

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: P310764

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-CA08-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: P310764  
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-L82765-CA08-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC 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**

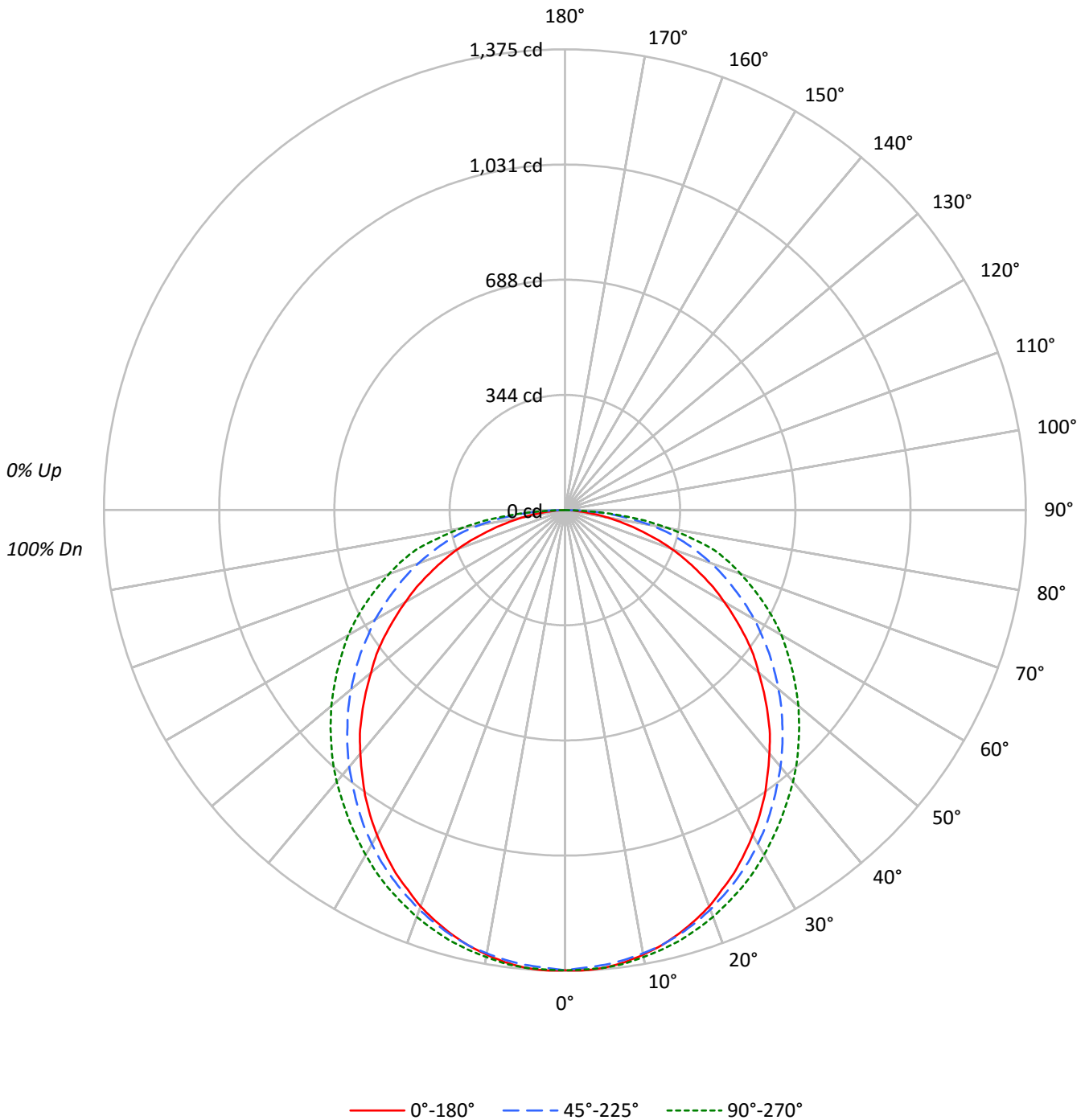
Lumens per Lamp: N/A  
Luminaire Lumens: 4165.0 lumens  
Efficiency: N/A  
Efficacy: 121.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.4  
Input Voltage (V): NR  
Input Current (A<sub>in</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°	1848	1848	1848
5°	1851	1840	1851
10°	1841	1835	1850
15°	1825	1829	1852
20°	1803	1816	1850
25°	1775	1803	1848
30°	1741	1788	1846
35°	1707	1770	1848
40°	1667	1757	1859
45°	1628	1746	1875
50°	1579	1741	1903
55°	1540	1744	1942
60°	1480	1759	2008
65°	1412	1777	2081
70°	1337	1832	2196
75°	1193	1911	2399
80°	1017	2024	2452
85°	726	2005	2347



