

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: P311508

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CP187-W2A-U-3000K**

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: P311508
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-CP187-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 3000K 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: 3846.0 lumens
Efficiency: N/A
Efficacy: 103.1 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

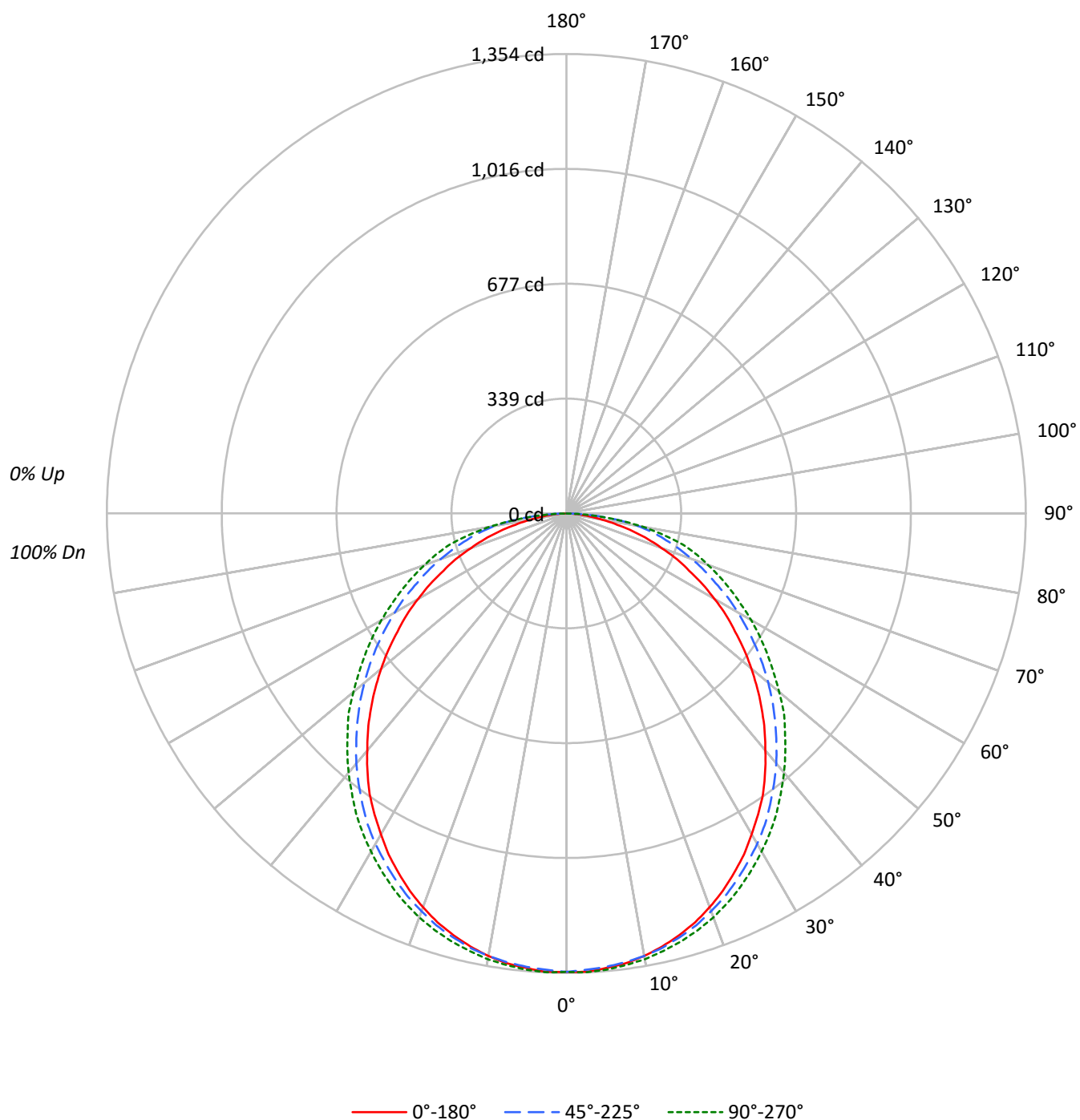
Input Watts (W): 37.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
RW	70	50	30	10	70	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		100
1	108	103	99	95	106	101	97	93	97	93	90		93	90	88		83
2	98	90	83	77	96	88	81	76	84	79	74		81	76	72		69
3	89	79	70	64	87	77	69	63	74	67	62		71	66	61		58
4	82	70	61	54	80	68	60	54	66	59	53		63	57	52		49
5	75	62	53	46	73	61	53	46	59	51	46		57	50	45		42
6	70	56	47	40	68	55	47	40	53	46	40		52	45	40		37
7	64	51	42	36	63	50	42	36	48	41	35		47	40	35		33
8	60	46	38	32	58	46	37	32	44	37	32		43	36	31		29
9	56	43	34	29	55	42	34	29	41	34	28		40	33	28		26
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1818	1818	1818
5°	1817	1812	1823
10°	1809	1809	1823
15°	1792	1800	1819
20°	1768	1786	1814
25°	1736	1768	1803
30°	1697	1748	1788
35°	1659	1720	1774
40°	1603	1691	1753
45°	1550	1657	1734
50°	1491	1626	1713
55°	1424	1596	1696
60°	1358	1571	1693
65°	1272	1544	1704
70°	1177	1552	1749
75°	1054	1581	1848
80°	852	1675	1808
85°	641	1471	1433



