

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: P311440

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-5000K**

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: P311440  
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-5000K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET  
Light Source: (336) 5000K 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**

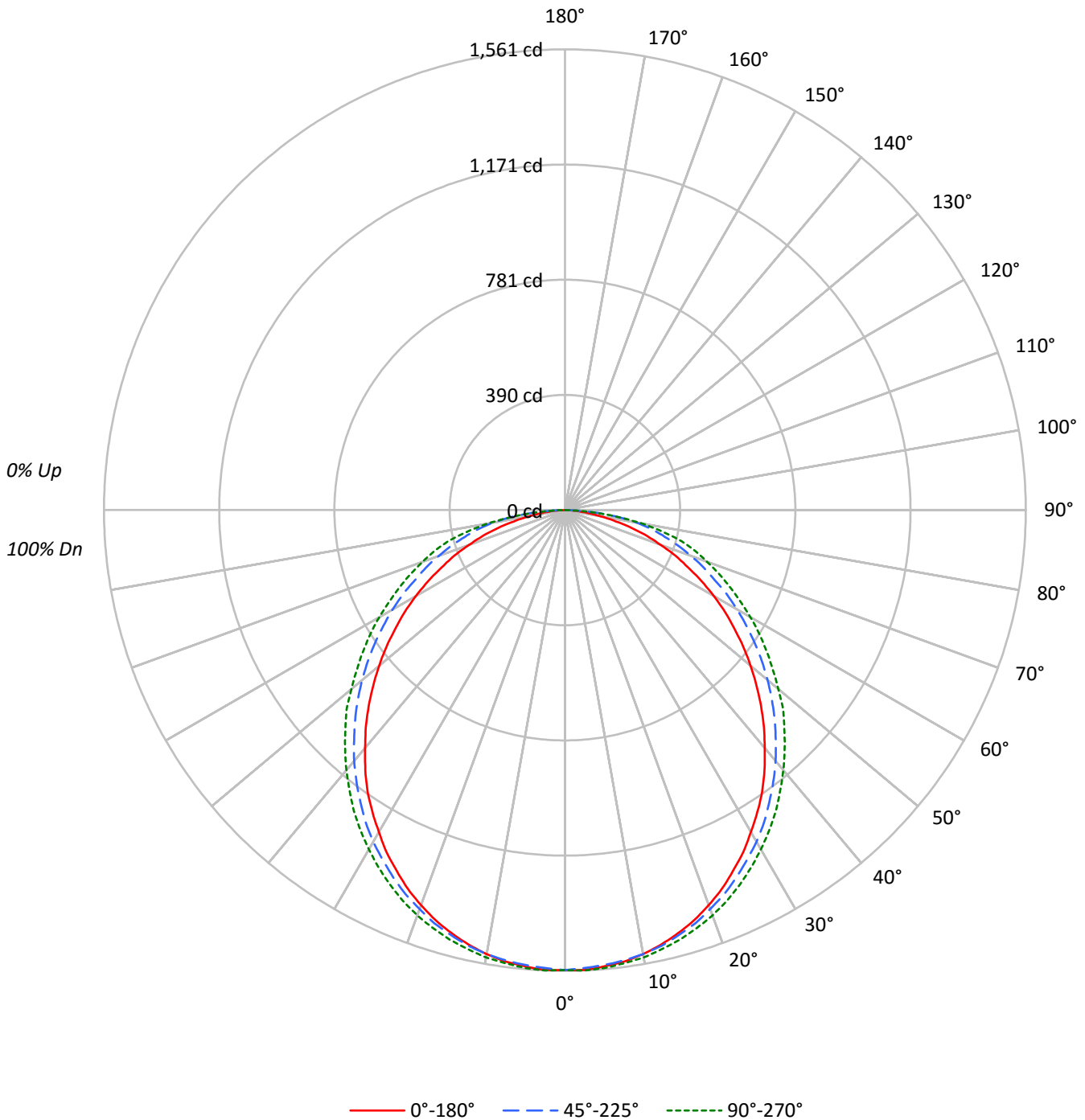
Lumens per Lamp: N/A  
Luminaire Lumens: 4436.0 lumens  
Efficiency: N/A  
Efficacy: 128.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 34.6  
Input Voltage (V): NR  
Input Current (A<sub>in</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	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°	2097	2097	2097
5°	2095	2090	2103
10°	2087	2087	2102
15°	2067	2077	2098
20°	2040	2060	2092
25°	2002	2040	2079
30°	1957	2016	2062
35°	1914	1983	2046
40°	1849	1950	2022
45°	1788	1912	2000
50°	1720	1876	1976
55°	1643	1841	1957
60°	1566	1812	1953
65°	1467	1781	1965
70°	1358	1790	2018
75°	1216	1824	2131
80°	982	1932	2085
85°	739	1697	1653



