

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: P311304

Luminaire Tested: **24FCZ2-35-UNV-L82765-S-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: P311304  
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: 24FCZ2-35-UNV-L82765-S-CA08-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET  
Light Source: (168) 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

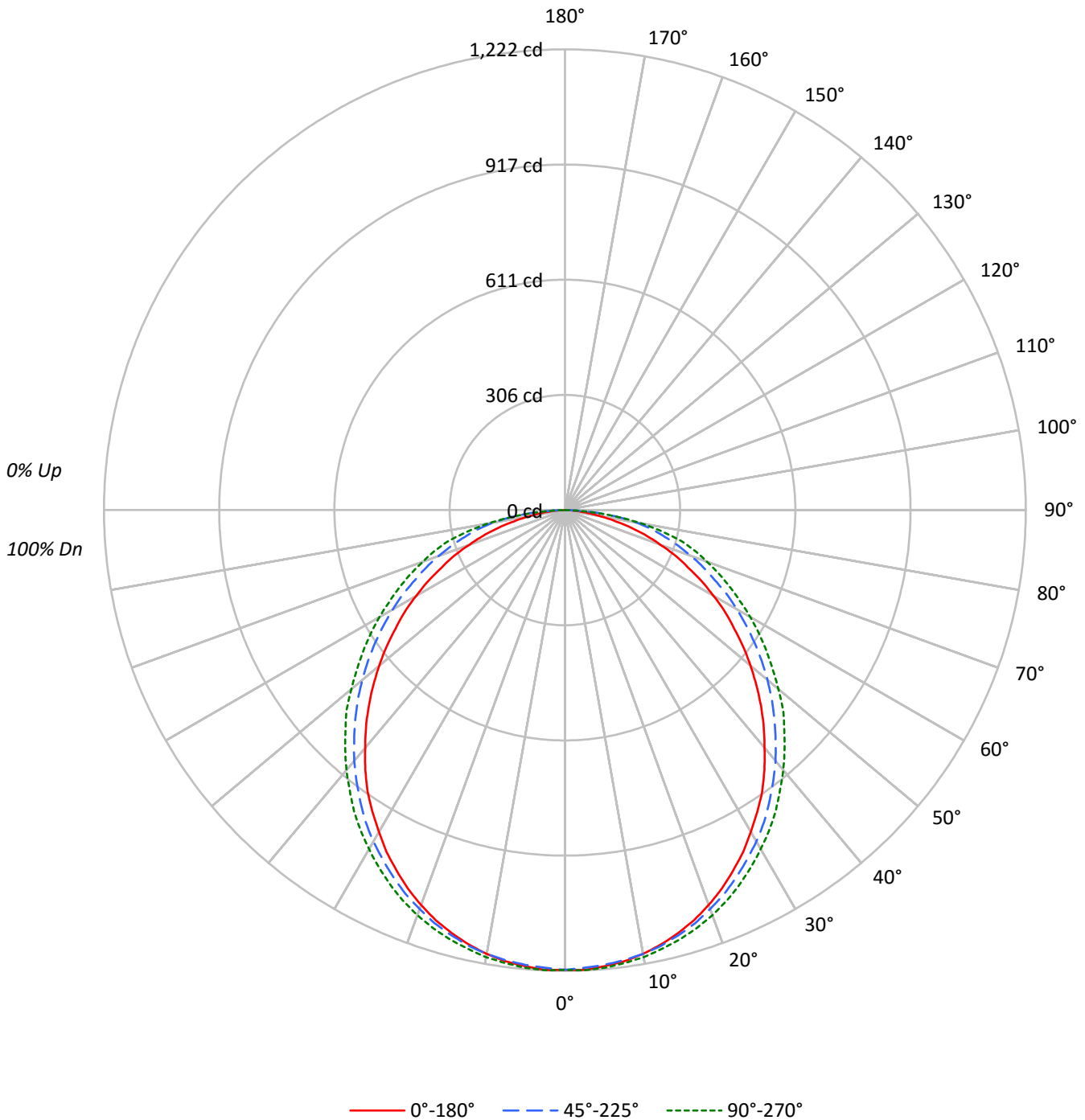
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3471.0 lumens  
Efficiency: N/A  
Efficacy: 121.8 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): 28.5  
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°	1641	1641	1641
5°	1640	1635	1645
10°	1633	1633	1645
15°	1617	1625	1642
20°	1596	1612	1637
25°	1566	1596	1627
30°	1531	1578	1614
35°	1498	1552	1601
40°	1447	1526	1582
45°	1399	1496	1565
50°	1346	1468	1546
55°	1285	1441	1531
60°	1225	1418	1528
65°	1148	1394	1537
70°	1063	1401	1579
75°	951	1427	1668
80°	769	1512	1632
85°	579	1328	1294



