

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: P311509

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CP187-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: P311509
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-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" 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: 3979.0 lumens
Efficiency: N/A
Efficacy: 105.3 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

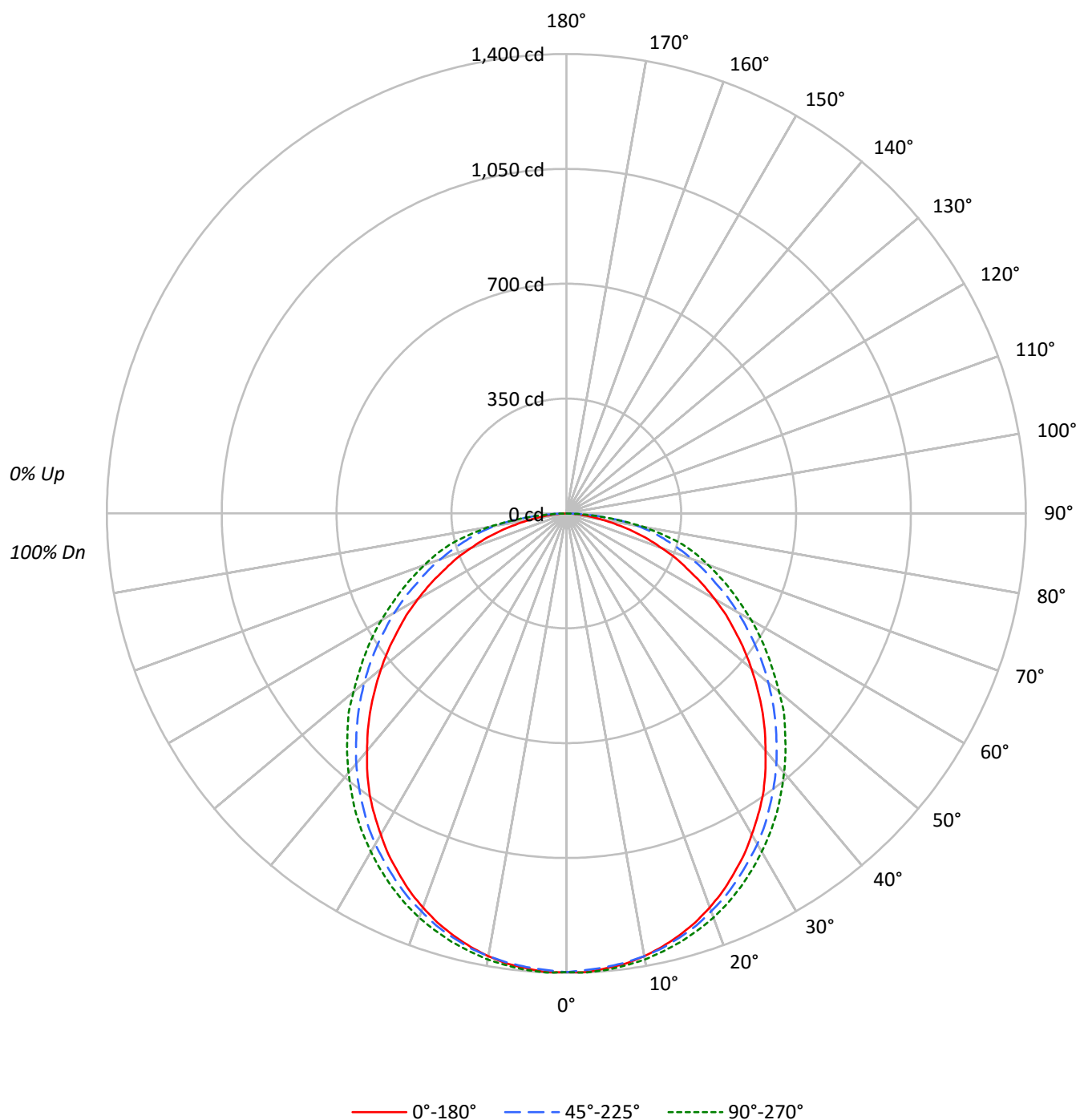
Input Watts (W): 37.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1881	1881	1881
5°	1879	1874	1886
10°	1872	1872	1886
15°	1854	1863	1882
20°	1830	1848	1877
25°	1796	1829	1865
30°	1755	1808	1850
35°	1717	1779	1835
40°	1658	1749	1814
45°	1604	1715	1794
50°	1542	1683	1773
55°	1473	1651	1755
60°	1405	1626	1752
65°	1316	1598	1762
70°	1218	1606	1810
75°	1091	1636	1912
80°	881	1733	1870
85°	664	1522	1484



