

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: P310114

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-RDP-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: P310114  
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: 24FCZ2-45HE-UNV-L82765-RDP-CP187-W2A-U-3500K  
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS WITH INSERT, 0.187" POLYCARB SHEET  
Light Source: (336) 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: 2520.0 lumens  
Efficiency: N/A  
Efficacy: 74.1 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

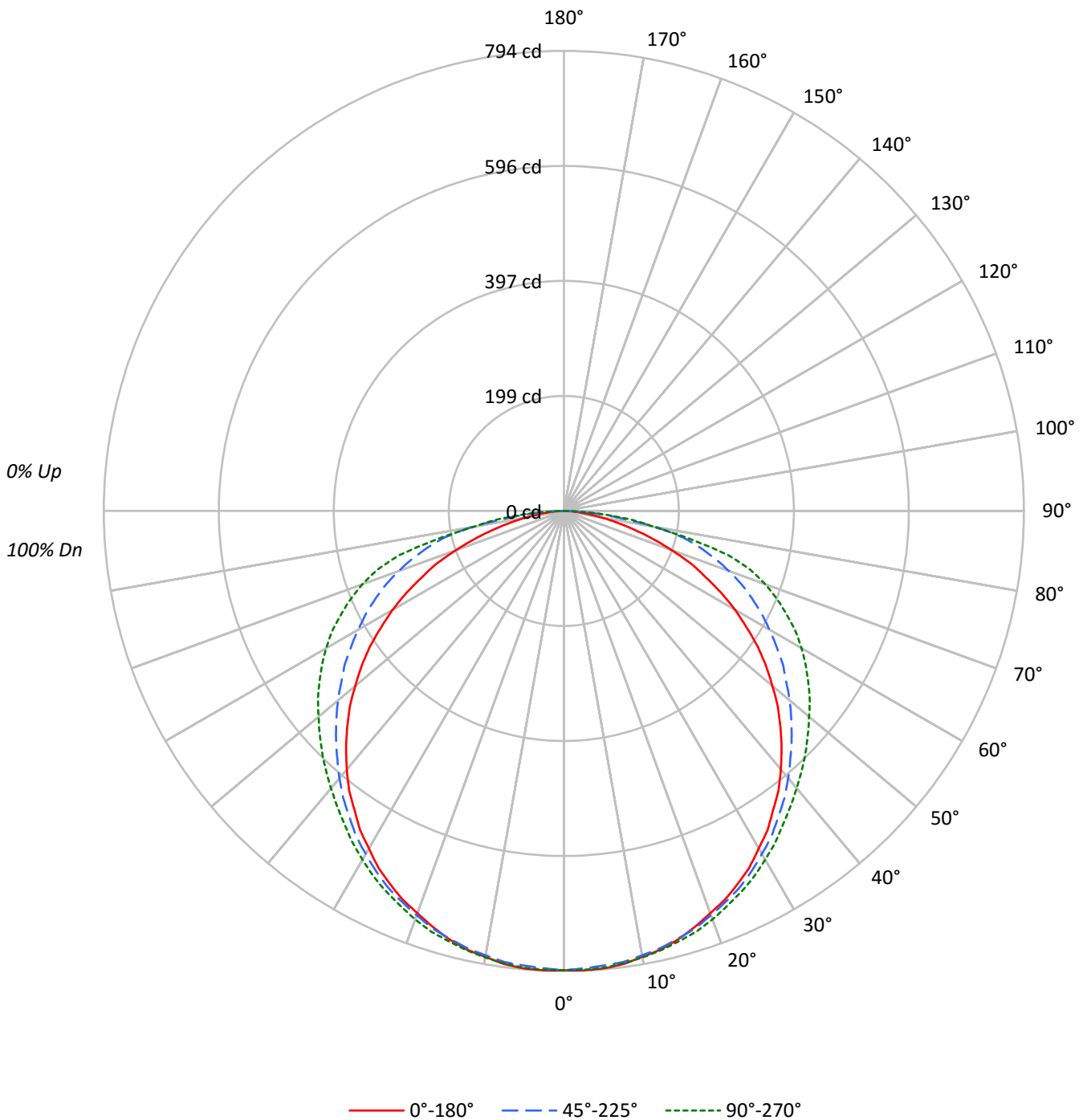
Input Watts (W): 34  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	68	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°	1066	1066	1066
5°	1070	1064	1069
10°	1067	1064	1069
15°	1066	1064	1071
20°	1058	1063	1074
25°	1054	1065	1076
30°	1045	1062	1080
35°	1035	1059	1084
40°	1023	1058	1098
45°	1006	1058	1123
50°	984	1065	1156
55°	959	1082	1208
60°	918	1103	1275
65°	860	1142	1353
70°	782	1195	1456
75°	663	1261	1521
80°	523	1268	1230
85°	386	965	1081



