

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: P311500

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CP125-W2A-U-3500K**

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: P311500  
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-CP125-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" POLYCARB SHEET  
Light Source: (168) 3500K 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: 4154.0 lumens  
Efficiency: N/A  
Efficacy: 109.9 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

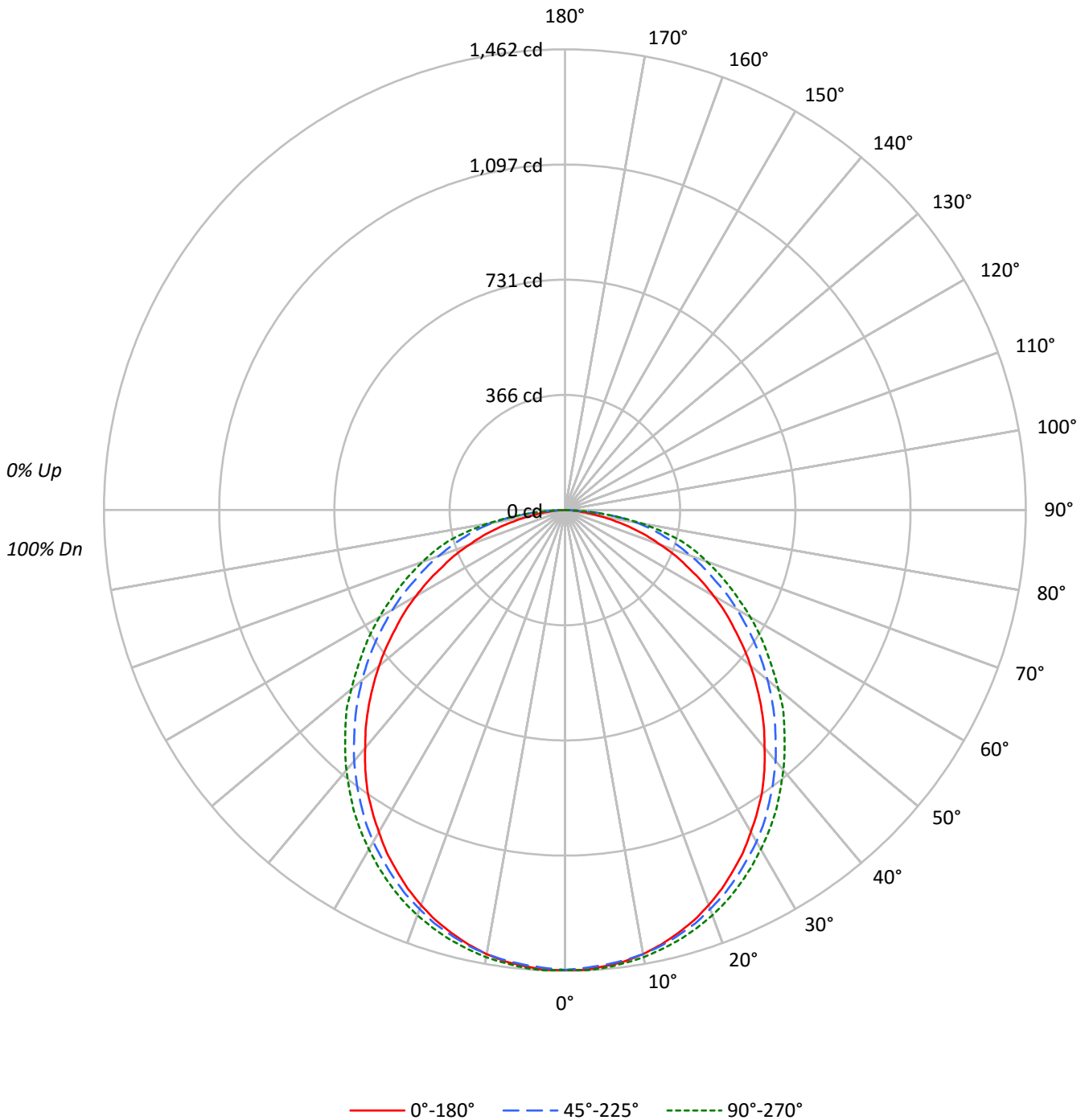
Input Watts (W): 37.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1963	1963	1963
5°	1962	1957	1969
10°	1954	1954	1969
15°	1935	1945	1965
20°	1910	1929	1959
25°	1875	1910	1947
30°	1833	1888	1931
35°	1792	1857	1916
40°	1731	1826	1893
45°	1675	1790	1873
50°	1610	1757	1850
55°	1538	1724	1832
60°	1466	1697	1829
65°	1374	1668	1840
70°	1272	1677	1889
75°	1138	1708	1996
80°	921	1809	1953
85°	693	1589	1548



