

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: P314358

Luminaire Tested: **24FCZ2-45-UNV-L83050-S-CP187-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: P314358
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-L83050-S-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB 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: 4318.0 lumens
Efficiency: N/A
Efficacy: 109.6 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

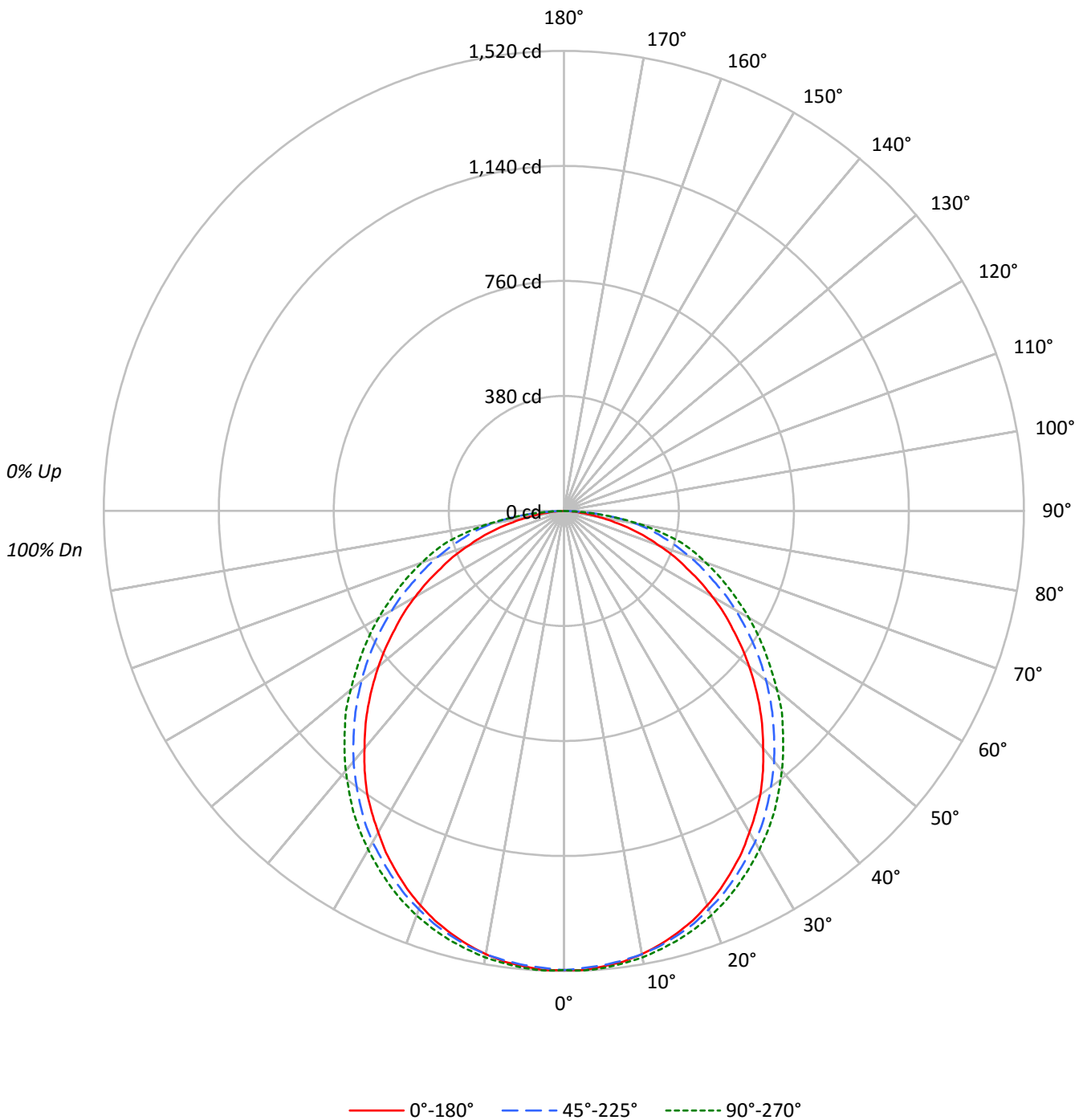
Input Watts (W): 39.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2041	2041	2041
5°	2040	2034	2047
10°	2031	2031	2046
15°	2012	2021	2042
20°	1985	2005	2037
25°	1949	1985	2024
30°	1905	1963	2007
35°	1863	1931	1992
40°	1800	1898	1968
45°	1741	1861	1947
50°	1674	1826	1923
55°	1599	1792	1905
60°	1524	1764	1901
65°	1428	1734	1912
70°	1322	1743	1964
75°	1184	1775	2075
80°	956	1881	2030
85°	719	1652	1609