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.3	3.3
10°-20°	378.1	9.5
20°-30°	568.4	14.3
30°-40°	677.1	17.0
40°-50°	692.9	17.4
50°-60°	623.9	15.7
60°-70°	489.9	12.3
70°-80°	318.0	8.0
80°-90°	98.4	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°	1078.9	27.1
0°-40°	1755.9	44.1
0°-60°	3072.7	77.2
0°-90°	3979.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3979.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1398	1398	1398	1398	1398	
5°	1392	1394	1388	1395	1397	132
15°	1331	1335	1337	1349	1351	375
25°	1210	1220	1232	1252	1256	557
35°	1045	1058	1083	1110	1117	652
45°	843	863	901	935	943	650
55°	628	656	704	741	748	563
65°	413	445	502	544	554	411
75°	210	250	315	358	368	222
85°	43	80	99	96	96	52
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1397.8	1397.8	1397.8	1397.8	1397.8
2.5°	1399.1	1399.1	1392.8	1399.1	1400.4
5°	1391.5	1394.1	1387.7	1395.3	1396.6
7.5°	1383.9	1383.9	1380.2	1387.7	1389.0
10°	1370.0	1371.3	1370.0	1378.9	1380.2
12.5°	1352.3	1354.9	1356.1	1365.0	1366.3
15°	1330.9	1334.7	1337.2	1348.6	1351.1
17.5°	1306.8	1310.6	1317.0	1329.6	1332.1
20°	1277.8	1282.8	1290.4	1306.8	1310.6
22.5°	1246.2	1251.2	1263.9	1279.0	1285.4
25°	1209.5	1219.6	1232.3	1252.5	1256.3
27.5°	1172.9	1181.7	1198.2	1219.6	1224.7
30°	1129.9	1143.8	1164.0	1185.5	1190.6
32.5°	1088.2	1102.1	1126.1	1148.9	1155.2
35°	1045.2	1057.9	1083.1	1109.7	1117.3
37.5°	995.9	1012.4	1040.2	1066.7	1074.3
40°	944.1	964.3	995.9	1023.7	1032.6
42.5°	894.8	916.3	947.9	978.2	988.4
45°	843.0	863.2	901.1	935.3	942.9
47.5°	789.9	812.7	853.1	887.2	899.9
50°	736.8	760.9	803.8	839.2	846.8
52.5°	683.8	709.0	754.5	792.5	796.2
55°	628.1	656.0	704.0	740.6	748.2
57.5°	577.6	601.6	653.4	691.3	700.2
60°	522.0	548.5	604.1	639.5	650.9
62.5°	468.9	496.7	554.8	590.2	600.3
65°	413.3	444.9	501.8	543.5	553.6
67.5°	365.3	395.6	456.3	496.7	506.8
70°	309.7	343.8	408.2	449.9	460.1
72.5°	261.6	297.0	361.5	401.9	417.1
75°	209.8	250.2	314.7	357.7	367.8
77.5°	159.2	206.0	271.7	304.6	304.6
80°	113.7	163.0	223.7	238.9	241.4
82.5°	74.6	122.6	165.6	164.3	164.3
85°	43.0	79.6	98.6	96.1	96.1
87.5°	16.4	32.9	35.4	35.4	34.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)