

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: P311435

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-2700K**

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: P311435
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-CA08-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 2700K 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: 3953.0 lumens
Efficiency: N/A
Efficacy: 117.0 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

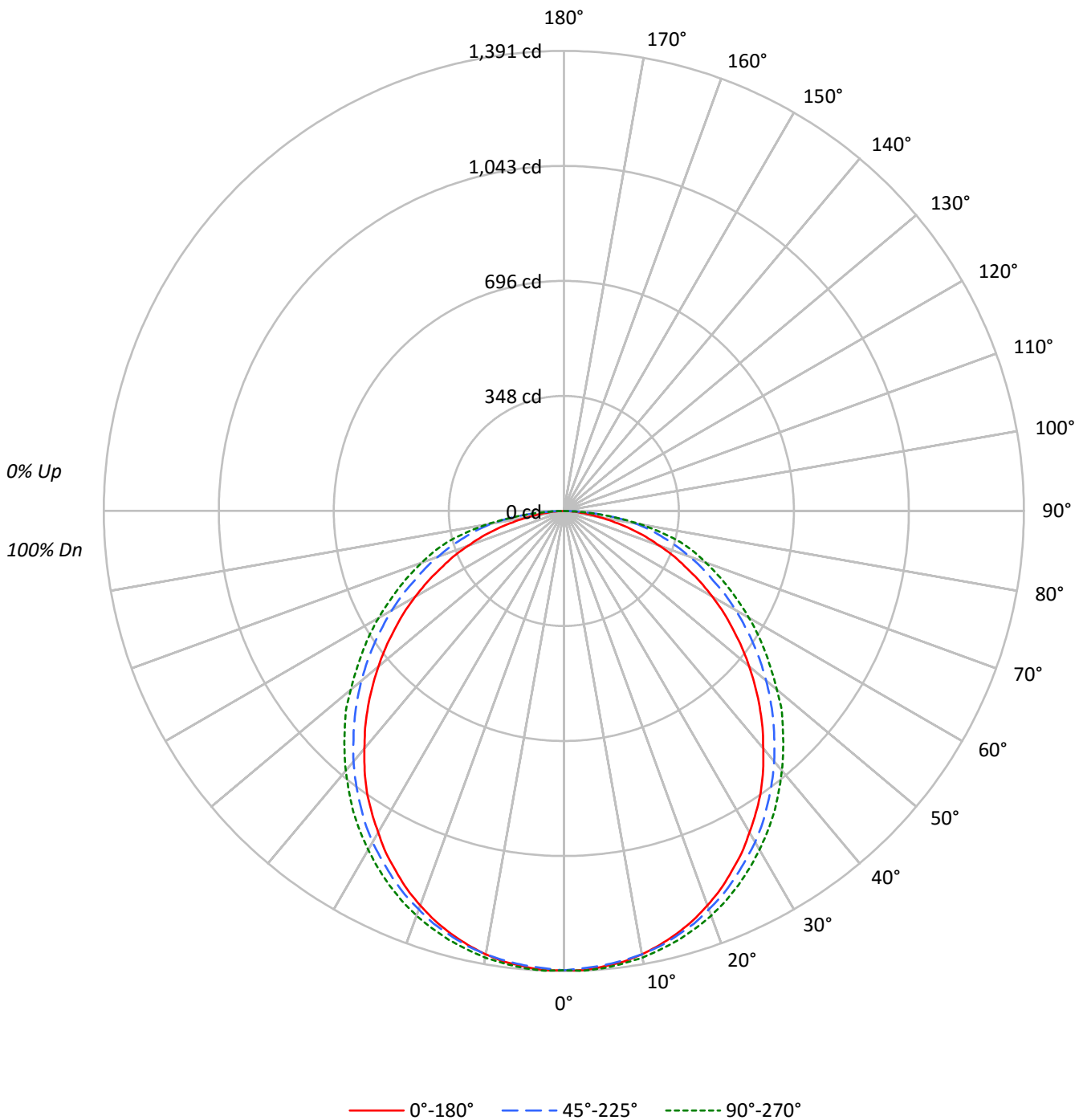
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1868	1868	1868
5°	1867	1862	1874
10°	1860	1860	1873
15°	1842	1850	1870
20°	1818	1836	1864
25°	1784	1817	1853
30°	1744	1797	1838
35°	1706	1768	1823
40°	1647	1738	1802
45°	1594	1704	1782
50°	1532	1672	1761
55°	1464	1641	1744
60°	1396	1615	1740
65°	1307	1587	1751
70°	1210	1596	1798
75°	1083	1625	1900
80°	876	1722	1858
85°	659	1511	1473