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.2	3.3
10°-20°	394.8	9.5
20°-30°	593.4	14.3
30°-40°	706.8	17.0
40°-50°	723.4	17.4
50°-60°	651.3	15.7
60°-70°	511.5	12.3
70°-80°	332.0	8.0
80°-90°	102.7	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°	1126.3	27.1
0°-40°	1833.2	44.1
0°-60°	3207.9	77.2
0°-90°	4154.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4154.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1459	1459	1459	1459	1459	
5°	1453	1455	1449	1457	1458	138
15°	1389	1393	1396	1408	1410	392
25°	1263	1273	1286	1308	1312	582
35°	1091	1104	1131	1158	1166	681
45°	880	901	941	976	984	679
55°	656	685	735	773	781	588
65°	432	464	524	567	578	430
75°	219	261	328	373	384	232
85°	45	83	103	100	100	54
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1459.3	1459.3	1459.3	1459.3	1459.3
2.5°	1460.6	1460.6	1454.0	1460.6	1462.0
5°	1452.7	1455.4	1448.8	1456.7	1458.0
7.5°	1444.8	1444.8	1440.9	1448.8	1450.1
10°	1430.3	1431.6	1430.3	1439.5	1440.9
12.5°	1411.8	1414.5	1415.8	1425.0	1426.3
15°	1389.4	1393.4	1396.0	1407.9	1410.5
17.5°	1364.3	1368.3	1374.9	1388.1	1390.7
20°	1334.0	1339.3	1347.2	1364.3	1368.3
22.5°	1301.0	1306.3	1319.5	1335.3	1341.9
25°	1262.7	1273.3	1286.5	1307.6	1311.5
27.5°	1224.5	1233.7	1250.9	1273.3	1278.6
30°	1179.6	1194.1	1215.2	1237.7	1242.9
32.5°	1136.1	1150.6	1175.6	1199.4	1206.0
35°	1091.2	1104.4	1130.8	1158.5	1166.4
37.5°	1039.7	1056.9	1085.9	1113.6	1121.5
40°	985.6	1006.8	1039.7	1068.8	1078.0
42.5°	934.2	956.6	989.6	1021.3	1031.8
45°	880.1	901.2	940.8	976.4	984.3
47.5°	824.7	848.4	890.6	926.3	939.5
50°	769.2	794.3	839.2	876.1	884.0
52.5°	713.8	740.2	787.7	827.3	831.3
55°	655.8	684.8	734.9	773.2	781.1
57.5°	603.0	628.1	682.2	721.7	731.0
60°	544.9	572.6	630.7	667.6	679.5
62.5°	489.5	518.5	579.2	616.2	626.7
65°	431.5	464.5	523.8	567.4	577.9
67.5°	381.3	413.0	476.3	518.5	529.1
70°	323.3	358.9	426.2	469.7	480.3
72.5°	273.1	310.1	377.4	419.6	435.4
75°	219.0	261.3	328.5	373.4	384.0
77.5°	166.3	215.1	283.7	318.0	318.0
80°	118.8	170.2	233.5	249.4	252.0
82.5°	77.8	128.0	172.8	171.5	171.5
85°	44.9	83.1	102.9	100.3	100.3
87.5°	17.2	34.3	36.9	36.9	35.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)