

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: P311475

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP250-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: P311475  
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-CP250-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB 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**

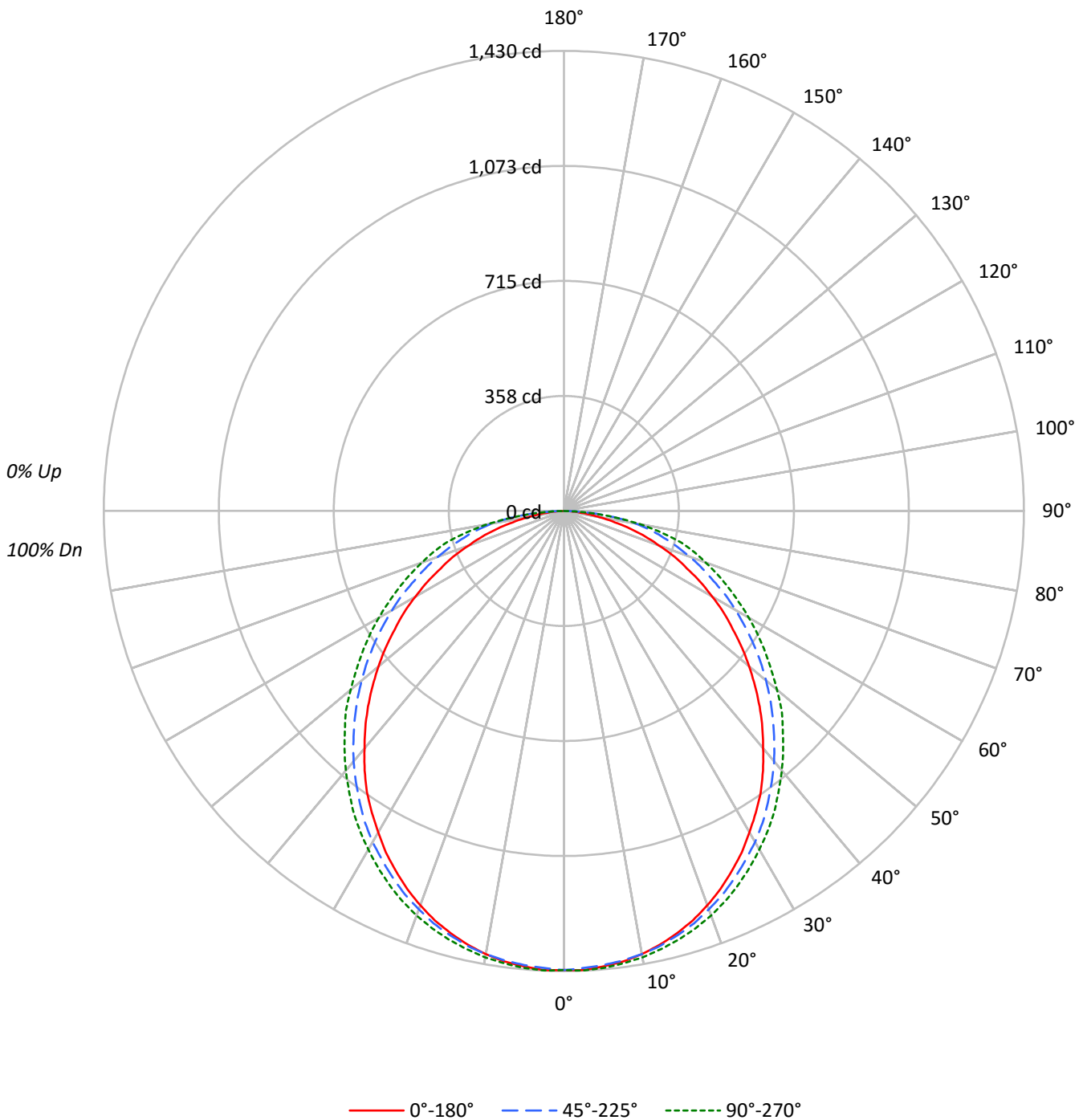
Lumens per Lamp: N/A  
Luminaire Lumens: 4062.0 lumens  
Efficiency: N/A  
Efficacy: 118.1 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
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				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°	1920	1920	1920
5°	1919	1913	1926
10°	1911	1911	1925
15°	1892	1902	1921
20°	1868	1886	1916
25°	1833	1868	1904
30°	1792	1846	1888
35°	1753	1816	1873
40°	1693	1786	1851
45°	1638	1750	1831
50°	1575	1718	1810
55°	1504	1686	1792
60°	1434	1660	1788
65°	1343	1631	1799
70°	1244	1639	1847
75°	1114	1670	1952
80°	900	1770	1909
85°	678	1553	1514



