

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: P313955

Luminaire Tested: **24FCZ2-45HE-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: P313955  
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: 24FCZ2-45HE-UNV-L83050-CP187-W2A-U-3000K  
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET  
Light Source: (336) 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**

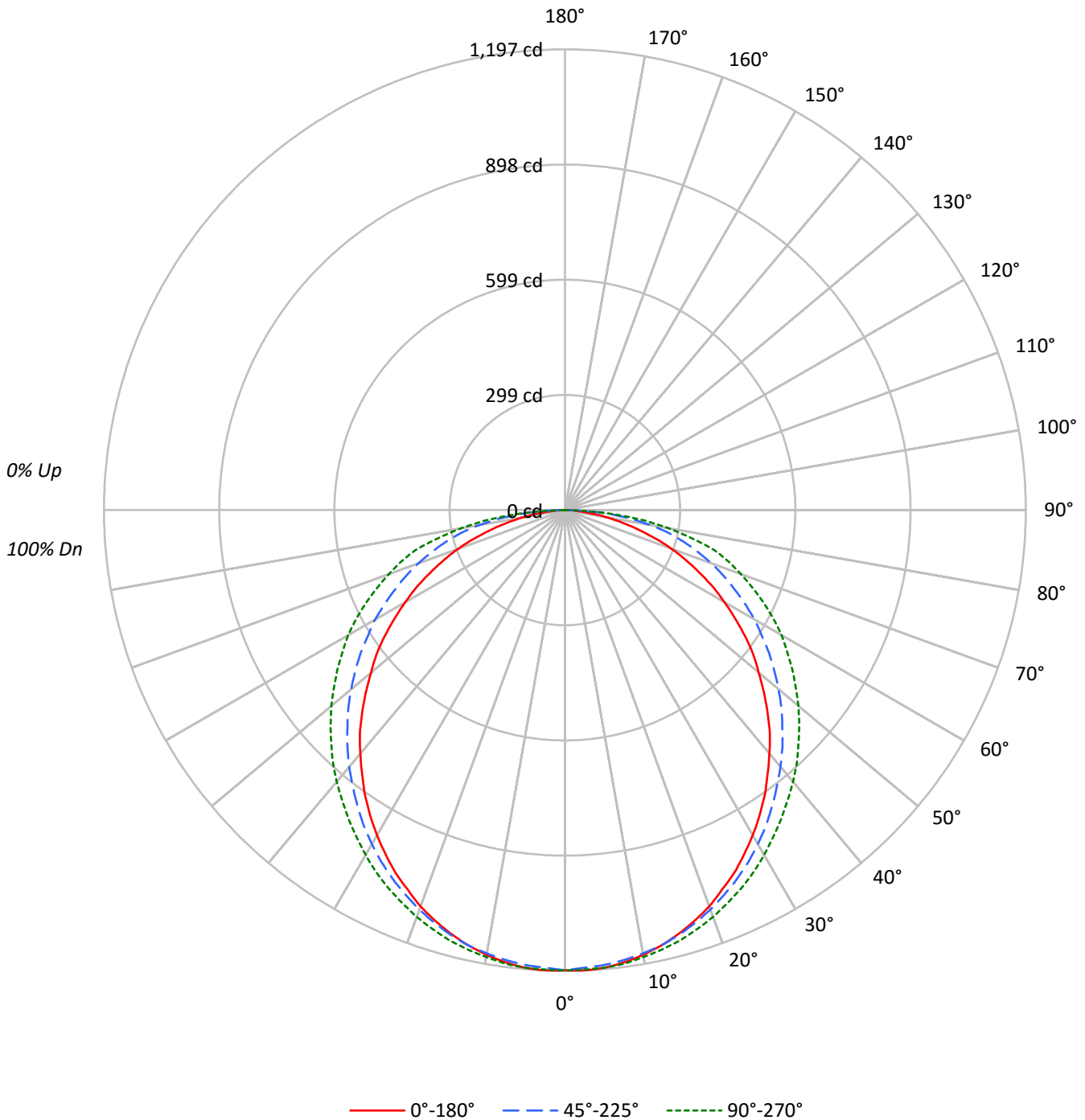
Lumens per Lamp: N/A  
Luminaire Lumens: 3626.0 lumens  
Efficiency: N/A  
Efficacy: 107.6 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.29 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (A<sub>in</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	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	100	100	100	100	100		
	1	108	103	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82	82	82	82	82	82		
	2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67	67	67	67	67	67		
	3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56	56	56	56	56	56		
	4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47	47	47	47	47	47		
	5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41	41	41	41	41	41		
	6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36	36	36	36	36	36		
	7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31	31	31	31	31	31		
	8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28	28	28	28	28	28		
	9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25	25	25	25	25	25		
	10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23	23	23	23	23	23		