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.2	3.0
10°-20°	216.4	8.6
20°-30°	330.8	13.1
30°-40°	404.5	16.0
40°-50°	431.1	17.1
50°-60°	412.1	16.4
60°-70°	349.1	13.9
70°-80°	234.6	9.3
80°-90°	66.2	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°	622.4	24.7
0°-40°	1026.8	40.7
0°-60°	1870.0	74.2
0°-90°	2520.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2520.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	792	792	792	792	792	
5°	792	791	788	791	791	75
15°	765	765	764	770	769	216
25°	710	712	718	724	725	327
35°	630	635	645	658	660	395
45°	529	538	556	580	590	408
55°	409	424	461	498	515	364
65°	270	298	359	406	425	268
75°	128	174	242	284	292	137
85°	25	51	62	68	70	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	792.5	792.5	792.5	792.5	792.5
2.5°	793.7	793.7	790.0	792.5	792.5
5°	792.5	791.2	787.5	791.2	791.2
7.5°	788.7	787.5	785.0	788.7	787.5
10°	781.2	781.2	778.7	782.5	782.5
12.5°	775.0	773.7	772.5	777.5	776.2
15°	765.0	765.0	763.7	770.0	768.7
17.5°	752.5	753.7	755.0	760.0	761.2
20°	738.7	741.2	742.5	750.0	750.0
22.5°	726.2	727.5	730.0	737.5	737.5
25°	710.0	712.5	717.5	723.7	725.0
27.5°	693.7	695.0	701.2	710.0	711.2
30°	672.5	676.2	683.7	693.7	695.0
32.5°	653.7	657.5	666.2	676.2	678.7
35°	630.0	635.0	645.0	657.5	660.0
37.5°	608.7	612.5	625.0	638.7	642.5
40°	582.5	590.0	602.5	618.7	625.0
42.5°	556.2	563.7	578.7	600.0	607.5
45°	528.7	537.5	556.2	580.0	590.0
47.5°	501.2	511.2	532.5	560.0	571.2
50°	470.0	482.5	508.7	540.0	552.5
52.5°	440.0	455.0	483.7	518.7	535.0
55°	408.7	423.7	461.2	497.5	515.0
57.5°	373.7	393.7	435.0	476.2	495.0
60°	341.2	360.0	410.0	455.0	473.7
62.5°	306.2	331.2	385.0	432.5	451.2
65°	270.0	297.5	358.7	406.2	425.0
67.5°	237.5	267.5	332.5	380.0	398.7
70°	198.7	236.2	303.7	351.2	370.0
72.5°	162.5	203.7	273.7	320.0	337.5
75°	127.5	173.7	242.5	283.7	292.5
77.5°	95.0	143.7	210.0	227.5	221.2
80°	67.5	115.0	163.7	155.0	158.7
82.5°	43.7	87.5	101.2	115.0	118.7
85°	25.0	51.2	62.5	67.5	70.0
87.5°	11.2	18.7	25.0	25.0	23.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)