

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: P311437

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-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: P311437  
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-CA08-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH 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**

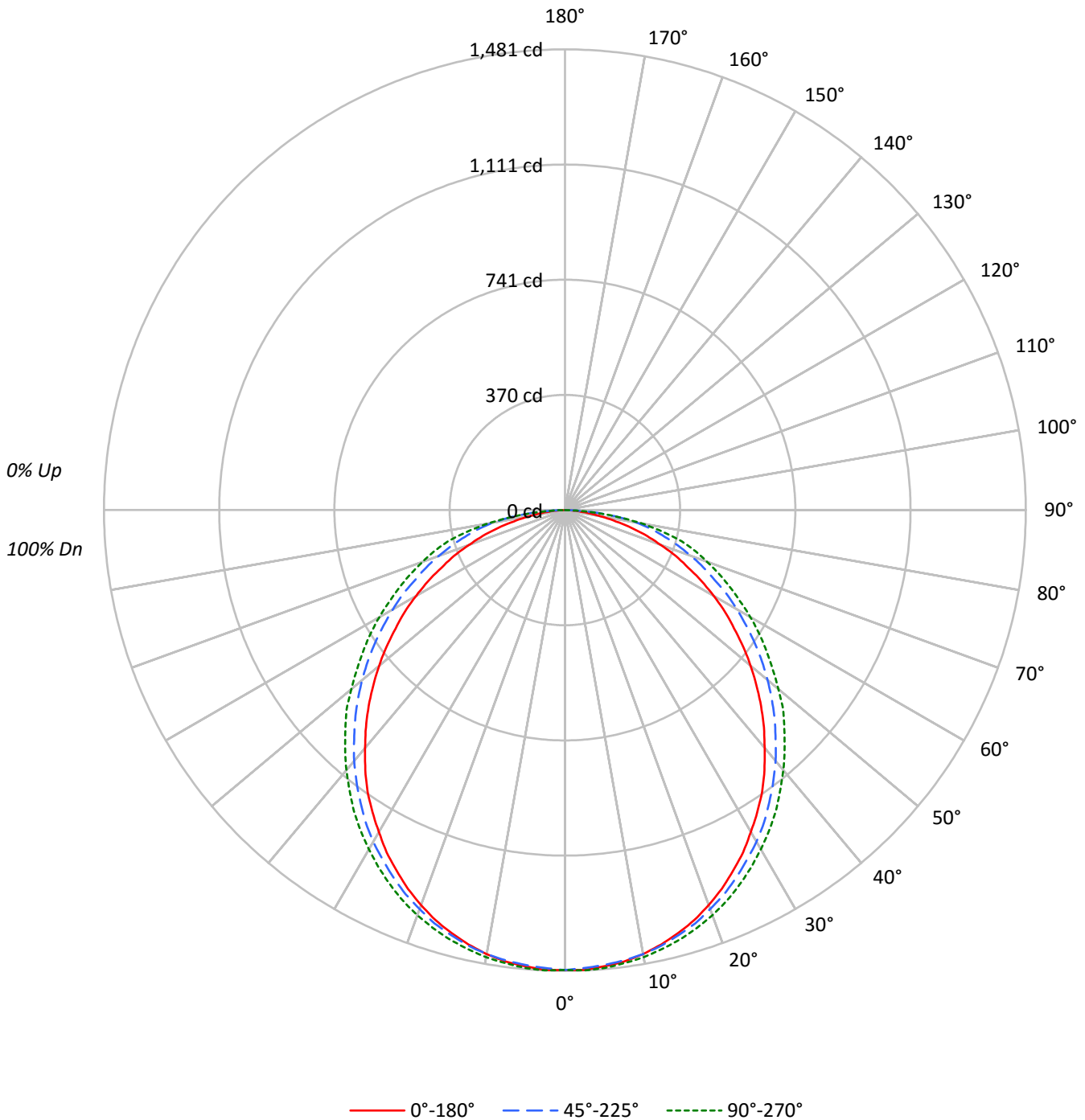
Lumens per Lamp: N/A  
Luminaire Lumens: 4208.0 lumens  
Efficiency: N/A  
Efficacy: 123.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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°	1989	1989	1989
5°	1988	1982	1995
10°	1980	1980	1994
15°	1961	1970	1990
20°	1935	1954	1985
25°	1899	1935	1972
30°	1856	1913	1956
35°	1816	1882	1941
40°	1754	1850	1918
45°	1696	1813	1897
50°	1631	1779	1874
55°	1558	1746	1856
60°	1485	1719	1852
65°	1392	1689	1864
70°	1288	1698	1914
75°	1154	1730	2022
80°	932	1833	1978
85°	701	1610	1568



