

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: P311331

Luminaire Tested: **24FCZ2-35-UNV-L82765-S-CP187-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: P311331  
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-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB 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**

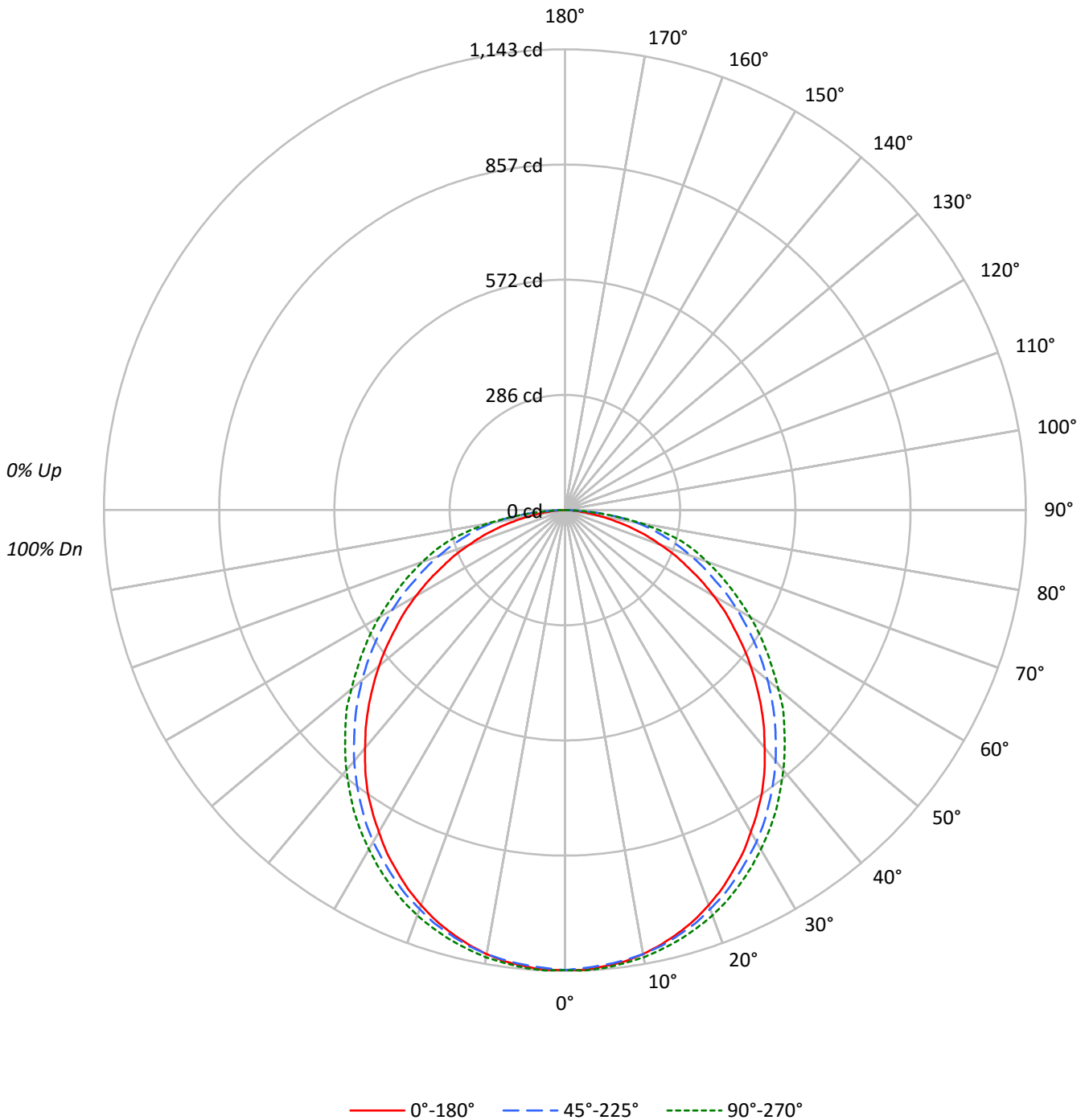
Lumens per Lamp: N/A  
Luminaire Lumens: 3248.0 lumens  
Efficiency: N/A  
Efficacy: 114.0 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 28.5  
Input Voltage (V): NR  
Input Current (A<sub>in</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°	1535	1535	1535
5°	1534	1530	1540
10°	1528	1528	1539
15°	1513	1520	1536
20°	1493	1508	1532
25°	1466	1493	1522
30°	1433	1476	1510
35°	1401	1452	1498
40°	1354	1428	1480
45°	1309	1400	1464
50°	1259	1374	1447
55°	1203	1348	1433
60°	1147	1327	1430
65°	1074	1304	1439
70°	995	1311	1477
75°	891	1336	1561
80°	720	1415	1527
85°	542	1243	1210



