

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: P311469

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP187-W2A-U-5700K**

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: P311469
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: 24FCZ2-45HE-UNV-L82765-S-CP187-W2A-U-5700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5700K 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: 4203.0 lumens
Efficiency: N/A
Efficacy: 121.1 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

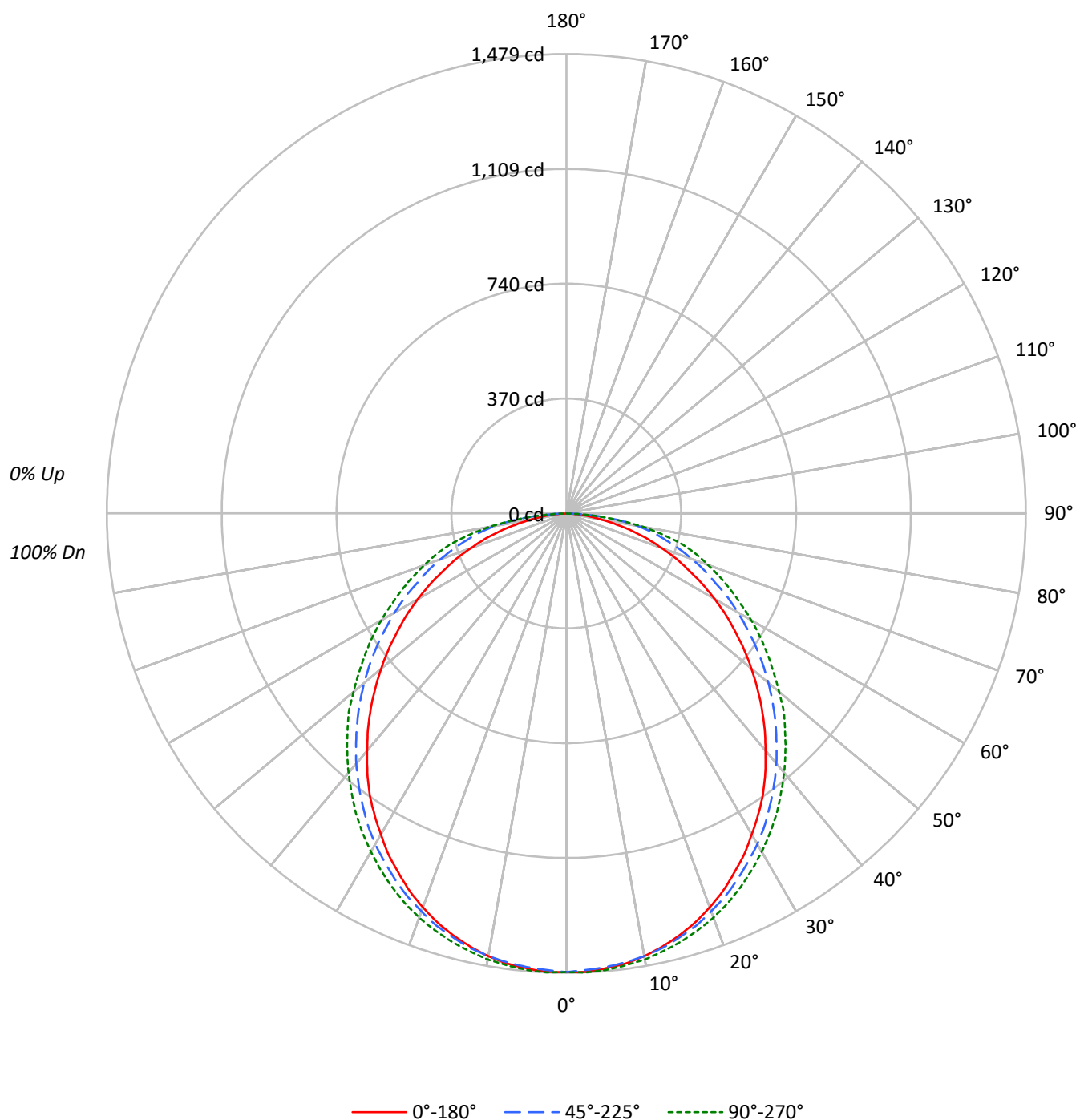
Input Watts (W): 34.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1987	1987	1987
5°	1985	1980	1992
10°	1977	1977	1992
15°	1958	1968	1988
20°	1933	1952	1982
25°	1897	1932	1970
30°	1854	1910	1954
35°	1814	1879	1939
40°	1752	1848	1916
45°	1694	1811	1895
50°	1629	1777	1872
55°	1556	1744	1854
60°	1484	1717	1850
65°	1390	1687	1862
70°	1287	1696	1912
75°	1152	1728	2020
80°	931	1831	1976
85°	701	1607	1567



