

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: P310161

Luminaire Tested: **24FCZ2-45-UNV-L82765-RDP-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: P310161  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: 24FCZ2-45-UNV-L82765-RDP-CP187-W2A-U-4500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS WITH INSERT, 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: 2649.0 lumens  
Efficiency: N/A  
Efficacy: 69.2 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

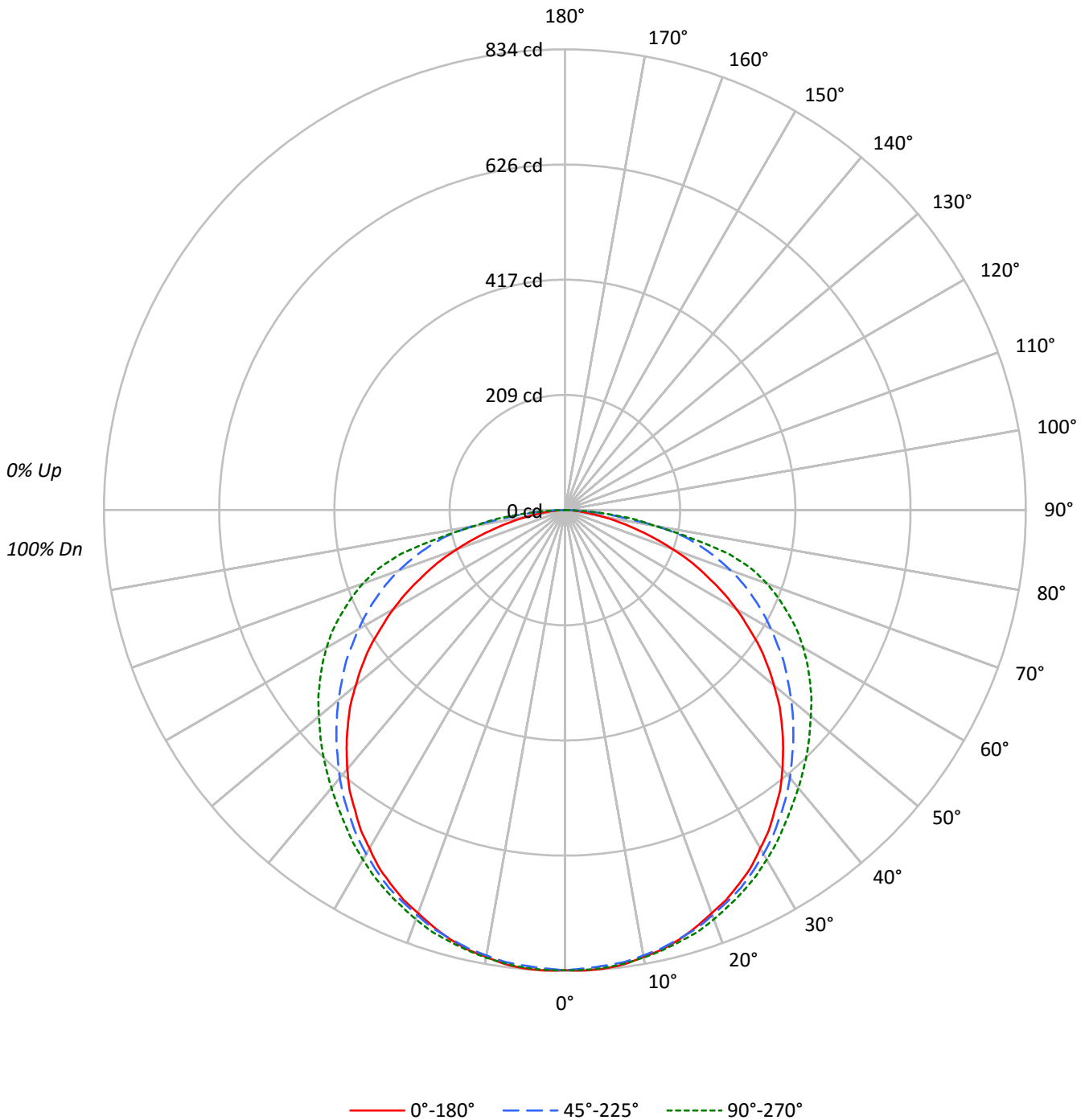
Input Watts (W): 38.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	93	89	92	89	87	88	86	84	82
2	97	89	81	75	95	87	80	74	83	77	72	80	75	71	77	73	69	67
3	88	77	68	62	86	76	67	61	72	66	60	70	64	59	67	62	58	56
4	81	68	59	52	78	67	58	51	64	57	51	62	55	50	59	54	49	47
5	74	60	51	44	72	59	51	44	57	49	43	55	48	43	53	47	42	40
6	68	54	45	38	66	53	45	38	51	44	38	50	43	37	48	42	37	35
7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29	27
9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	37	31	26	24
10	51	38	30	24	50	37	29	24	36	29	24	35	29	24	34	28	24	22