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

	0°	45°	90°
0°	1609	1609	1609
5°	1612	1602	1612
10°	1603	1598	1611
15°	1589	1592	1612
20°	1569	1581	1611
25°	1545	1570	1609
30°	1516	1557	1607
35°	1486	1541	1609
40°	1452	1530	1619
45°	1417	1520	1632
50°	1375	1516	1657
55°	1340	1518	1690
60°	1288	1531	1748
65°	1230	1547	1812
70°	1164	1595	1912
75°	1038	1664	2089
80°	886	1762	2135
85°	631	1746	2042



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	113.2	3.1
10°-20°	323.6	8.9
20°-30°	488.8	13.5
30°-40°	589.1	16.2
40°-50°	618.4	17.1
50°-60°	578.6	16.0
60°-70°	477.8	13.2
70°-80°	325.6	9.0
80°-90°	111.0	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°	925.5	25.5
0°-40°	1514.6	41.8
0°-60°	2711.6	74.8
0°-90°	3626.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3626.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1196	1196	1196	1196	1196	
5°	1193	1192	1186	1193	1193	113
15°	1140	1142	1143	1155	1157	321
25°	1041	1045	1058	1078	1084	479
35°	905	914	938	970	979	565
45°	745	760	799	842	858	574
55°	571	594	647	700	721	510
65°	386	419	486	547	569	383
75°	200	245	320	380	402	213
85°	41	81	113	128	132	51
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1195.8	1195.8	1195.8	1195.8	1195.8
2.5°	1197.0	1195.8	1189.8	1195.8	1194.6
5°	1193.4	1192.2	1186.2	1193.4	1193.4
7.5°	1185.0	1185.0	1179.0	1187.4	1188.6
10°	1173.0	1173.0	1169.4	1179.0	1179.0
12.5°	1158.5	1158.5	1158.5	1168.2	1169.4
15°	1140.5	1141.7	1142.9	1154.9	1157.3
17.5°	1118.8	1121.2	1124.8	1139.3	1141.7
20°	1096.0	1098.4	1104.4	1121.2	1124.8
22.5°	1067.1	1073.1	1081.5	1100.8	1104.4
25°	1040.6	1045.4	1057.5	1077.9	1083.9
27.5°	1008.1	1015.4	1031.0	1052.7	1061.1
30°	975.7	982.9	1002.1	1027.4	1034.6
32.5°	940.8	951.6	972.1	998.5	1006.9
35°	904.7	914.3	938.4	969.7	979.3
37.5°	865.0	878.2	904.7	938.4	950.4
40°	826.5	840.9	871.0	907.1	921.5
42.5°	788.0	802.4	836.1	877.0	891.5
45°	744.7	760.3	798.8	842.1	857.8
47.5°	701.4	720.6	762.7	808.4	825.3
50°	656.9	678.5	724.2	772.4	791.6
52.5°	617.2	637.6	685.7	737.5	755.5
55°	571.4	594.3	647.2	700.2	720.6
57.5°	524.5	549.8	606.3	664.1	684.5
60°	478.8	506.5	569.0	626.8	649.6
62.5°	434.3	462.0	526.9	587.1	609.9
65°	386.2	418.7	486.0	547.4	569.0
67.5°	340.5	375.3	446.3	506.5	528.1
70°	295.9	329.6	405.4	464.4	486.0
72.5°	247.8	286.3	362.1	423.5	446.3
75°	199.7	245.4	320.0	380.2	401.8
77.5°	155.2	202.1	276.7	326.0	336.9
80°	114.3	162.4	227.4	262.3	275.5
82.5°	73.4	121.5	173.2	198.5	209.3
85°	40.9	80.6	113.1	127.5	132.3
87.5°	16.8	34.9	45.7	51.7	51.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)