

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: P311448

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CA125-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: P311448  
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-CA125-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" 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**

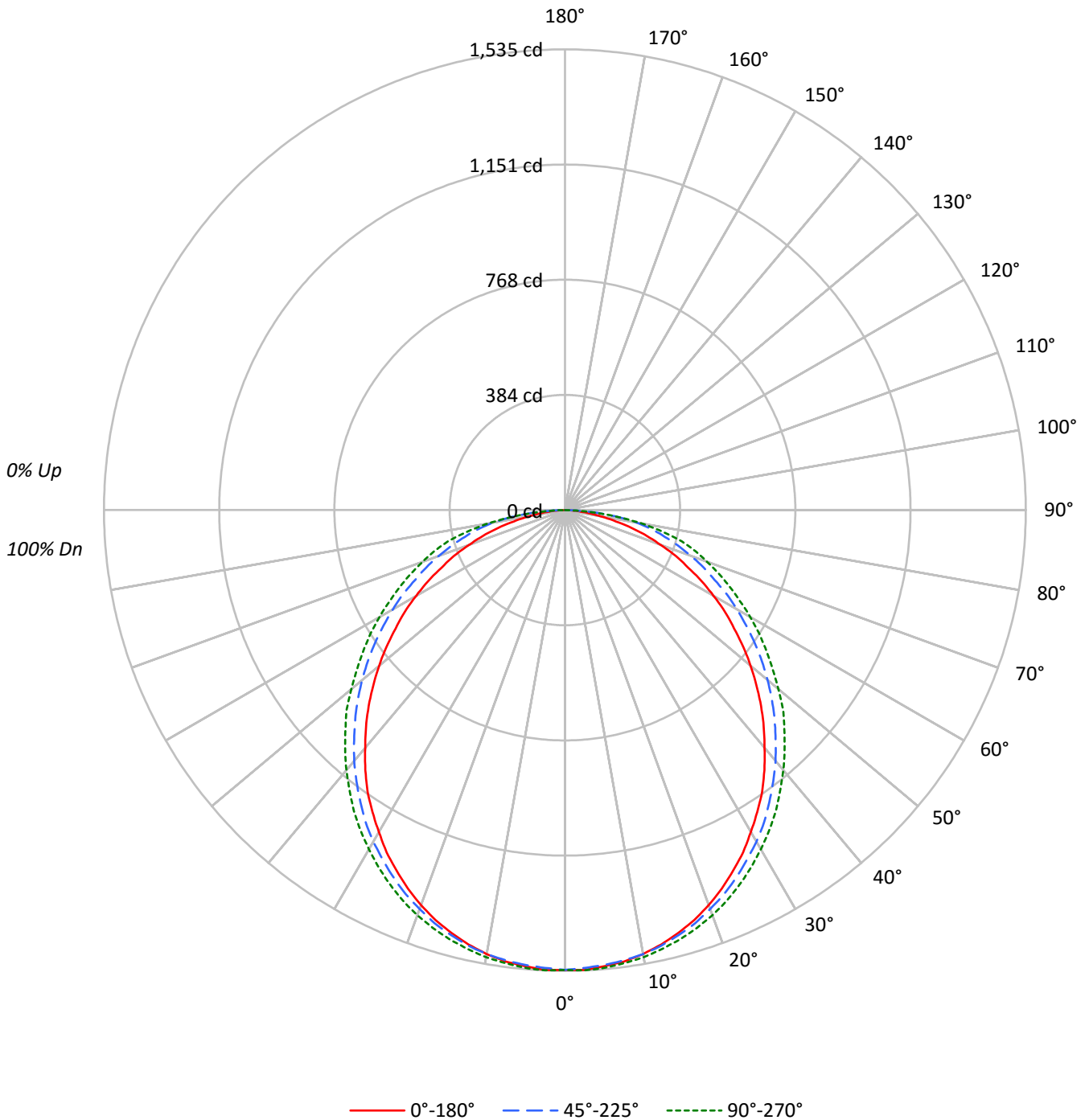
Lumens per Lamp: N/A  
Luminaire Lumens: 4361.0 lumens  
Efficiency: N/A  
Efficacy: 126.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.4  
Input Voltage (V): NR  
Input Current (A<sub>in</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



