

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: P311349

Luminaire Tested: **24FCZ2-40HE-UNV-L82765-S-CA08-W2A-U-4500K**

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: P311349
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: 24FCZ2-40HE-UNV-L82765-S-CA08-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 4500K 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

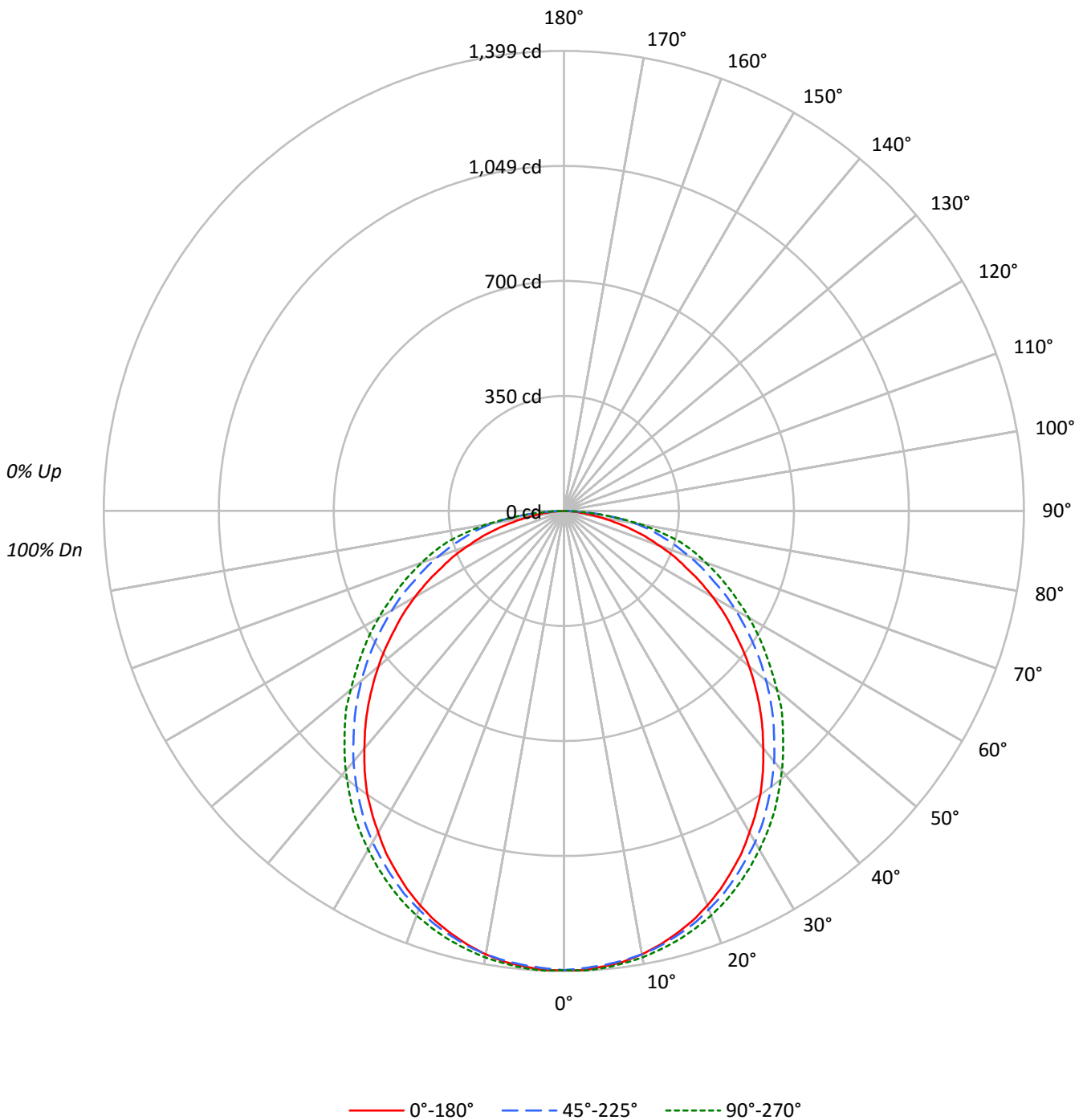
Lumens per Lamp: N/A
Luminaire Lumens: 3975.0 lumens
Efficiency: N/A
Efficacy: 128.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 31
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°	1879	1879	1879
5°	1878	1872	1884
10°	1870	1870	1884
15°	1852	1861	1880
20°	1828	1846	1875
25°	1794	1828	1863
30°	1754	1807	1848
35°	1715	1777	1833
40°	1657	1747	1812
45°	1603	1713	1792
50°	1541	1681	1771
55°	1472	1650	1753
60°	1403	1624	1750
65°	1315	1596	1761
70°	1217	1604	1808
75°	1090	1634	1910
80°	880	1732	1869
85°	662	1521	1482



