

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: P313941

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-CA08-W2A-U-3500K**

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: P313941
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-L83050-CA08-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 3500K 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: 4101.0 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

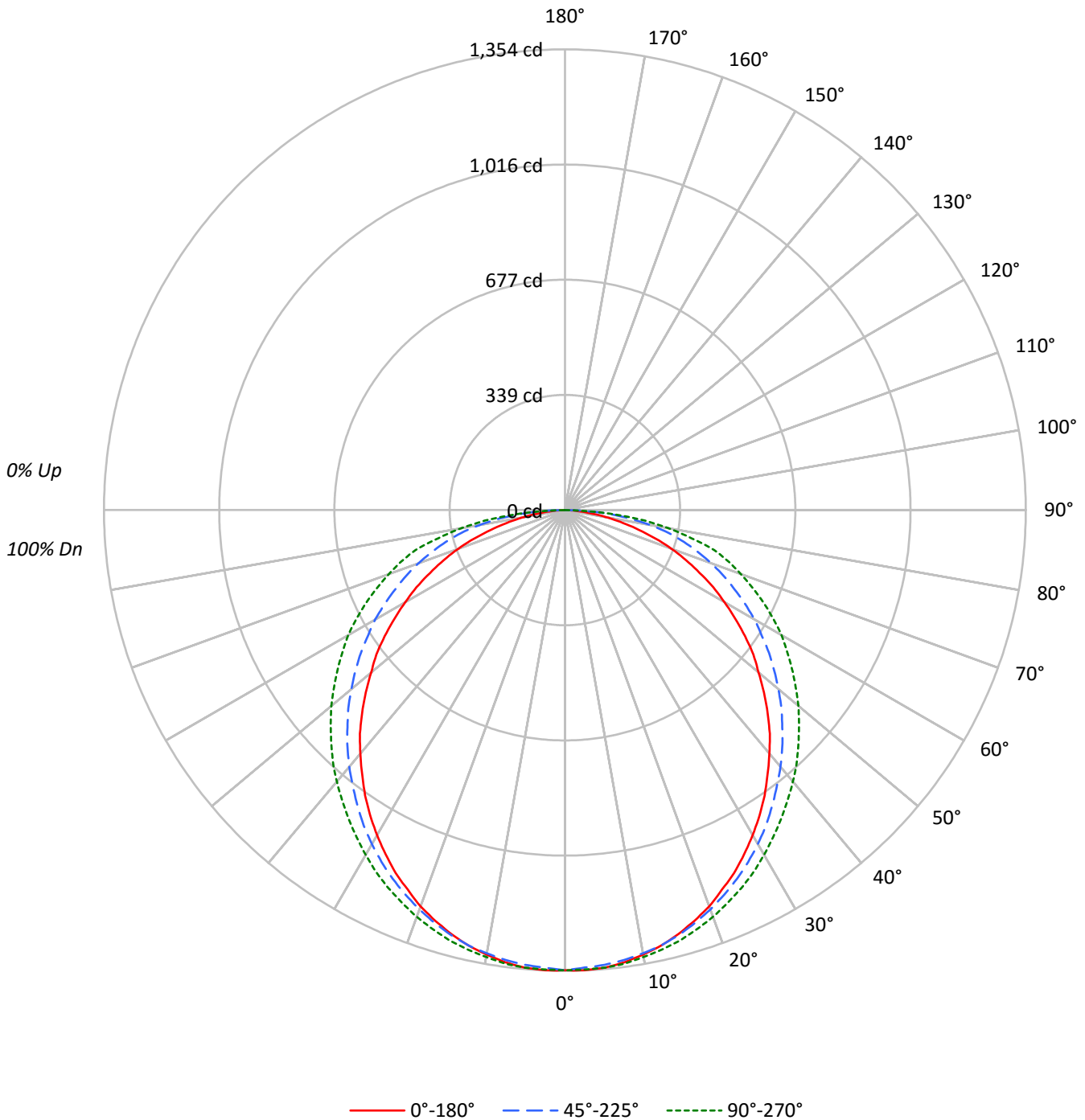
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1820	1820	1820
5°	1823	1812	1823
10°	1812	1807	1822
15°	1797	1801	1823
20°	1775	1789	1822
25°	1747	1776	1820
30°	1714	1761	1818
35°	1681	1743	1819
40°	1642	1730	1831
45°	1603	1719	1846
50°	1555	1715	1874
55°	1516	1717	1912
60°	1457	1732	1977
65°	1391	1750	2049
70°	1317	1804	2162
75°	1174	1881	2363
80°	1002	1993	2414
85°	715	1974	2311



