

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: P311453

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP125-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: P311453
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-CP125-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" POLYCARB 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

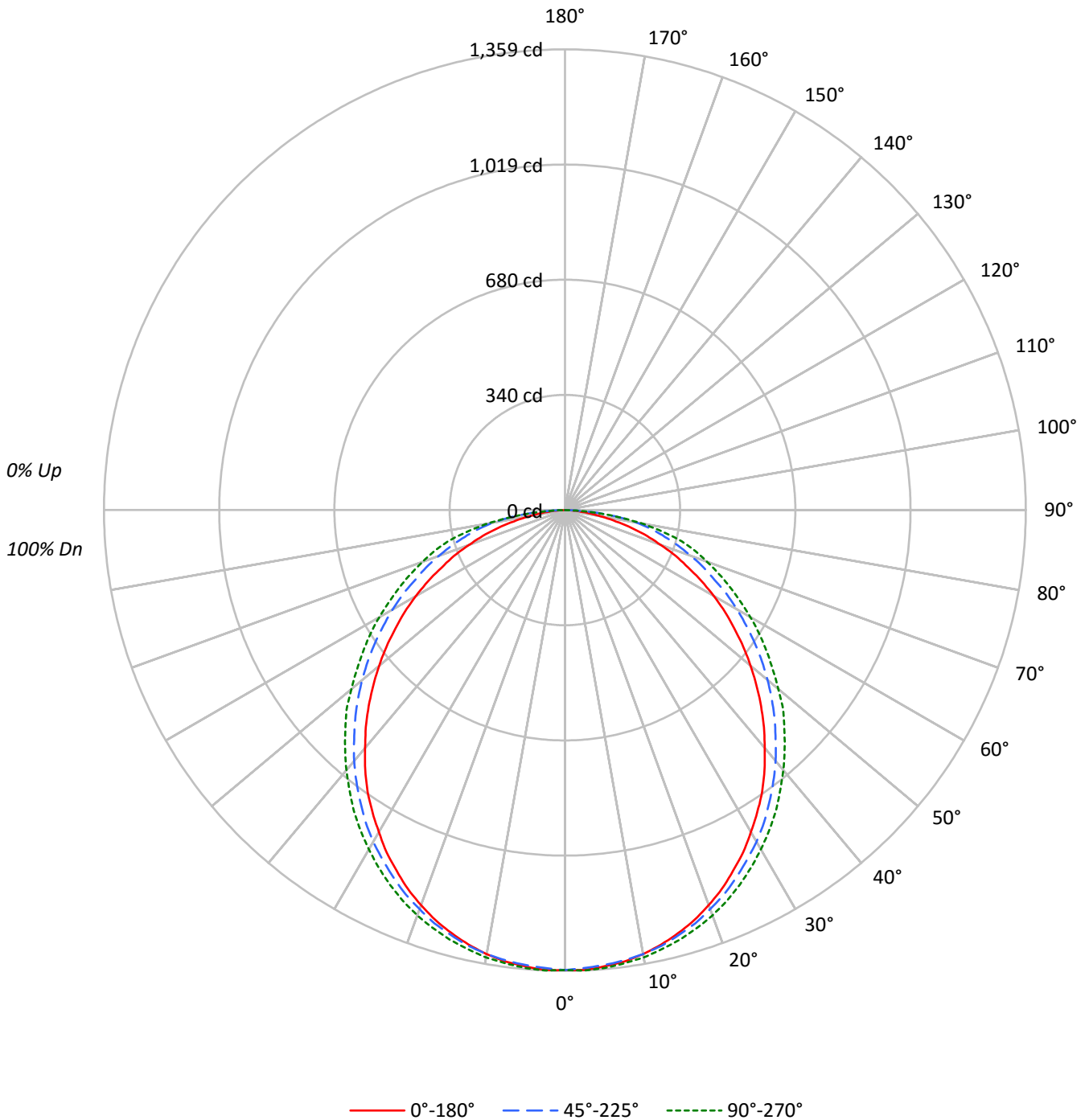
Lumens per Lamp: N/A
Luminaire Lumens: 3862.0 lumens
Efficiency: N/A
Efficacy: 114.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

