

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: P313231

Luminaire Tested: **24FCZ2-45-UNV-L83050-HRP-CP187-W2A-U-3500K**

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: P313231  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)  
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-HRP-CP187-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"  
POLYCARB SHEET  
Light Source: (168) 3500K 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**

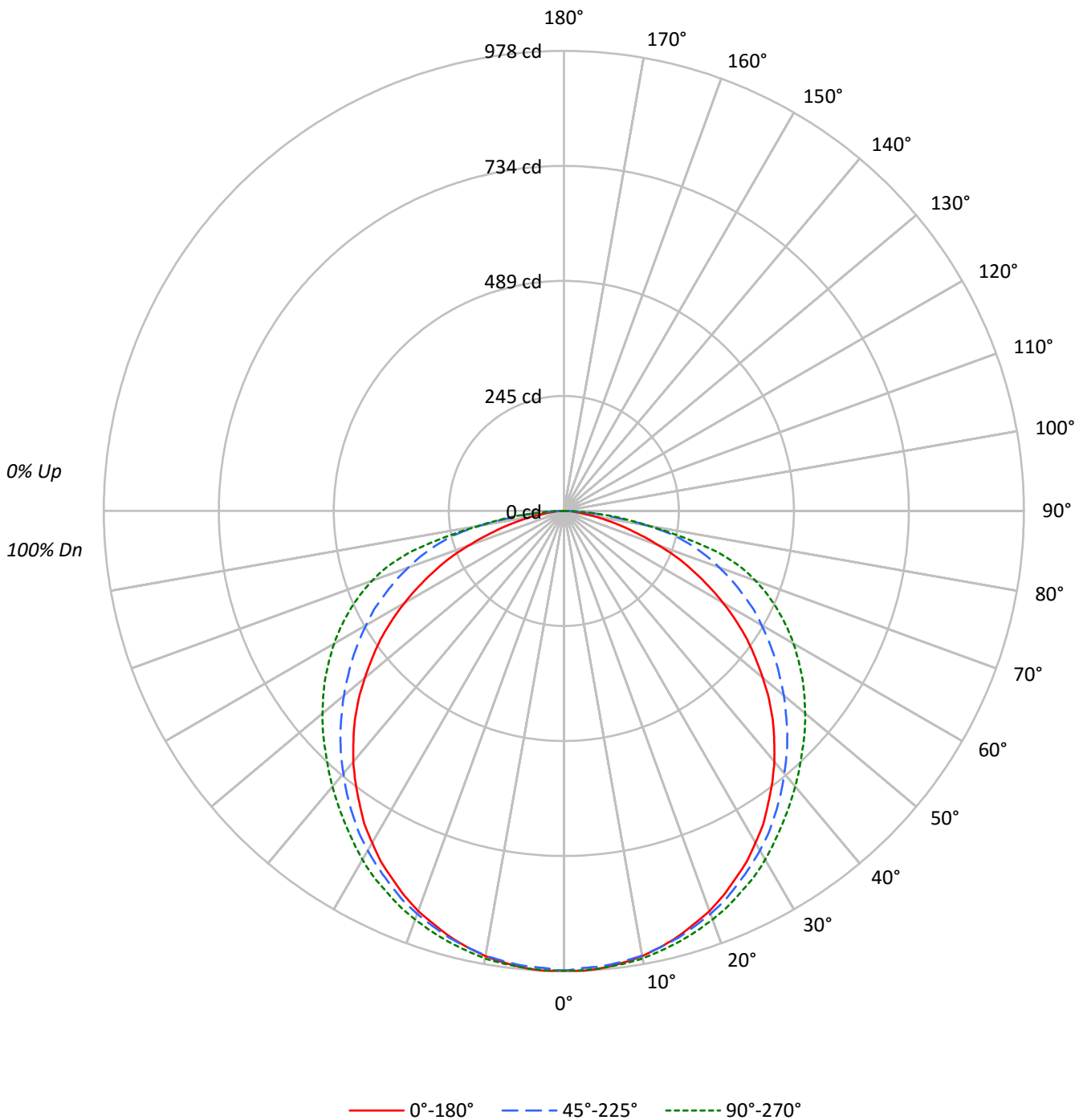
Lumens per Lamp: N/A  
Luminaire Lumens: 3012.0 lumens  
Efficiency: N/A  
Efficacy: 80.1 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 37.6  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	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	24	35	29	24	23