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.0	3.1
10°-20°	366.0	8.9
20°-30°	552.8	13.5
30°-40°	666.2	16.2
40°-50°	699.4	17.1
50°-60°	654.4	16.0
60°-70°	540.4	13.2
70°-80°	368.2	9.0
80°-90°	125.6	3.1
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°	1046.8	25.5
0°-40°	1713.0	41.8
0°-60°	3066.8	74.8
0°-90°	4101.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4101.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1352	1352	1352	1352	1352	
5°	1350	1348	1342	1350	1350	128
15°	1290	1291	1293	1306	1309	364
25°	1177	1182	1196	1219	1226	542
35°	1023	1034	1061	1097	1108	639
45°	842	860	904	952	970	650
55°	646	672	732	792	815	577
65°	437	474	550	619	644	433
75°	226	278	362	430	454	241
85°	46	91	128	144	150	58
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1352.5	1352.5	1352.5	1352.5	1352.5
2.5°	1353.8	1352.5	1345.7	1352.5	1351.1
5°	1349.8	1348.4	1341.6	1349.8	1349.8
7.5°	1340.2	1340.2	1333.4	1342.9	1344.3
10°	1326.6	1326.6	1322.5	1333.4	1333.4
12.5°	1310.3	1310.3	1310.3	1321.2	1322.5
15°	1289.9	1291.2	1292.6	1306.2	1308.9
17.5°	1265.4	1268.1	1272.2	1288.5	1291.2
20°	1239.5	1242.3	1249.1	1268.1	1272.2
22.5°	1206.9	1213.7	1223.2	1245.0	1249.1
25°	1177.0	1182.4	1196.0	1219.1	1225.9
27.5°	1140.2	1148.4	1166.1	1190.6	1200.1
30°	1103.5	1111.6	1133.4	1162.0	1170.1
32.5°	1064.0	1076.3	1099.4	1129.3	1138.9
35°	1023.2	1034.1	1061.3	1096.7	1107.6
37.5°	978.3	993.3	1023.2	1061.3	1074.9
40°	934.8	951.1	985.1	1025.9	1042.2
42.5°	891.2	907.5	945.6	991.9	1008.2
45°	842.2	859.9	903.5	952.4	970.1
47.5°	793.3	815.0	862.6	914.3	933.4
50°	742.9	767.4	819.1	873.5	895.3
52.5°	698.0	721.1	775.6	834.1	854.5
55°	646.3	672.2	732.0	791.9	815.0
57.5°	593.2	621.8	685.8	751.1	774.2
60°	541.5	572.8	643.6	708.9	734.7
62.5°	491.2	522.5	596.0	664.0	689.8
65°	436.8	473.5	549.7	619.1	643.6
67.5°	385.1	424.5	504.8	572.8	597.3
70°	334.7	372.8	458.5	525.2	549.7
72.5°	280.3	323.8	409.6	478.9	504.8
75°	225.9	277.6	361.9	430.0	454.5
77.5°	175.5	228.6	312.9	368.7	381.0
80°	129.3	183.7	257.2	296.6	311.6
82.5°	83.0	137.4	195.9	224.5	236.8
85°	46.3	91.2	127.9	144.2	149.7
87.5°	19.0	39.5	51.7	58.5	58.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)