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°	1825	1825	1825
5°	1824	1819	1831
10°	1817	1817	1830
15°	1799	1808	1827
20°	1776	1793	1821
25°	1743	1776	1810
30°	1704	1755	1795
35°	1666	1727	1781
40°	1610	1698	1760
45°	1557	1664	1741
50°	1497	1633	1720
55°	1430	1603	1704
60°	1363	1578	1700
65°	1277	1550	1711
70°	1182	1559	1757
75°	1058	1588	1856
80°	855	1682	1815
85°	644	1477	1439



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.4	3.3
10°-20°	367.0	9.5
20°-30°	551.7	14.3
30°-40°	657.2	17.0
40°-50°	672.6	17.4
50°-60°	605.5	15.7
60°-70°	475.5	12.3
70°-80°	308.6	8.0
80°-90°	95.4	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°	1047.2	27.1
0°-40°	1704.3	44.1
0°-60°	2982.4	77.2
0°-90°	3862.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3862.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1357	1357	1357	1357	1357	
5°	1351	1353	1347	1354	1356	128
15°	1292	1295	1298	1309	1311	364
25°	1174	1184	1196	1216	1219	541
35°	1014	1027	1051	1077	1084	633
45°	818	838	875	908	915	631
55°	610	637	683	719	726	547
65°	401	432	487	528	537	399
75°	204	243	306	347	357	215
85°	42	77	96	93	93	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1356.7	1356.7	1356.7	1356.7	1356.7
2.5°	1358.0	1358.0	1351.8	1358.0	1359.2
5°	1350.6	1353.1	1346.9	1354.3	1355.5
7.5°	1343.3	1343.3	1339.6	1346.9	1348.2
10°	1329.8	1331.0	1329.8	1338.3	1339.6
12.5°	1312.6	1315.0	1316.3	1324.9	1326.1
15°	1291.7	1295.4	1297.9	1308.9	1311.4
17.5°	1268.4	1272.1	1278.2	1290.5	1293.0
20°	1240.2	1245.1	1252.5	1268.4	1272.1
22.5°	1209.5	1214.4	1226.7	1241.4	1247.6
25°	1174.0	1183.8	1196.0	1215.7	1219.4
27.5°	1138.4	1147.0	1162.9	1183.8	1188.7
30°	1096.7	1110.2	1129.8	1150.7	1155.6
32.5°	1056.2	1069.7	1093.0	1115.1	1121.2
35°	1014.5	1026.8	1051.3	1077.1	1084.4
37.5°	966.7	982.6	1009.6	1035.3	1042.7
40°	916.4	936.0	966.7	993.6	1002.2
42.5°	868.5	889.4	920.0	949.5	959.3
45°	818.2	837.8	874.6	907.8	915.1
47.5°	766.7	788.8	828.0	861.2	873.4
50°	715.2	738.5	780.2	814.5	821.9
52.5°	663.7	688.2	732.3	769.1	772.8
55°	609.7	636.7	683.3	718.9	726.2
57.5°	560.6	583.9	634.2	671.0	679.6
60°	506.6	532.4	586.4	620.7	631.8
62.5°	455.1	482.1	538.5	572.9	582.7
65°	401.1	431.8	487.0	527.5	537.3
67.5°	354.5	384.0	442.8	482.1	491.9
70°	300.5	333.7	396.2	436.7	446.5
72.5°	253.9	288.3	350.8	390.1	404.8
75°	203.6	242.9	305.5	347.2	357.0
77.5°	154.6	200.0	263.7	295.6	295.6
80°	110.4	158.2	217.1	231.8	234.3
82.5°	72.4	119.0	160.7	159.5	159.5
85°	41.7	77.3	95.7	93.2	93.2
87.5°	15.9	31.9	34.3	34.3	33.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)