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

	0°	45°	90°
0°	1315	1315	1315
5°	1316	1311	1316
10°	1313	1311	1320
15°	1305	1309	1321
20°	1296	1305	1323
25°	1280	1299	1325
30°	1266	1295	1330
35°	1245	1288	1332
40°	1223	1280	1344
45°	1195	1279	1365
50°	1156	1277	1402
55°	1115	1287	1452
60°	1052	1306	1517
65°	972	1337	1602
70°	848	1384	1707
75°	688	1455	1763
80°	508	1426	1426
85°	389	1051	1187



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.6	3.1
10°-20°	265.8	8.8
20°-30°	404.7	13.4
30°-40°	491.4	16.3
40°-50°	519.2	17.2
50°-60°	489.9	16.3
60°-70°	407.3	13.5
70°-80°	268.0	8.9
80°-90°	73.1	2.4
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°	763.1	25.3
0°-40°	1254.5	41.7
0°-60°	2263.6	75.2
0°-90°	3012.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3012.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	977	977	977	977	977	
5°	975	975	971	975	975	93
15°	937	938	939	948	948	264
25°	862	868	875	890	893	398
35°	758	767	784	804	811	474
45°	628	641	672	705	718	484
55°	475	496	548	600	619	423
65°	305	340	420	482	503	302
75°	132	193	280	332	339	143
85°	25	56	68	76	77	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	977.2	977.2	977.2	977.2	977.2
2.5°	978.5	977.2	972.2	977.2	977.2
5°	974.7	974.7	970.9	974.7	974.7
7.5°	968.4	968.4	965.9	970.9	970.9
10°	960.9	960.9	959.6	965.9	965.9
12.5°	949.5	950.8	949.5	957.1	957.1
15°	936.9	938.2	939.4	948.2	948.2
17.5°	920.5	923.0	925.5	935.6	936.9
20°	905.4	906.6	911.7	923.0	924.3
22.5°	885.2	889.0	895.3	906.6	910.4
25°	862.5	867.5	875.1	890.2	892.8
27.5°	841.1	844.8	854.9	871.3	876.4
30°	814.6	820.9	833.5	849.9	856.2
32.5°	789.4	795.7	810.8	828.5	833.5
35°	757.8	766.7	784.3	804.5	810.8
37.5°	727.6	736.4	757.8	780.5	788.1
40°	696.1	706.1	728.8	755.3	765.4
42.5°	662.0	675.9	701.1	730.1	741.4
45°	628.0	640.6	672.1	704.9	717.5
47.5°	591.4	606.5	640.6	679.7	694.8
50°	552.3	571.2	610.3	653.2	669.6
52.5°	513.2	534.6	578.8	626.7	644.4
55°	475.4	495.6	548.5	600.2	619.1
57.5°	433.8	459.0	517.0	572.5	591.4
60°	390.9	418.6	485.5	543.5	563.7
62.5°	348.0	379.5	455.2	513.2	534.6
65°	305.2	340.5	419.9	481.7	503.1
67.5°	263.5	302.6	387.1	448.9	470.3
70°	215.6	264.8	351.8	412.3	433.8
72.5°	171.5	228.2	317.8	374.5	393.4
75°	132.4	192.9	279.9	331.6	339.2
77.5°	97.1	157.6	240.8	258.5	259.8
80°	65.6	126.1	184.1	181.6	184.1
82.5°	42.9	94.6	116.0	129.9	131.1
85°	25.2	55.5	68.1	75.7	76.9
87.5°	12.6	18.9	24.0	25.2	27.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)