

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: P314357

Luminaire Tested: **24FCZ2-45-UNV-L83050-S-CP187-W2A-U-4000K**

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: P314357
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-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 4000K 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: 4278.0 lumens
Efficiency: N/A
Efficacy: 111.1 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

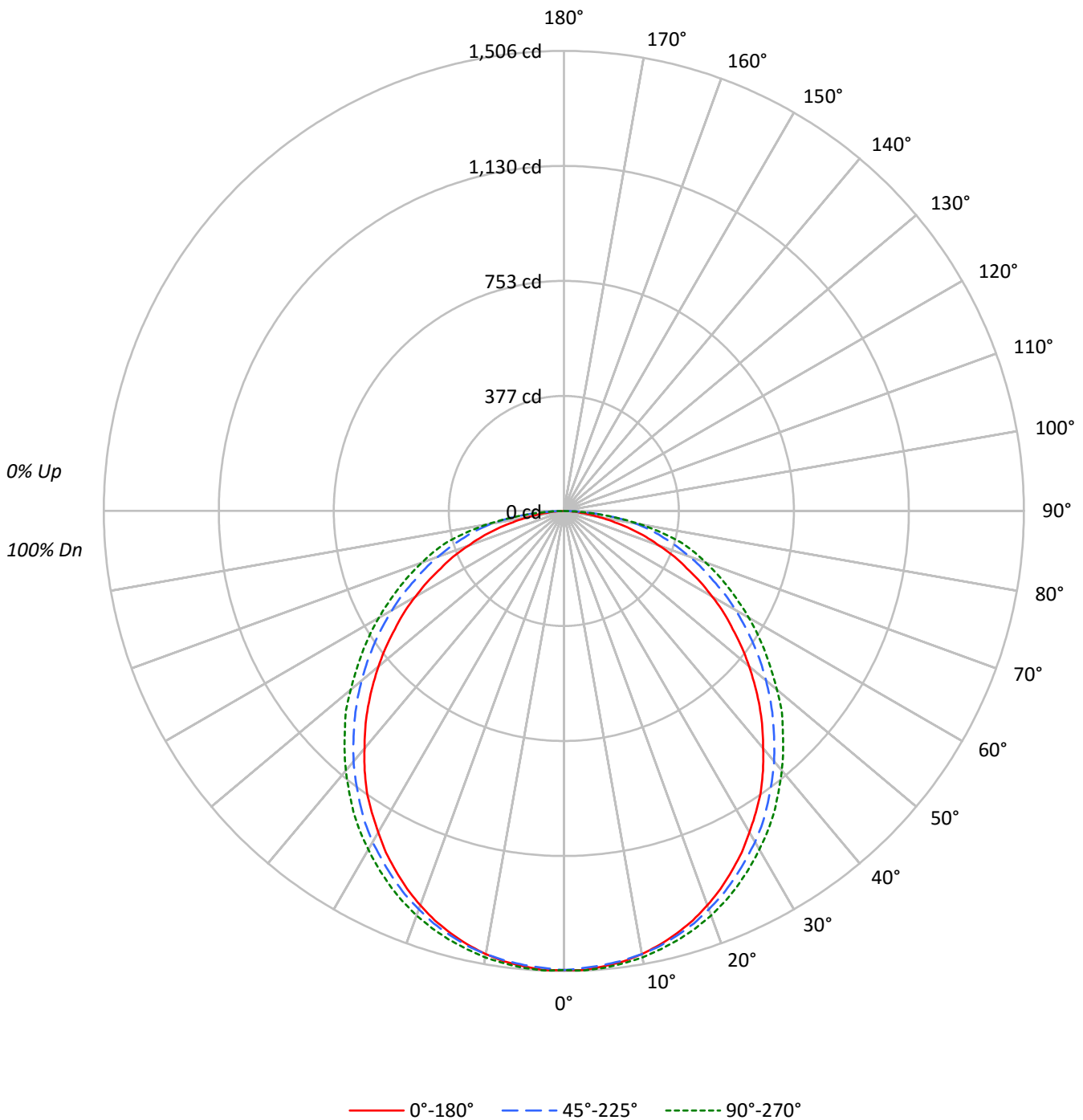
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2022	2022	2022
5°	2021	2015	2028
10°	2012	2012	2027
15°	1993	2003	2023
20°	1967	1987	2018
25°	1931	1967	2005
30°	1887	1944	1989
35°	1846	1913	1973
40°	1783	1881	1950
45°	1725	1844	1929
50°	1658	1809	1906
55°	1584	1776	1887
60°	1510	1748	1883
65°	1415	1718	1895
70°	1310	1727	1946
75°	1173	1759	2056
80°	948	1863	2011
85°	713	1636	1595



