

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: P313957

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-CP187-W2A-U-4000K**

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: P313957  
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-CP187-W2A-U-4000K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 4000K 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**

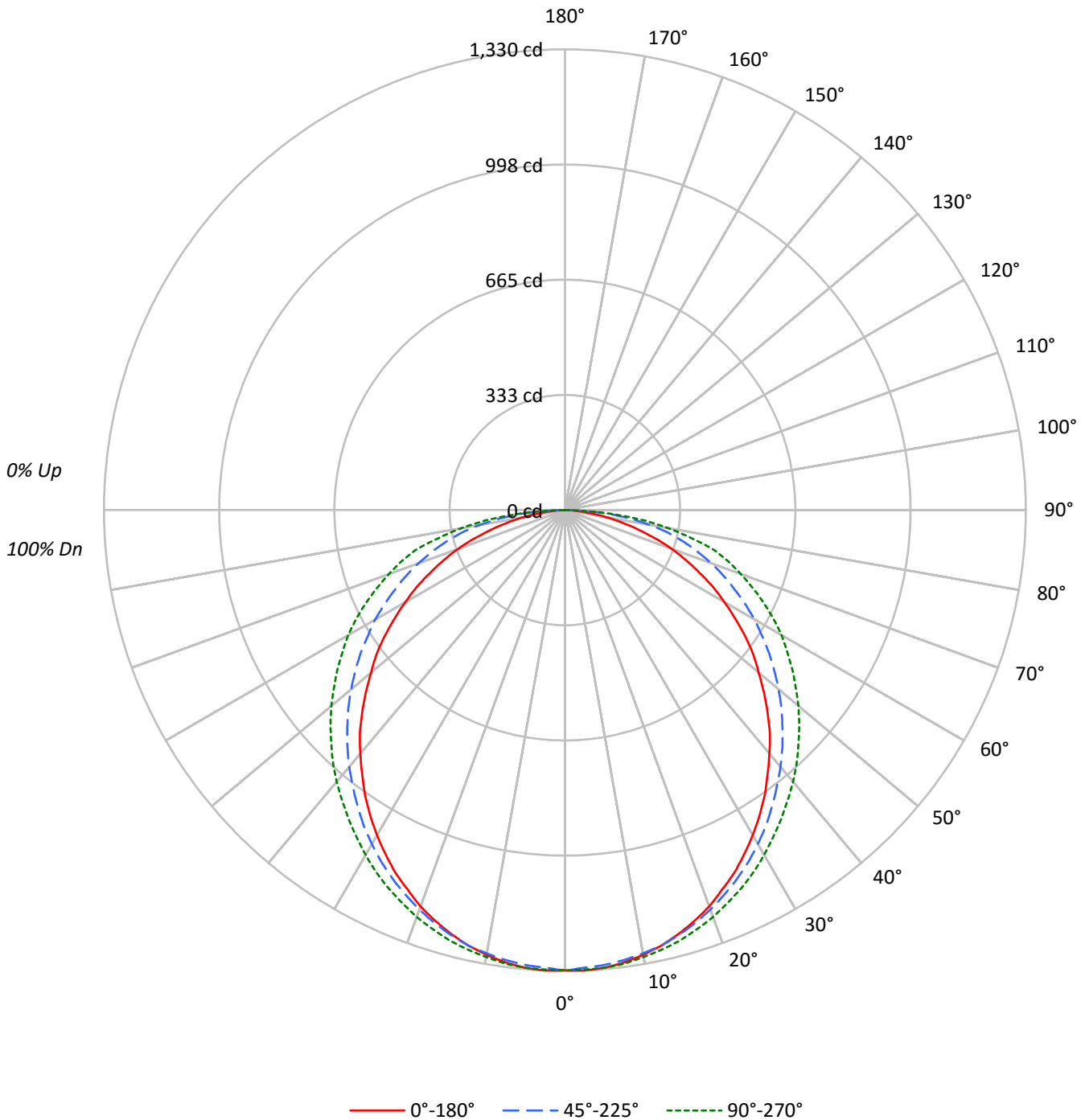
Lumens per Lamp: N/A  
Luminaire Lumens: 4029.0 lumens  
Efficiency: N/A  
Efficacy: 116.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.6  
Input Voltage (V): NR  
Input Current (A<sub>in</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	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°	1788	1788	1788
5°	1791	1780	1791
10°	1781	1775	1790
15°	1765	1769	1791
20°	1744	1757	1790
25°	1717	1744	1788
30°	1684	1730	1786
35°	1651	1713	1787
40°	1613	1700	1799
45°	1574	1689	1814
50°	1528	1684	1841
55°	1490	1687	1878
60°	1432	1702	1942
65°	1366	1719	2013
70°	1293	1772	2124
75°	1154	1849	2321
80°	984	1957	2372
85°	701	1941	2269