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	130.0	3.1
10°-20°	371.7	8.9
20°-30°	561.4	13.5
30°-40°	676.6	16.2
40°-50°	710.3	17.1
50°-60°	664.6	16.0
60°-70°	548.8	13.2
70°-80°	374.0	9.0
80°-90°	127.5	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°	1063.1	25.5
0°-40°	1739.8	41.8
0°-60°	3114.7	74.8
0°-90°	4165.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4165.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1374	1374	1374	1374	1374	
5°	1371	1369	1362	1371	1371	130
15°	1310	1311	1313	1327	1329	369
25°	1195	1201	1215	1238	1245	550
35°	1039	1050	1078	1114	1125	649
45°	855	873	918	967	985	660
55°	656	683	743	804	828	586
65°	444	481	558	629	654	440
75°	229	282	368	437	462	245
85°	47	93	130	146	152	59
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1373.6	1373.6	1373.6	1373.6	1373.6
2.5°	1375.0	1373.6	1366.7	1373.6	1372.2
5°	1370.8	1369.4	1362.5	1370.8	1370.8
7.5°	1361.1	1361.1	1354.2	1363.9	1365.3
10°	1347.3	1347.3	1343.2	1354.2	1354.2
12.5°	1330.7	1330.7	1330.7	1341.8	1343.2
15°	1310.0	1311.4	1312.8	1326.6	1329.4
17.5°	1285.1	1287.9	1292.1	1308.6	1311.4
20°	1258.9	1261.6	1268.6	1287.9	1292.1
22.5°	1225.7	1232.6	1242.3	1264.4	1268.6
25°	1195.3	1200.8	1214.7	1238.2	1245.1
27.5°	1158.0	1166.3	1184.3	1209.1	1218.8
30°	1120.7	1129.0	1151.1	1180.1	1188.4
32.5°	1080.6	1093.1	1116.6	1147.0	1156.6
35°	1039.2	1050.2	1077.9	1113.8	1124.8
37.5°	993.6	1008.8	1039.2	1077.9	1091.7
40°	949.3	965.9	1000.5	1041.9	1058.5
42.5°	905.1	921.7	960.4	1007.4	1024.0
45°	855.4	873.3	917.6	967.3	985.3
47.5°	805.6	827.7	876.1	928.6	948.0
50°	754.5	779.4	831.9	887.2	909.3
52.5°	708.9	732.4	787.7	847.1	867.8
55°	656.4	682.6	743.4	804.2	827.7
57.5°	602.5	631.5	696.5	762.8	786.3
60°	550.0	581.8	653.6	720.0	746.2
62.5°	498.9	530.6	605.3	674.4	700.6
65°	443.6	480.9	558.3	628.8	653.6
67.5°	391.1	431.1	512.7	581.8	606.6
70°	339.9	378.6	465.7	533.4	558.3
72.5°	284.7	328.9	415.9	486.4	512.7
75°	229.4	281.9	367.6	436.7	461.5
77.5°	178.3	232.2	317.8	374.5	386.9
80°	131.3	186.6	261.2	301.2	316.4
82.5°	84.3	139.6	199.0	228.0	240.4
85°	47.0	92.6	129.9	146.5	152.0
87.5°	19.3	40.1	52.5	59.4	59.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)