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	1121	1121	1121
5°	1125	1118	1123
10°	1122	1118	1124
15°	1120	1118	1126
20°	1112	1118	1129
25°	1108	1120	1131
30°	1098	1117	1135
35°	1088	1114	1140
40°	1075	1112	1154
45°	1058	1113	1180
50°	1034	1119	1216
55°	1008	1137	1270
60°	965	1160	1340
65°	904	1201	1422
70°	822	1256	1530
75°	697	1325	1599
80°	550	1333	1293
85°	406	1014	1136



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.0	3.0
10°-20°	227.4	8.6
20°-30°	347.8	13.1
30°-40°	425.1	16.0
40°-50°	453.1	17.1
50°-60°	433.2	16.4
60°-70°	367.0	13.9
70°-80°	246.7	9.3
80°-90°	69.6	2.6
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°	654.2	24.7
0°-40°	1079.4	40.7
0°-60°	1965.7	74.2
0°-90°	2649.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2649.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	833	833	833	833	833	
5°	833	832	828	832	832	79
15°	804	804	803	809	808	227
25°	746	749	754	761	762	344
35°	662	668	678	691	694	415
45°	556	565	585	610	620	429
55°	430	445	485	523	541	383
65°	284	313	377	427	447	282
75°	134	183	255	298	308	144
85°	26	54	66	71	74	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	833.0	833.0	833.0	833.0	833.0
2.5°	834.3	834.3	830.4	833.0	833.0
5°	833.0	831.7	827.8	831.7	831.7
7.5°	829.1	827.8	825.2	829.1	827.8
10°	821.2	821.2	818.6	822.5	822.5
12.5°	814.6	813.3	812.0	817.3	816.0
15°	804.1	804.1	802.8	809.4	808.1
17.5°	791.0	792.3	793.6	798.9	800.2
20°	776.5	779.2	780.5	788.4	788.4
22.5°	763.4	764.7	767.3	775.2	775.2
25°	746.3	748.9	754.2	760.8	762.1
27.5°	729.2	730.5	737.1	746.3	747.6
30°	706.9	710.8	718.7	729.2	730.5
32.5°	687.2	691.1	700.3	710.8	713.5
35°	662.2	667.5	678.0	691.1	693.8
37.5°	639.9	643.8	657.0	671.4	675.4
40°	612.3	620.2	633.3	650.4	657.0
42.5°	584.7	592.6	608.4	630.7	638.6
45°	555.8	565.0	584.7	609.7	620.2
47.5°	526.9	537.4	559.7	588.6	600.5
50°	494.0	507.2	534.8	567.6	580.8
52.5°	462.5	478.3	508.5	545.3	562.4
55°	429.7	445.4	484.8	522.9	541.3
57.5°	392.9	413.9	457.2	500.6	520.3
60°	358.7	378.4	431.0	478.3	498.0
62.5°	321.9	348.2	404.7	454.6	474.3
65°	283.8	312.7	377.1	427.0	446.7
67.5°	249.6	281.2	349.5	399.4	419.1
70°	208.9	248.3	319.3	369.2	388.9
72.5°	170.8	214.2	287.8	336.4	354.8
75°	134.0	182.6	254.9	298.3	307.5
77.5°	99.9	151.1	220.7	239.1	232.6
80°	71.0	120.9	172.1	162.9	166.9
82.5°	46.0	92.0	106.4	120.9	124.8
85°	26.3	53.9	65.7	71.0	73.6
87.5°	11.8	19.7	26.3	26.3	25.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)