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.5	3.3
10°-20°	421.6	9.5
20°-30°	633.7	14.3
30°-40°	754.8	17.0
40°-50°	772.5	17.4
50°-60°	695.5	15.7
60°-70°	546.2	12.3
70°-80°	354.5	8.0
80°-90°	109.6	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°	1202.8	27.1
0°-40°	1957.6	44.1
0°-60°	3425.7	77.2
0°-90°	4436.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4436.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1551	1554	1547	1556	1557	147
15°	1484	1488	1491	1503	1506	418
25°	1348	1360	1374	1396	1401	621
35°	1165	1179	1208	1237	1246	727
45°	940	962	1005	1043	1051	725
55°	700	731	785	826	834	628
65°	461	496	559	606	617	459
75°	234	279	351	399	410	248
85°	48	89	110	107	107	58
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1558.4	1558.4	1558.4	1558.4	1558.4
2.5°	1559.8	1559.8	1552.8	1559.8	1561.2
5°	1551.4	1554.2	1547.1	1555.6	1557.0
7.5°	1542.9	1542.9	1538.7	1547.1	1548.5
10°	1527.4	1528.8	1527.4	1537.3	1538.7
12.5°	1507.7	1510.5	1511.9	1521.8	1523.2
15°	1483.7	1487.9	1490.8	1503.4	1506.3
17.5°	1456.9	1461.2	1468.2	1482.3	1485.1
20°	1424.5	1430.2	1438.6	1456.9	1461.2
22.5°	1389.3	1394.9	1409.0	1425.9	1433.0
25°	1348.4	1359.7	1373.8	1396.4	1400.6
27.5°	1307.6	1317.5	1335.8	1359.7	1365.4
30°	1259.7	1275.2	1297.7	1321.7	1327.3
32.5°	1213.2	1228.7	1255.5	1280.8	1287.9
35°	1165.3	1179.4	1207.5	1237.1	1245.6
37.5°	1110.3	1128.6	1159.6	1189.2	1197.7
40°	1052.6	1075.1	1110.3	1141.3	1151.2
42.5°	997.6	1021.6	1056.8	1090.6	1101.9
45°	939.8	962.4	1004.6	1042.7	1051.1
47.5°	880.6	906.0	951.1	989.1	1003.2
50°	821.5	848.2	896.1	935.6	944.1
52.5°	762.3	790.5	841.2	883.5	887.7
55°	700.3	731.3	784.8	825.7	834.2
57.5°	643.9	670.7	728.5	770.7	780.6
60°	581.9	611.5	673.5	713.0	725.7
62.5°	522.8	553.8	618.6	658.0	669.3
65°	460.8	496.0	559.4	605.9	617.2
67.5°	407.2	441.0	508.7	553.8	565.0
70°	345.2	383.3	455.1	501.6	512.9
72.5°	291.7	331.1	403.0	448.1	465.0
75°	233.9	279.0	350.9	398.8	410.0
77.5°	177.5	229.7	302.9	339.6	339.6
80°	126.8	181.8	249.4	266.3	269.1
82.5°	83.1	136.7	184.6	183.2	183.2
85°	47.9	88.8	109.9	107.1	107.1
87.5°	18.3	36.6	39.5	39.5	38.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)