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.6	3.3
10°-20°	410.3	9.5
20°-30°	616.8	14.3
30°-40°	734.8	17.0
40°-50°	752.0	17.4
50°-60°	677.0	15.7
60°-70°	531.7	12.3
70°-80°	345.1	8.0
80°-90°	106.7	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°	1170.8	27.1
0°-40°	1905.6	44.1
0°-60°	3334.6	77.2
0°-90°	4318.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4318.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1517	1517	1517	1517	1517	
5°	1510	1513	1506	1514	1516	143
15°	1444	1448	1451	1464	1466	407
25°	1313	1324	1337	1359	1363	605
35°	1134	1148	1175	1204	1212	708
45°	915	937	978	1015	1023	705
55°	682	712	764	804	812	611
65°	448	483	544	590	601	446
75°	228	272	342	388	399	241
85°	47	86	107	104	104	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1516.9	1516.9	1516.9	1516.9	1516.9
2.5°	1518.3	1518.3	1511.5	1518.3	1519.7
5°	1510.1	1512.8	1506.0	1514.2	1515.6
7.5°	1501.9	1501.9	1497.7	1506.0	1507.3
10°	1486.8	1488.1	1486.8	1496.4	1497.7
12.5°	1467.6	1470.3	1471.7	1481.3	1482.7
15°	1444.2	1448.4	1451.1	1463.5	1466.2
17.5°	1418.2	1422.3	1429.2	1442.9	1445.6
20°	1386.6	1392.1	1400.4	1418.2	1422.3
22.5°	1352.4	1357.8	1371.6	1388.0	1394.9
25°	1312.6	1323.6	1337.3	1359.2	1363.3
27.5°	1272.8	1282.4	1300.2	1323.6	1329.0
30°	1226.2	1241.3	1263.2	1286.5	1292.0
32.5°	1180.9	1196.0	1222.1	1246.7	1253.6
35°	1134.3	1148.0	1175.4	1204.2	1212.5
37.5°	1080.8	1098.6	1128.8	1157.6	1165.8
40°	1024.6	1046.5	1080.8	1111.0	1120.6
42.5°	971.1	994.4	1028.7	1061.6	1072.6
45°	914.8	936.8	977.9	1015.0	1023.2
47.5°	857.2	881.9	925.8	962.8	976.5
50°	799.6	825.7	872.3	910.7	918.9
52.5°	742.0	769.4	818.8	860.0	864.1
55°	681.7	711.8	764.0	803.7	812.0
57.5°	626.8	652.9	709.1	750.2	759.8
60°	566.5	595.3	655.6	694.0	706.4
62.5°	508.8	539.0	602.1	640.5	651.5
65°	448.5	482.8	544.5	589.8	600.7
67.5°	396.4	429.3	495.1	539.0	550.0
70°	336.0	373.1	443.0	488.3	499.2
72.5°	283.9	322.3	392.3	436.2	452.6
75°	227.7	271.6	341.5	388.2	399.1
77.5°	172.8	223.6	294.9	330.5	330.5
80°	123.4	176.9	242.8	259.2	262.0
82.5°	80.9	133.0	179.7	178.3	178.3
85°	46.6	86.4	107.0	104.2	104.2
87.5°	17.8	35.7	38.4	38.4	37.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)