TEST NUMBER: P311448

CATALOG NUMBER: 24FCZ2-45HE-UNV-L82765-S-CA125-W2A-U-4500K

### Luminous Intensity Polar Plot





TEST NUMBER: P311448

CATALOG NUMBER: 24FCZ2-45HE-UNV-L82765-S-CA125-W2A-U-4500K

**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°	2061	2061	2061
5°	2060	2054	2067
10°	2052	2052	2067
15°	2032	2042	2063
20°	2005	2025	2057
25°	1968	2005	2044
30°	1924	1982	2027
35°	1882	1950	2011
40°	1818	1917	1988
45°	1758	1879	1966
50°	1690	1844	1943
55°	1615	1810	1924
60°	1540	1782	1920
65°	1442	1751	1932
70°	1335	1760	1983
75°	1195	1793	2096
80°	966	1900	2050
85°	727	1667	1626



TEST NUMBER: P311448

CATALOG NUMBER: 24FCZ2-45HE-UNV-L82765-S-CA125-W2A-U-4500K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.0	3.3
10°-20°	414.4	9.5
20°-30°	623.0	14.3
30°-40°	742.1	17.0
40°-50°	759.5	17.4
50°-60°	683.8	15.7
60°-70°	537.0	12.3
70°-80°	348.5	8.0
80°-90°	107.8	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°	1182.5	27.1
0°-40°	1924.5	44.1
0°-60°	3367.8	77.2
0°-90°	4361.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4361.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1532	1532	1532	1532	1532	
5°	1525	1528	1521	1529	1531	145
15°	1459	1463	1466	1478	1481	411
25°	1326	1337	1351	1373	1377	611
35°	1146	1159	1187	1216	1224	715
45°	924	946	988	1025	1033	712
55°	688	719	772	812	820	617
65°	453	488	550	596	607	451
75°	230	274	345	392	403	243
85°	47	87	108	105	105	57
90°	0	0	0	0	0	



TEST NUMBER: P311448

CATALOG NUMBER: 24FCZ2-45HE-UNV-L82765-S-CA125-W2A-U-4500K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1532.0	1532.0	1532.0	1532.0	1532.0
2.5°	1533.4	1533.4	1526.5	1533.4	1534.8
5°	1525.1	1527.9	1521.0	1529.3	1530.7
7.5°	1516.8	1516.8	1512.7	1521.0	1522.4
10°	1501.6	1503.0	1501.6	1511.3	1512.7
12.5°	1482.2	1485.0	1486.3	1496.0	1497.4
15°	1458.6	1462.8	1465.6	1478.0	1480.8
17.5°	1432.3	1436.5	1443.4	1457.2	1460.0
20°	1400.5	1406.0	1414.3	1432.3	1436.5
22.5°	1365.8	1371.4	1385.2	1401.8	1408.8
25°	1325.7	1336.7	1350.6	1372.7	1376.9
27.5°	1285.5	1295.2	1313.2	1336.7	1342.3
30°	1238.4	1253.6	1275.8	1299.3	1304.9
32.5°	1192.7	1207.9	1234.2	1259.2	1266.1
35°	1145.6	1159.4	1187.1	1216.2	1224.5
37.5°	1091.5	1109.6	1140.0	1169.1	1177.4
40°	1034.8	1056.9	1091.5	1122.0	1131.7
42.5°	980.7	1004.3	1038.9	1072.2	1083.2
45°	923.9	946.1	987.7	1025.1	1033.4
47.5°	865.8	890.7	935.0	972.4	986.3
50°	807.6	833.9	881.0	919.8	928.1
52.5°	749.4	777.1	827.0	868.5	872.7
55°	688.5	718.9	771.6	811.7	820.0
57.5°	633.0	659.4	716.2	757.7	767.4
60°	572.1	601.2	662.1	700.9	713.4
62.5°	513.9	544.4	608.1	646.9	658.0
65°	453.0	487.6	549.9	595.6	606.7
67.5°	400.3	433.6	500.1	544.4	555.5
70°	339.4	376.8	447.4	493.1	504.2
72.5°	286.7	325.5	396.2	440.5	457.1
75°	229.9	274.3	344.9	392.0	403.1
77.5°	174.5	225.8	297.8	333.8	333.8
80°	124.7	178.7	245.2	261.8	264.6
82.5°	81.7	134.4	181.5	180.1	180.1
85°	47.1	87.3	108.0	105.3	105.3
87.5°	18.0	36.0	38.8	38.8	37.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)