

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: P313980

Luminaire Tested: **24FCZ2-45-UNV-L83050-CP187-W2A-U-3000K**

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: P313980  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)  
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-L83050-CP187-W2A-U-3000K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET  
Light Source: (168) 3000K 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

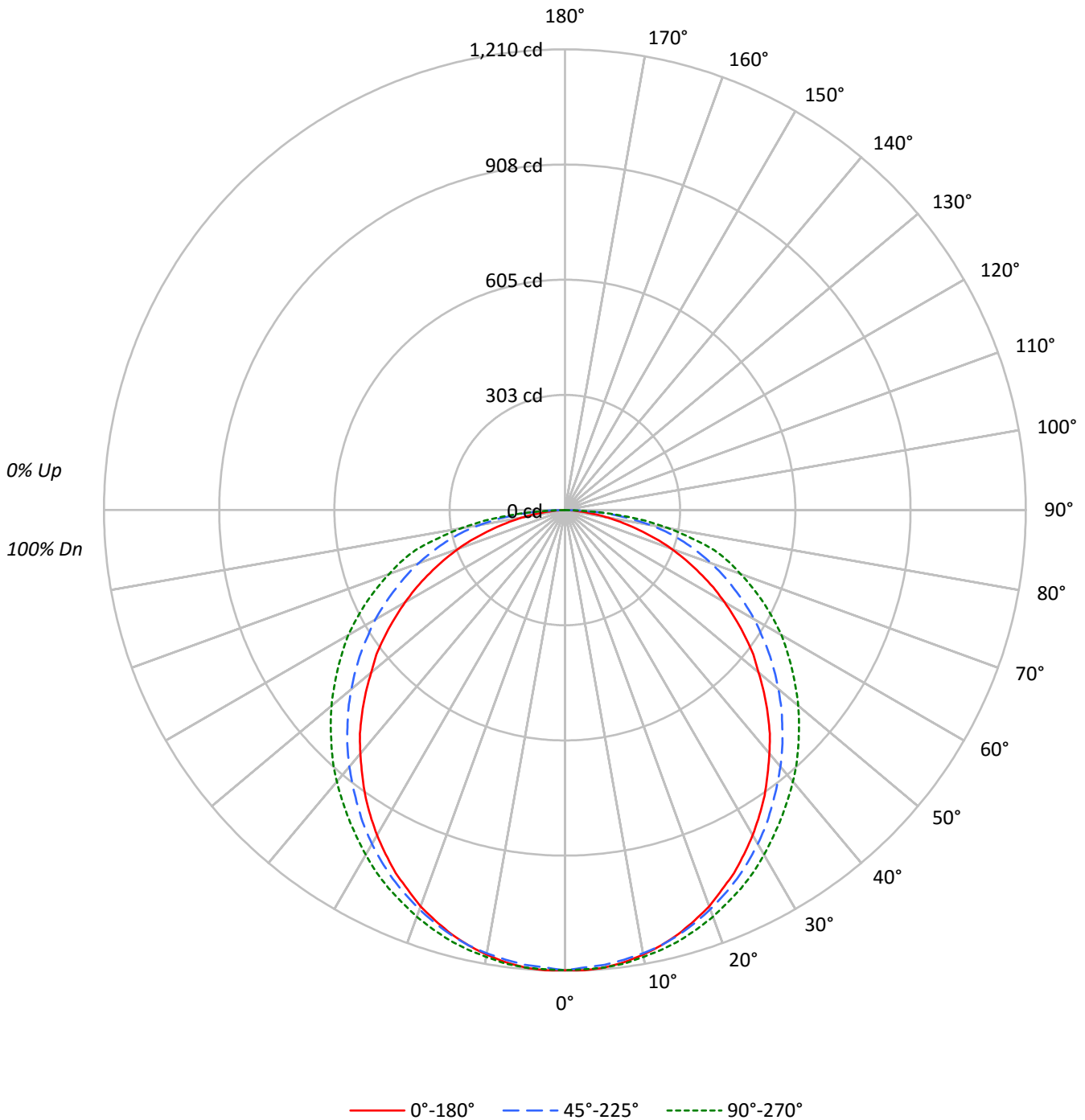
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3664.0 lumens  
Efficiency: N/A  
Efficacy: 97.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 37.5  
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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

