

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: P311464

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP187-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: P311464  
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-CP187-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB 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: 3937.0 lumens  
Efficiency: N/A  
Efficacy: 115.8 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

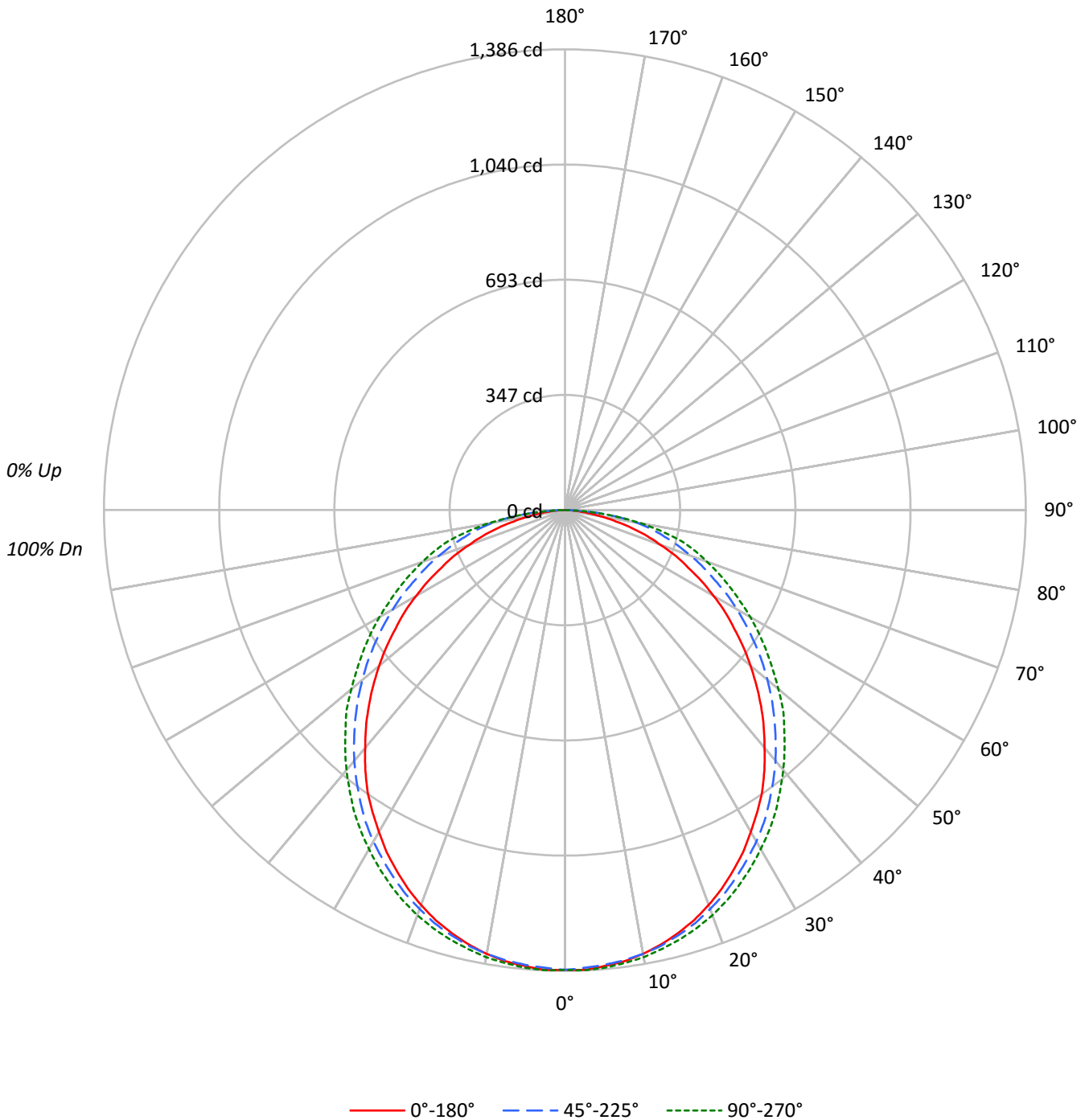
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1861	1861	1861
5°	1860	1855	1866
10°	1852	1852	1866
15°	1834	1843	1862
20°	1810	1828	1857
25°	1777	1810	1845
30°	1737	1789	1830
35°	1699	1760	1816
40°	1641	1731	1795
45°	1587	1697	1775
50°	1526	1665	1754
55°	1458	1634	1737
60°	1390	1609	1733
65°	1302	1581	1744
70°	1205	1589	1791
75°	1079	1619	1892
80°	872	1715	1851
85°	656	1505	1467