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.5	3.3
10°-20°	375.7	9.5
20°-30°	564.7	14.3
30°-40°	672.7	17.0
40°-50°	688.4	17.4
50°-60°	619.8	15.7
60°-70°	486.7	12.3
70°-80°	315.9	8.0
80°-90°	97.7	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°	1071.8	27.1
0°-40°	1744.5	44.1
0°-60°	3052.7	77.2
0°-90°	3953.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3953.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1389	1389	1389	1389	1389	
5°	1382	1385	1379	1386	1388	131
15°	1322	1326	1328	1340	1342	373
25°	1202	1212	1224	1244	1248	554
35°	1038	1051	1076	1102	1110	648
45°	838	858	895	929	937	646
55°	624	652	699	736	743	559
65°	411	442	498	540	550	409
75°	208	249	313	355	365	221
85°	43	79	98	95	95	52
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1388.7	1388.7	1388.7	1388.7	1388.7
2.5°	1390.0	1390.0	1383.7	1390.0	1391.2
5°	1382.4	1384.9	1378.7	1386.2	1387.5
7.5°	1374.9	1374.9	1371.1	1378.7	1379.9
10°	1361.1	1362.3	1361.1	1369.9	1371.1
12.5°	1343.5	1346.0	1347.3	1356.1	1357.3
15°	1322.2	1325.9	1328.4	1339.7	1342.3
17.5°	1298.3	1302.1	1308.4	1320.9	1323.4
20°	1269.4	1274.5	1282.0	1298.3	1302.1
22.5°	1238.0	1243.1	1255.6	1270.7	1277.0
25°	1201.6	1211.7	1224.2	1244.3	1248.1
27.5°	1165.2	1174.0	1190.3	1211.7	1216.7
30°	1122.5	1136.3	1156.4	1177.8	1182.8
32.5°	1081.1	1094.9	1118.8	1141.4	1147.6
35°	1038.4	1051.0	1076.1	1102.4	1110.0
37.5°	989.4	1005.8	1033.4	1059.7	1067.3
40°	937.9	958.0	989.4	1017.1	1025.8
42.5°	889.0	910.3	941.7	971.8	981.9
45°	837.5	857.6	895.3	929.2	936.7
47.5°	784.8	807.4	847.5	881.4	894.0
50°	732.0	755.9	798.6	833.7	841.3
52.5°	679.3	704.4	749.6	787.3	791.0
55°	624.0	651.7	699.4	735.8	743.3
57.5°	573.8	597.7	649.2	686.8	695.6
60°	518.6	544.9	600.2	635.3	646.6
62.5°	465.8	493.5	551.2	586.4	596.4
65°	410.6	442.0	498.5	539.9	550.0
67.5°	362.9	393.0	453.3	493.5	503.5
70°	307.6	341.5	405.6	447.0	457.0
72.5°	259.9	295.1	359.1	399.3	414.4
75°	208.4	248.6	312.6	355.3	365.4
77.5°	158.2	204.7	270.0	302.6	302.6
80°	113.0	162.0	222.2	237.3	239.8
82.5°	74.1	121.8	164.5	163.2	163.2
85°	42.7	79.1	97.9	95.4	95.4
87.5°	16.3	32.6	35.2	35.2	33.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)