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	115.4	3.3
10°-20°	329.9	9.5
20°-30°	495.8	14.3
30°-40°	590.6	17.0
40°-50°	604.5	17.4
50°-60°	544.2	15.7
60°-70°	427.4	12.3
70°-80°	277.4	8.0
80°-90°	85.8	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°	941.1	27.1
0°-40°	1531.8	44.1
0°-60°	2680.5	77.2
0°-90°	3471.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3471.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1219	1219	1219	1219	1219	
5°	1214	1216	1211	1217	1218	115
15°	1161	1164	1166	1176	1179	327
25°	1055	1064	1075	1093	1096	486
35°	912	923	945	968	975	569
45°	735	753	786	816	822	567
55°	548	572	614	646	653	491
65°	360	388	438	474	483	359
75°	183	218	274	312	321	194
85°	38	70	86	84	84	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1219.4	1219.4	1219.4	1219.4	1219.4
2.5°	1220.5	1220.5	1215.0	1220.5	1221.6
5°	1213.9	1216.1	1210.6	1217.2	1218.3
7.5°	1207.3	1207.3	1203.9	1210.6	1211.7
10°	1195.1	1196.2	1195.1	1202.8	1203.9
12.5°	1179.7	1181.9	1183.0	1190.7	1191.8
15°	1161.0	1164.3	1166.5	1176.4	1178.6
17.5°	1140.0	1143.3	1148.8	1159.8	1162.1
20°	1114.6	1119.1	1125.7	1140.0	1143.3
22.5°	1087.1	1091.5	1102.5	1115.7	1121.3
25°	1055.1	1063.9	1075.0	1092.6	1095.9
27.5°	1023.1	1030.9	1045.2	1063.9	1068.3
30°	985.7	997.8	1015.4	1034.2	1038.6
32.5°	949.3	961.4	982.3	1002.2	1007.7
35°	911.8	922.8	944.9	968.0	974.6
37.5°	868.8	883.1	907.4	930.5	937.1
40°	823.6	841.2	868.8	893.0	900.8
42.5°	780.6	799.3	826.9	853.3	862.2
45°	735.4	753.0	786.1	815.9	822.5
47.5°	689.1	708.9	744.2	774.0	785.0
50°	642.8	663.7	701.2	732.1	738.7
52.5°	596.5	618.5	658.2	691.3	694.6
55°	548.0	572.2	614.1	646.1	652.7
57.5°	503.9	524.8	570.0	603.1	610.8
60°	455.3	478.5	527.0	557.9	567.8
62.5°	409.0	433.3	484.0	514.9	523.7
65°	360.5	388.1	437.7	474.1	482.9
67.5°	318.6	345.1	398.0	433.3	442.1
70°	270.1	299.9	356.1	392.5	401.3
72.5°	228.2	259.1	315.3	350.6	363.8
75°	183.0	218.3	274.5	312.0	320.8
77.5°	138.9	179.7	237.0	265.7	265.7
80°	99.2	142.2	195.1	208.4	210.6
82.5°	65.0	106.9	144.4	143.3	143.3
85°	37.5	69.5	86.0	83.8	83.8
87.5°	14.3	28.7	30.9	30.9	29.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)