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.9	3.3
10°-20°	374.1	9.5
20°-30°	562.4	14.3
30°-40°	669.9	17.0
40°-50°	685.6	17.4
50°-60°	617.3	15.7
60°-70°	484.8	12.3
70°-80°	314.6	8.0
80°-90°	97.3	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°	1067.5	27.1
0°-40°	1737.4	44.1
0°-60°	3040.3	77.2
0°-90°	3937.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3937.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1383	1383	1383	1383	1383	
5°	1377	1379	1373	1381	1382	131
15°	1317	1321	1323	1334	1337	371
25°	1197	1207	1219	1239	1243	551
35°	1034	1047	1072	1098	1106	645
45°	834	854	892	925	933	643
55°	622	649	696	733	740	557
65°	409	440	496	538	548	407
75°	208	248	311	354	364	220
85°	42	79	98	95	95	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1383.1	1383.1	1383.1	1383.1	1383.1
2.5°	1384.3	1384.3	1378.1	1384.3	1385.6
5°	1376.8	1379.3	1373.1	1380.6	1381.8
7.5°	1369.3	1369.3	1365.6	1373.1	1374.3
10°	1355.6	1356.8	1355.6	1364.3	1365.6
12.5°	1338.1	1340.6	1341.8	1350.6	1351.8
15°	1316.8	1320.6	1323.1	1334.3	1336.8
17.5°	1293.1	1296.8	1303.1	1315.6	1318.1
20°	1264.3	1269.3	1276.8	1293.1	1296.8
22.5°	1233.0	1238.0	1250.5	1265.5	1271.8
25°	1196.8	1206.8	1219.3	1239.3	1243.0
27.5°	1160.5	1169.3	1185.5	1206.8	1211.8
30°	1118.0	1131.7	1151.7	1173.0	1178.0
32.5°	1076.7	1090.5	1114.2	1136.7	1143.0
35°	1034.2	1046.7	1071.7	1098.0	1105.5
37.5°	985.4	1001.7	1029.2	1055.5	1063.0
40°	934.2	954.2	985.4	1012.9	1021.7
42.5°	885.4	906.6	937.9	967.9	977.9
45°	834.1	854.1	891.6	925.4	932.9
47.5°	781.6	804.1	844.1	877.9	890.4
50°	729.1	752.8	795.3	830.4	837.9
52.5°	676.5	701.6	746.6	784.1	787.8
55°	621.5	649.0	696.5	732.8	740.3
57.5°	571.5	595.3	646.5	684.0	692.8
60°	516.5	542.7	597.8	632.8	644.0
62.5°	463.9	491.5	549.0	584.0	594.0
65°	408.9	440.2	496.5	537.7	547.7
67.5°	361.4	391.4	451.4	491.5	501.5
70°	306.4	340.1	403.9	445.2	455.2
72.5°	258.9	293.9	357.7	397.7	412.7
75°	207.6	247.6	311.4	353.9	363.9
77.5°	157.6	203.8	268.9	301.4	301.4
80°	112.5	161.3	221.3	236.4	238.9
82.5°	73.8	121.3	163.8	162.6	162.6
85°	42.5	78.8	97.5	95.0	95.0
87.5°	16.3	32.5	35.0	35.0	33.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)