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.9	3.3
10°-20°	365.5	9.5
20°-30°	549.4	14.3
30°-40°	654.4	17.0
40°-50°	669.8	17.4
50°-60°	603.0	15.7
60°-70°	473.6	12.3
70°-80°	307.3	8.0
80°-90°	95.1	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°	1042.8	27.1
0°-40°	1697.3	44.1
0°-60°	2970.0	77.2
0°-90°	3846.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3846.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1351	1351	1351	1351	1351	
5°	1345	1348	1341	1349	1350	128
15°	1286	1290	1292	1304	1306	363
25°	1169	1179	1191	1211	1214	539
35°	1010	1022	1047	1073	1080	630
45°	815	834	871	904	911	628
55°	607	634	680	716	723	544
65°	400	430	485	525	535	398
75°	203	242	304	346	356	215
85°	42	77	95	93	93	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1351.1	1351.1	1351.1	1351.1	1351.1
2.5°	1352.3	1352.3	1346.2	1352.3	1353.6
5°	1345.0	1347.5	1341.4	1348.7	1349.9
7.5°	1337.7	1337.7	1334.0	1341.4	1342.6
10°	1324.2	1325.5	1324.2	1332.8	1334.0
12.5°	1307.1	1309.6	1310.8	1319.4	1320.6
15°	1286.4	1290.0	1292.5	1303.5	1305.9
17.5°	1263.2	1266.8	1272.9	1285.2	1287.6
20°	1235.1	1240.0	1247.3	1263.2	1266.8
22.5°	1204.5	1209.4	1221.6	1236.3	1242.4
25°	1169.1	1178.9	1191.1	1210.6	1214.3
27.5°	1133.7	1142.2	1158.1	1178.9	1183.8
30°	1092.1	1105.6	1125.1	1145.9	1150.8
32.5°	1051.8	1065.3	1088.5	1110.5	1116.6
35°	1010.3	1022.5	1046.9	1072.6	1079.9
37.5°	962.6	978.5	1005.4	1031.1	1038.4
40°	912.6	932.1	962.6	989.5	998.1
42.5°	864.9	885.7	916.2	945.5	955.3
45°	814.8	834.4	871.0	904.0	911.3
47.5°	763.5	785.5	824.6	857.6	869.8
50°	712.2	735.4	777.0	811.2	818.5
52.5°	660.9	685.3	729.3	766.0	769.6
55°	607.2	634.0	680.4	715.9	723.2
57.5°	558.3	581.5	631.6	668.2	676.8
60°	504.5	530.2	583.9	618.1	629.1
62.5°	453.2	480.1	536.3	570.5	580.3
65°	399.5	430.0	485.0	525.3	535.1
67.5°	353.1	382.4	441.0	480.1	489.9
70°	299.3	332.3	394.6	434.9	444.7
72.5°	252.9	287.1	349.4	388.5	403.1
75°	202.8	241.9	304.2	345.7	355.5
77.5°	153.9	199.1	262.7	294.4	294.4
80°	109.9	157.6	216.2	230.9	233.3
82.5°	72.1	118.5	160.0	158.8	158.8
85°	41.5	77.0	95.3	92.8	92.8
87.5°	15.9	31.8	34.2	34.2	33.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)