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.7	3.1
10°-20°	359.6	8.9
20°-30°	543.1	13.5
30°-40°	654.5	16.2
40°-50°	687.1	17.1
50°-60°	642.9	16.0
60°-70°	530.9	13.2
70°-80°	361.8	9.0
80°-90°	123.4	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°	1028.4	25.5
0°-40°	1682.9	41.8
0°-60°	3013.0	74.8
0°-90°	4029.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4029.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1329	1329	1329	1329	1329	
5°	1326	1325	1318	1326	1326	126
15°	1267	1269	1270	1283	1286	357
25°	1156	1162	1175	1198	1204	532
35°	1005	1016	1043	1077	1088	628
45°	827	845	888	936	953	638
55°	635	660	719	778	801	567
65°	429	465	540	608	632	426
75°	222	273	356	422	446	237
85°	45	90	126	142	147	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1328.7	1328.7	1328.7	1328.7	1328.7
2.5°	1330.1	1328.7	1322.0	1328.7	1327.4
5°	1326.1	1324.7	1318.0	1326.1	1326.1
7.5°	1316.7	1316.7	1310.0	1319.4	1320.7
10°	1303.3	1303.3	1299.3	1310.0	1310.0
12.5°	1287.3	1287.3	1287.3	1298.0	1299.3
15°	1267.2	1268.6	1269.9	1283.3	1286.0
17.5°	1243.2	1245.9	1249.9	1265.9	1268.6
20°	1217.8	1220.5	1227.1	1245.9	1249.9
22.5°	1185.7	1192.4	1201.7	1223.1	1227.1
25°	1156.3	1161.6	1175.0	1197.7	1204.4
27.5°	1120.2	1128.2	1145.6	1169.7	1179.0
30°	1084.1	1092.1	1113.5	1141.6	1149.6
32.5°	1045.3	1057.4	1080.1	1109.5	1118.9
35°	1005.2	1015.9	1042.7	1077.4	1088.1
37.5°	961.1	975.8	1005.2	1042.7	1056.0
40°	918.3	934.4	967.8	1007.9	1024.0
42.5°	875.6	891.6	929.0	974.5	990.5
45°	827.4	844.8	887.6	935.7	953.1
47.5°	779.3	800.7	847.5	898.3	917.0
50°	729.9	753.9	804.7	858.2	879.6
52.5°	685.8	708.5	761.9	819.4	839.5
55°	635.0	660.4	719.2	778.0	800.7
57.5°	582.8	610.9	673.7	737.9	760.6
60°	532.0	562.8	632.3	696.4	721.8
62.5°	482.6	513.3	585.5	652.3	677.7
65°	429.1	465.2	540.0	608.2	632.3
67.5°	378.3	417.1	495.9	562.8	586.8
70°	328.8	366.3	450.5	516.0	540.0
72.5°	275.4	318.1	402.4	470.5	495.9
75°	221.9	272.7	355.6	422.4	446.5
77.5°	172.4	224.6	307.5	362.3	374.3
80°	127.0	180.5	252.6	291.4	306.1
82.5°	81.5	135.0	192.5	220.6	232.6
85°	45.4	89.6	125.7	141.7	147.0
87.5°	18.7	38.8	50.8	57.5	57.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)