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	140.0	3.3
10°-20°	399.9	9.5
20°-30°	601.1	14.3
30°-40°	716.0	17.0
40°-50°	732.8	17.4
50°-60°	659.8	15.7
60°-70°	518.1	12.3
70°-80°	336.3	8.0
80°-90°	104.0	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°	1141.0	27.1
0°-40°	1857.0	44.1
0°-60°	3249.6	77.2
0°-90°	4208.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4208.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1478	1478	1478	1478	1478	
5°	1472	1474	1468	1476	1477	140
15°	1408	1412	1414	1426	1429	397
25°	1279	1290	1303	1325	1329	589
35°	1105	1119	1146	1174	1182	690
45°	892	913	953	989	997	687
55°	664	694	744	783	791	596
65°	437	470	531	575	585	435
75°	222	265	333	378	389	235
85°	45	84	104	102	102	55
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1478.3	1478.3	1478.3	1478.3	1478.3
2.5°	1479.6	1479.6	1473.0	1479.6	1481.0
5°	1471.6	1474.3	1467.6	1475.6	1477.0
7.5°	1463.6	1463.6	1459.6	1467.6	1468.9
10°	1448.9	1450.2	1448.9	1458.2	1459.6
12.5°	1430.2	1432.9	1434.2	1443.5	1444.9
15°	1407.5	1411.5	1414.1	1426.2	1428.8
17.5°	1382.1	1386.1	1392.8	1406.1	1408.8
20°	1351.3	1356.7	1364.7	1382.1	1386.1
22.5°	1317.9	1323.3	1336.6	1352.7	1359.3
25°	1279.1	1289.8	1303.2	1324.6	1328.6
27.5°	1240.4	1249.7	1267.1	1289.8	1295.2
30°	1194.9	1209.6	1231.0	1253.7	1259.1
32.5°	1150.8	1165.5	1190.9	1215.0	1221.7
35°	1105.4	1118.7	1145.5	1173.5	1181.6
37.5°	1053.3	1070.6	1100.0	1128.1	1136.1
40°	998.5	1019.8	1053.3	1082.7	1092.0
42.5°	946.3	969.0	1002.5	1034.5	1045.2
45°	891.5	912.9	953.0	989.1	997.1
47.5°	835.4	859.4	902.2	938.3	951.7
50°	779.2	804.6	850.1	887.5	895.5
52.5°	723.1	749.8	798.0	838.1	842.1
55°	664.3	693.7	744.5	783.3	791.3
57.5°	610.8	636.2	691.0	731.1	740.5
60°	552.0	580.1	638.9	676.3	688.4
62.5°	495.9	525.3	586.8	624.2	634.9
65°	437.1	470.5	530.6	574.7	585.4
67.5°	386.3	418.4	482.5	525.3	536.0
70°	327.5	363.6	431.7	475.8	486.5
72.5°	276.7	314.1	382.3	425.0	441.1
75°	221.9	264.7	332.8	378.3	389.0
77.5°	168.4	217.9	287.4	322.1	322.1
80°	120.3	172.4	236.6	252.6	255.3
82.5°	78.9	129.7	175.1	173.8	173.8
85°	45.4	84.2	104.3	101.6	101.6
87.5°	17.4	34.8	37.4	37.4	36.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)