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	3.3
10°-20°	399.4	9.5
20°-30°	600.4	14.3
30°-40°	715.2	17.0
40°-50°	732.0	17.4
50°-60°	659.0	15.7
60°-70°	517.5	12.3
70°-80°	335.9	8.0
80°-90°	103.9	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°	1139.6	27.1
0°-40°	1854.8	44.1
0°-60°	3245.8	77.2
0°-90°	4203.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4203.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1476	1476	1476	1476	1476	
5°	1470	1472	1466	1474	1475	140
15°	1406	1410	1412	1424	1427	396
25°	1278	1288	1302	1323	1327	589
35°	1104	1117	1144	1172	1180	689
45°	890	912	952	988	996	687
55°	664	693	744	782	790	595
65°	437	470	530	574	585	435
75°	222	264	332	378	388	235
85°	45	84	104	102	102	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1476.5	1476.5	1476.5	1476.5	1476.5
2.5°	1477.9	1477.9	1471.2	1477.9	1479.2
5°	1469.9	1472.5	1465.9	1473.9	1475.2
7.5°	1461.9	1461.9	1457.9	1465.9	1467.2
10°	1447.2	1448.5	1447.2	1456.5	1457.9
12.5°	1428.5	1431.2	1432.5	1441.8	1443.2
15°	1405.8	1409.8	1412.5	1424.5	1427.1
17.5°	1380.4	1384.4	1391.1	1404.4	1407.1
20°	1349.7	1355.1	1363.1	1380.4	1384.4
22.5°	1316.3	1321.7	1335.0	1351.0	1357.7
25°	1277.6	1288.3	1301.7	1323.0	1327.0
27.5°	1238.9	1248.3	1265.6	1288.3	1293.6
30°	1193.5	1208.2	1229.6	1252.3	1257.6
32.5°	1149.5	1164.1	1189.5	1213.5	1220.2
35°	1104.1	1117.4	1144.1	1172.2	1180.2
37.5°	1052.0	1069.4	1098.7	1126.8	1134.8
40°	997.3	1018.6	1052.0	1081.4	1090.7
42.5°	945.2	967.9	1001.3	1033.3	1044.0
45°	890.5	911.8	951.9	987.9	995.9
47.5°	834.4	858.4	901.1	937.2	950.5
50°	778.3	803.7	849.1	886.5	894.5
52.5°	722.3	749.0	797.0	837.1	841.1
55°	663.5	692.9	743.6	782.3	790.3
57.5°	610.1	635.5	690.2	730.3	739.6
60°	551.4	579.4	638.1	675.5	687.5
62.5°	495.3	524.7	586.1	623.5	634.1
65°	436.6	469.9	530.0	574.1	584.7
67.5°	385.8	417.9	481.9	524.7	535.3
70°	327.1	363.1	431.2	475.3	486.0
72.5°	276.4	313.7	381.8	424.5	440.6
75°	221.6	264.3	332.4	377.8	388.5
77.5°	168.2	217.6	287.0	321.7	321.7
80°	120.2	172.2	236.3	252.3	255.0
82.5°	78.8	129.5	174.9	173.6	173.6
85°	45.4	84.1	104.1	101.5	101.5
87.5°	17.4	34.7	37.4	37.4	36.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)