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.1	3.3
10°-20°	386.0	9.5
20°-30°	580.3	14.3
30°-40°	691.2	17.0
40°-50°	707.4	17.4
50°-60°	636.9	15.7
60°-70°	500.1	12.3
70°-80°	324.6	8.0
80°-90°	100.4	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°	1101.4	27.1
0°-40°	1792.6	44.1
0°-60°	3136.8	77.2
0°-90°	4062.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4062.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1427	1427	1427	1427	1427	
5°	1421	1423	1417	1424	1426	135
15°	1359	1362	1365	1377	1379	383
25°	1235	1245	1258	1279	1282	569
35°	1067	1080	1106	1133	1141	666
45°	861	881	920	955	962	663
55°	641	670	719	756	764	575
65°	422	454	512	555	565	420
75°	214	256	321	365	376	227
85°	44	81	101	98	98	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1427.0	1427.0	1427.0	1427.0	1427.0
2.5°	1428.3	1428.3	1421.8	1428.3	1429.6
5°	1420.6	1423.1	1416.7	1424.4	1425.7
7.5°	1412.8	1412.8	1408.9	1416.7	1418.0
10°	1398.6	1399.9	1398.6	1407.7	1408.9
12.5°	1380.6	1383.1	1384.4	1393.5	1394.8
15°	1358.6	1362.5	1365.1	1376.7	1379.3
17.5°	1334.1	1338.0	1344.4	1357.3	1359.9
20°	1304.4	1309.6	1317.3	1334.1	1338.0
22.5°	1272.2	1277.3	1290.2	1305.7	1312.2
25°	1234.8	1245.1	1258.0	1278.6	1282.5
27.5°	1197.3	1206.4	1223.1	1245.1	1250.2
30°	1153.5	1167.7	1188.3	1210.2	1215.4
32.5°	1110.9	1125.1	1149.6	1172.8	1179.3
35°	1067.0	1079.9	1105.7	1132.8	1140.6
37.5°	1016.7	1033.5	1061.9	1089.0	1096.7
40°	963.8	984.5	1016.7	1045.1	1054.1
42.5°	913.5	935.4	967.7	998.6	1009.0
45°	860.6	881.2	919.9	954.8	962.5
47.5°	806.4	829.6	870.9	905.7	918.7
50°	752.2	776.7	820.6	856.7	864.5
52.5°	698.0	723.8	770.3	809.0	812.9
55°	641.3	669.6	718.7	756.1	763.8
57.5°	589.6	614.2	667.1	705.8	714.8
60°	532.9	560.0	616.7	652.9	664.5
62.5°	478.7	507.1	566.4	602.5	612.9
65°	421.9	454.2	512.2	554.8	565.1
67.5°	372.9	403.8	465.8	507.1	517.4
70°	316.1	350.9	416.7	459.3	469.6
72.5°	267.1	303.2	369.0	410.3	425.8
75°	214.2	255.5	321.3	365.1	375.5
77.5°	162.6	210.3	277.4	310.9	310.9
80°	116.1	166.4	228.4	243.9	246.4
82.5°	76.1	125.2	169.0	167.7	167.7
85°	43.9	81.3	100.6	98.1	98.1
87.5°	16.8	33.5	36.1	36.1	34.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)