

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: P311510

Luminaire Tested: **24FCZ2-45-UNV-L82765-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: P311510
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-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: 4067.0 lumens
Efficiency: N/A
Efficacy: 107.0 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

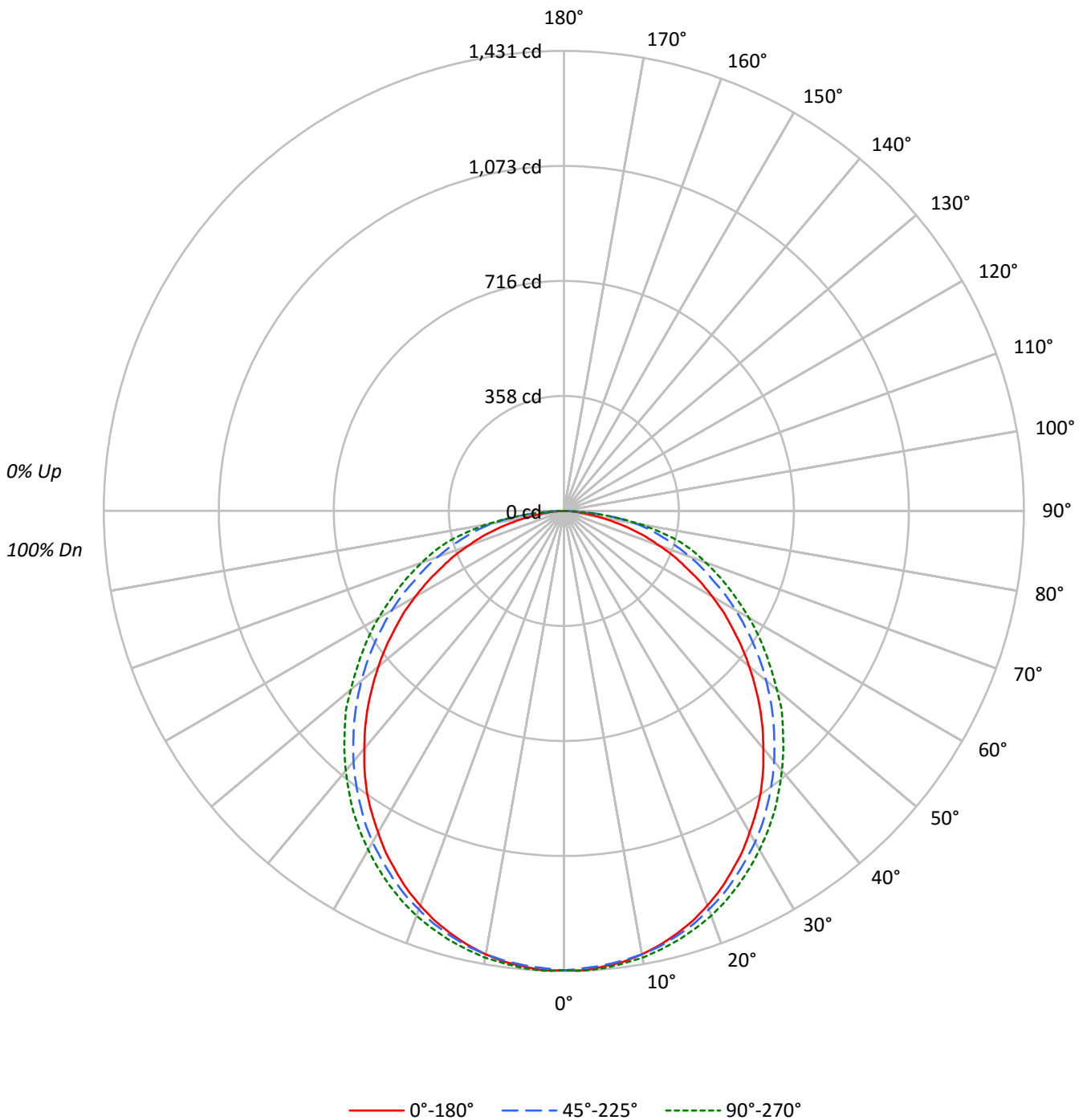
Input Watts (W): 38
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1922	1922	1922
5°	1921	1916	1928
10°	1913	1913	1927
15°	1895	1904	1924
20°	1870	1889	1918
25°	1835	1870	1906
30°	1794	1849	1891
35°	1755	1818	1876
40°	1695	1788	1854
45°	1640	1753	1834
50°	1576	1720	1812
55°	1506	1688	1794
60°	1436	1662	1790
65°	1345	1633	1801
70°	1245	1642	1850
75°	1115	1672	1954
80°	901	1772	1912
85°	678	1556	1516