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

	0°	45°	90°
0°	1626	1626	1626
5°	1629	1619	1629
10°	1619	1614	1628
15°	1605	1609	1629
20°	1586	1598	1627
25°	1561	1586	1626
30°	1532	1573	1624
35°	1502	1557	1625
40°	1467	1546	1636
45°	1432	1536	1649
50°	1389	1532	1674
55°	1354	1534	1708
60°	1302	1547	1767
65°	1242	1564	1831
70°	1176	1612	1932
75°	1049	1681	2111
80°	895	1781	2157
85°	638	1765	2064



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	114.4	3.1
10°-20°	327.0	8.9
20°-30°	493.9	13.5
30°-40°	595.2	16.2
40°-50°	624.9	17.1
50°-60°	584.6	16.0
60°-70°	482.8	13.2
70°-80°	329.0	9.0
80°-90°	112.2	3.1
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°	935.2	25.5
0°-40°	1530.5	41.8
0°-60°	2740.0	74.8
0°-90°	3664.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3664.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1208	1208	1208	1208	1208	
5°	1206	1205	1199	1206	1206	114
15°	1152	1154	1155	1167	1170	325
25°	1052	1056	1069	1089	1095	484
35°	914	924	948	980	990	571
45°	752	768	807	851	867	580
55°	577	600	654	708	728	515
65°	390	423	491	553	575	387
75°	202	248	323	384	406	215
85°	41	81	114	129	134	52
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1208.4	1208.4	1208.4	1208.4	1208.4
2.5°	1209.6	1208.4	1202.3	1208.4	1207.1
5°	1205.9	1204.7	1198.6	1205.9	1205.9
7.5°	1197.4	1197.4	1191.3	1199.8	1201.1
10°	1185.3	1185.3	1181.6	1191.3	1191.3
12.5°	1170.7	1170.7	1170.7	1180.4	1181.6
15°	1152.4	1153.7	1154.9	1167.0	1169.5
17.5°	1130.6	1133.0	1136.6	1151.2	1153.7
20°	1107.5	1109.9	1116.0	1133.0	1136.6
22.5°	1078.3	1084.4	1092.9	1112.3	1116.0
25°	1051.5	1056.4	1068.6	1089.2	1095.3
27.5°	1018.7	1026.0	1041.8	1063.7	1072.2
30°	985.9	993.2	1012.6	1038.2	1045.5
32.5°	950.6	961.6	982.2	1009.0	1017.5
35°	914.2	923.9	948.2	979.8	989.5
37.5°	874.1	887.4	914.2	948.2	960.4
40°	835.2	849.7	880.1	916.6	931.2
42.5°	796.3	810.8	844.9	886.2	900.8
45°	752.5	768.3	807.2	851.0	866.8
47.5°	708.7	728.2	770.7	816.9	833.9
50°	663.7	685.6	731.8	780.4	799.9
52.5°	623.6	644.3	692.9	745.2	763.4
55°	577.4	600.5	654.0	707.5	728.2
57.5°	530.0	555.6	612.7	671.0	691.7
60°	483.8	511.8	575.0	633.4	656.5
62.5°	438.8	466.8	532.5	593.2	616.3
65°	390.2	423.0	491.1	553.1	575.0
67.5°	344.0	379.3	451.0	511.8	533.7
70°	299.0	333.1	409.7	469.2	491.1
72.5°	250.4	289.3	365.9	427.9	451.0
75°	201.8	248.0	323.4	384.1	406.0
77.5°	156.8	204.2	279.6	329.4	340.4
80°	115.5	164.1	229.8	265.0	278.4
82.5°	74.2	122.8	175.1	200.6	211.5
85°	41.3	81.4	114.3	128.9	133.7
87.5°	17.0	35.3	46.2	52.3	52.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)