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.0	3.3
10°-20°	308.7	9.5
20°-30°	464.0	14.3
30°-40°	552.7	17.0
40°-50°	565.6	17.4
50°-60°	509.2	15.7
60°-70°	399.9	12.3
70°-80°	259.6	8.0
80°-90°	80.3	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°	880.7	27.1
0°-40°	1433.4	44.1
0°-60°	2508.3	77.2
0°-90°	3248.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3248.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1141	1141	1141	1141	1141	
5°	1136	1138	1133	1139	1140	108
15°	1086	1090	1092	1101	1103	306
25°	987	996	1006	1022	1026	455
35°	853	864	884	906	912	532
45°	688	705	736	763	770	531
55°	513	535	575	605	611	460
65°	337	363	410	444	452	336
75°	171	204	257	292	300	181
85°	35	65	80	78	78	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1141.0	1141.0	1141.0	1141.0	1141.0
2.5°	1142.1	1142.1	1136.9	1142.1	1143.1
5°	1135.9	1137.9	1132.8	1139.0	1140.0
7.5°	1129.7	1129.7	1126.6	1132.8	1133.8
10°	1118.3	1119.4	1118.3	1125.6	1126.6
12.5°	1103.9	1106.0	1107.0	1114.2	1115.3
15°	1086.4	1089.5	1091.5	1100.8	1102.9
17.5°	1066.8	1069.9	1075.0	1085.3	1087.4
20°	1043.0	1047.2	1053.4	1066.8	1069.9
22.5°	1017.2	1021.4	1031.7	1044.1	1049.2
25°	987.3	995.6	1005.9	1022.4	1025.5
27.5°	957.4	964.6	978.0	995.6	999.7
30°	922.3	933.7	950.2	967.7	971.8
32.5°	888.3	899.6	919.2	937.8	943.0
35°	853.2	863.5	884.2	905.8	912.0
37.5°	813.0	826.4	849.1	870.7	876.9
40°	770.7	787.2	813.0	835.7	842.9
42.5°	730.4	748.0	773.8	798.5	806.8
45°	688.1	704.6	735.6	763.4	769.6
47.5°	644.8	663.4	696.4	724.2	734.6
50°	601.5	621.1	656.2	685.0	691.2
52.5°	558.1	578.8	615.9	646.9	650.0
55°	512.7	535.4	574.6	604.6	610.8
57.5°	471.5	491.1	533.4	564.3	571.6
60°	426.1	447.8	493.1	522.0	531.3
62.5°	382.8	405.5	452.9	481.8	490.1
65°	337.4	363.2	409.6	443.6	451.9
67.5°	298.2	322.9	372.4	405.5	413.7
70°	252.8	280.6	333.2	367.3	375.5
72.5°	213.6	242.4	295.1	328.1	340.5
75°	171.3	204.3	256.9	292.0	300.2
77.5°	130.0	168.2	221.8	248.6	248.6
80°	92.9	133.1	182.6	195.0	197.1
82.5°	60.9	100.1	135.2	134.1	134.1
85°	35.1	65.0	80.5	78.4	78.4
87.5°	13.4	26.8	28.9	28.9	27.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)