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.3	3.3
10°-20°	386.5	9.5
20°-30°	581.0	14.3
30°-40°	692.1	17.0
40°-50°	708.3	17.4
50°-60°	637.7	15.7
60°-70°	500.8	12.3
70°-80°	325.0	8.0
80°-90°	100.5	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°	1102.7	27.1
0°-40°	1794.8	44.1
0°-60°	3140.7	77.2
0°-90°	4067.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4067.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1429	1429	1429	1429	1429	
5°	1422	1425	1418	1426	1428	135
15°	1360	1364	1367	1378	1381	384
25°	1236	1247	1260	1280	1284	570
35°	1068	1081	1107	1134	1142	666
45°	862	882	921	956	964	664
55°	642	670	720	757	765	576
65°	422	455	513	556	566	421
75°	214	256	322	366	376	227
85°	44	81	101	98	98	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1428.8	1428.8	1428.8	1428.8	1428.8
2.5°	1430.1	1430.1	1423.6	1430.1	1431.3
5°	1422.3	1424.9	1418.4	1426.2	1427.5
7.5°	1414.6	1414.6	1410.7	1418.4	1419.7
10°	1400.3	1401.6	1400.3	1409.4	1410.7
12.5°	1382.3	1384.8	1386.1	1395.2	1396.5
15°	1360.3	1364.2	1366.8	1378.4	1381.0
17.5°	1335.8	1339.6	1346.1	1359.0	1361.6
20°	1306.0	1311.2	1319.0	1335.8	1339.6
22.5°	1273.7	1278.9	1291.8	1307.3	1313.8
25°	1236.3	1246.6	1259.5	1280.2	1284.1
27.5°	1198.8	1207.9	1224.7	1246.6	1251.8
30°	1154.9	1169.1	1189.8	1211.7	1216.9
32.5°	1112.3	1126.5	1151.0	1174.3	1180.7
35°	1068.3	1081.3	1107.1	1134.2	1142.0
37.5°	1018.0	1034.8	1063.2	1090.3	1098.1
40°	965.0	985.7	1018.0	1046.4	1055.4
42.5°	914.6	936.6	968.9	999.9	1010.2
45°	861.7	882.3	921.1	956.0	963.7
47.5°	807.4	830.6	872.0	906.9	919.8
50°	753.1	777.7	821.6	857.8	865.5
52.5°	698.9	724.7	771.2	810.0	813.9
55°	642.0	670.5	719.5	757.0	764.8
57.5°	590.4	614.9	667.9	706.6	715.7
60°	533.5	560.7	617.5	653.7	665.3
62.5°	479.3	507.7	567.1	603.3	613.6
65°	422.4	454.7	512.9	555.5	565.8
67.5°	373.3	404.3	466.4	507.7	518.0
70°	316.5	351.4	417.3	459.9	470.2
72.5°	267.4	303.6	369.5	410.8	426.3
75°	214.4	255.8	321.7	365.6	375.9
77.5°	162.8	210.6	277.7	311.3	311.3
80°	116.3	166.6	228.7	244.2	246.7
82.5°	76.2	125.3	169.2	167.9	167.9
85°	43.9	81.4	100.8	98.2	98.2
87.5°	16.8	33.6	36.2	36.2	34.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)