1991
75°	1200	1800	2103
80°	969	1907	2057
85°	730	1673	1632



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.6	3.3
10°-20°	416.0	9.5
20°-30°	625.3	14.3
30°-40°	744.8	17.0
40°-50°	762.3	17.4
50°-60°	686.3	15.7
60°-70°	538.9	12.3
70°-80°	349.8	8.0
80°-90°	108.2	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°	1186.8	27.1
0°-40°	1931.6	44.1
0°-60°	3380.1	77.2
0°-90°	4377.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4377.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1538	1538	1538	1538	1538	
5°	1531	1534	1526	1535	1536	145
15°	1464	1468	1471	1483	1486	413
25°	1330	1342	1356	1378	1382	613
35°	1150	1164	1192	1221	1229	717
45°	927	950	991	1029	1037	715
55°	691	722	774	815	823	619
65°	455	489	552	598	609	453
75°	231	275	346	394	405	244
85°	47	88	108	106	106	57
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1537.7	1537.7	1537.7	1537.7	1537.7
2.5°	1539.1	1539.1	1532.1	1539.1	1540.4
5°	1530.7	1533.5	1526.5	1534.9	1536.3
7.5°	1522.4	1522.4	1518.2	1526.5	1527.9
10°	1507.1	1508.5	1507.1	1516.8	1518.2
12.5°	1487.6	1490.4	1491.8	1501.5	1502.9
15°	1464.0	1468.2	1470.9	1483.4	1486.2
17.5°	1437.6	1441.7	1448.7	1462.6	1465.4
20°	1405.6	1411.2	1419.5	1437.6	1441.7
22.5°	1370.8	1376.4	1390.3	1407.0	1413.9
25°	1330.5	1341.6	1355.5	1377.8	1382.0
27.5°	1290.2	1299.9	1318.0	1341.6	1347.2
30°	1242.9	1258.2	1280.5	1304.1	1309.7
32.5°	1197.0	1212.3	1238.8	1263.8	1270.7
35°	1149.8	1163.7	1191.5	1220.7	1229.0
37.5°	1095.6	1113.6	1144.2	1173.4	1181.8
40°	1038.6	1060.8	1095.6	1126.1	1135.9
42.5°	984.3	1008.0	1042.7	1076.1	1087.2
45°	927.3	949.6	991.3	1028.8	1037.2
47.5°	868.9	894.0	938.5	976.0	989.9
50°	810.5	837.0	884.2	923.2	931.5
52.5°	752.2	780.0	830.0	871.7	875.9
55°	691.0	721.6	774.4	814.7	823.1
57.5°	635.4	661.8	718.8	760.5	770.2
60°	574.2	603.4	664.6	703.5	716.0
62.5°	515.8	546.4	610.3	649.3	660.4
65°	454.6	489.4	551.9	597.8	609.0
67.5°	401.8	435.2	501.9	546.4	557.5
70°	340.6	378.2	449.1	494.9	506.1
72.5°	287.8	326.7	397.6	442.1	458.8
75°	230.8	275.3	346.2	393.5	404.6
77.5°	175.2	226.6	298.9	335.1	335.1
80°	125.1	179.3	246.1	262.8	265.5
82.5°	82.0	134.9	182.1	180.7	180.7
85°	47.3	87.6	108.4	105.7	105.7
87.5°	18.1	36.1	38.9	38.9	37.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)