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.3	3.3
10°-20°	406.5	9.5
20°-30°	611.1	14.3
30°-40°	727.9	17.0
40°-50°	745.0	17.4
50°-60°	670.7	15.7
60°-70°	526.7	12.3
70°-80°	341.9	8.0
80°-90°	105.7	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°	1160.0	27.1
0°-40°	1887.9	44.1
0°-60°	3303.6	77.2
0°-90°	4278.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4278.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1503	1503	1503	1503	1503	
5°	1496	1499	1492	1500	1502	142
15°	1431	1435	1438	1450	1453	403
25°	1300	1311	1325	1347	1351	599
35°	1124	1137	1164	1193	1201	701
45°	906	928	969	1006	1014	699
55°	675	705	757	796	804	605
65°	444	478	540	584	595	442
75°	226	269	338	385	395	239
85°	46	86	106	103	103	56
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1502.9	1502.9	1502.9	1502.9	1502.9
2.5°	1504.2	1504.2	1497.5	1504.2	1505.6
5°	1496.1	1498.8	1492.0	1500.2	1501.5
7.5°	1487.9	1487.9	1483.9	1492.0	1493.4
10°	1473.0	1474.4	1473.0	1482.5	1483.9
12.5°	1454.0	1456.7	1458.0	1467.6	1468.9
15°	1430.9	1434.9	1437.7	1449.9	1452.6
17.5°	1405.1	1409.1	1415.9	1429.5	1432.2
20°	1373.8	1379.2	1387.4	1405.1	1409.1
22.5°	1339.8	1345.3	1358.9	1375.2	1382.0
25°	1300.4	1311.3	1324.9	1346.6	1350.7
27.5°	1261.0	1270.5	1288.2	1311.3	1316.7
30°	1214.8	1229.8	1251.5	1274.6	1280.0
32.5°	1170.0	1184.9	1210.7	1235.2	1242.0
35°	1123.8	1137.4	1164.5	1193.1	1201.2
37.5°	1070.8	1088.4	1118.3	1146.9	1155.0
40°	1015.1	1036.8	1070.8	1100.7	1110.2
42.5°	962.1	985.2	1019.1	1051.8	1062.6
45°	906.4	928.1	968.9	1005.5	1013.7
47.5°	849.3	873.7	917.2	953.9	967.5
50°	792.2	818.0	864.2	902.3	910.4
52.5°	735.1	762.3	811.2	852.0	856.1
55°	675.3	705.2	756.9	796.3	804.4
57.5°	621.0	646.8	702.5	743.3	752.8
60°	561.2	589.7	649.5	687.6	699.8
62.5°	504.1	534.0	596.5	634.6	645.5
65°	444.3	478.3	539.5	584.3	595.2
67.5°	392.7	425.3	490.5	534.0	544.9
70°	332.9	369.6	438.9	483.8	494.6
72.5°	281.3	319.3	388.6	432.1	448.4
75°	225.6	269.1	338.4	384.6	395.4
77.5°	171.2	221.5	292.2	327.5	327.5
80°	122.3	175.3	240.5	256.8	259.5
82.5°	80.2	131.8	178.0	176.7	176.7
85°	46.2	85.6	106.0	103.3	103.3
87.5°	17.7	35.3	38.0	38.0	36.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)