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.2	3.3
10°-20°	377.7	9.5
20°-30°	567.8	14.3
30°-40°	676.4	17.0
40°-50°	692.3	17.4
50°-60°	623.2	15.7
60°-70°	489.4	12.3
70°-80°	317.7	8.0
80°-90°	98.2	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°	1077.8	27.1
0°-40°	1754.2	44.1
0°-60°	3069.7	77.2
0°-90°	3975.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3975.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1396	1396	1396	1396	1396	
5°	1390	1393	1386	1394	1395	132
15°	1330	1333	1336	1347	1350	375
25°	1208	1218	1231	1251	1255	557
35°	1044	1057	1082	1109	1116	651
45°	842	862	900	934	942	649
55°	628	655	703	740	748	563
65°	413	444	501	543	553	411
75°	210	250	314	357	367	222
85°	43	80	98	96	96	52
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1396.4	1396.4	1396.4	1396.4	1396.4
2.5°	1397.7	1397.7	1391.4	1397.7	1399.0
5°	1390.1	1392.7	1386.3	1393.9	1395.2
7.5°	1382.6	1382.6	1378.8	1386.3	1387.6
10°	1368.7	1369.9	1368.7	1377.5	1378.8
12.5°	1351.0	1353.5	1354.8	1363.6	1364.9
15°	1329.5	1333.3	1335.8	1347.2	1349.7
17.5°	1305.5	1309.3	1315.6	1328.3	1330.8
20°	1276.5	1281.5	1289.1	1305.5	1309.3
22.5°	1244.9	1250.0	1262.6	1277.8	1284.1
25°	1208.3	1218.4	1231.0	1251.2	1255.0
27.5°	1171.7	1180.5	1197.0	1218.4	1223.5
30°	1128.8	1142.7	1162.9	1184.3	1189.4
32.5°	1087.1	1101.0	1125.0	1147.7	1154.0
35°	1044.2	1056.8	1082.1	1108.6	1116.1
37.5°	994.9	1011.3	1039.1	1065.6	1073.2
40°	943.2	963.4	994.9	1022.7	1031.6
42.5°	893.9	915.4	947.0	977.3	987.4
45°	842.2	862.4	900.2	934.3	941.9
47.5°	789.1	811.9	852.3	886.4	899.0
50°	736.1	760.1	803.0	838.4	845.9
52.5°	683.1	708.3	753.8	791.7	795.4
55°	627.5	655.3	703.3	739.9	747.5
57.5°	577.0	601.0	652.8	690.6	699.5
60°	521.5	548.0	603.5	638.9	650.2
62.5°	468.4	496.2	554.3	589.6	599.7
65°	412.9	444.4	501.3	542.9	553.0
67.5°	364.9	395.2	455.8	496.2	506.3
70°	309.3	343.4	407.8	449.5	459.6
72.5°	261.4	296.7	361.1	401.5	416.7
75°	209.6	250.0	314.4	357.3	367.4
77.5°	159.1	205.8	271.5	304.3	304.3
80°	113.6	162.9	223.5	238.6	241.2
82.5°	74.5	122.5	165.4	164.1	164.1
85°	42.9	79.5	98.5	96.0	96.0
87.5°	16.4	32.8	35.4	35.4	34.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)