

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: P310112

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-RDP-CP187-W2A-U-2700K**

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: P310112
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-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS WITH INSERT, 0.187" POLYCARB SHEET
Light Source: (336) 2700K 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: 2368.0 lumens
Efficiency: N/A
Efficacy: 70.1 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

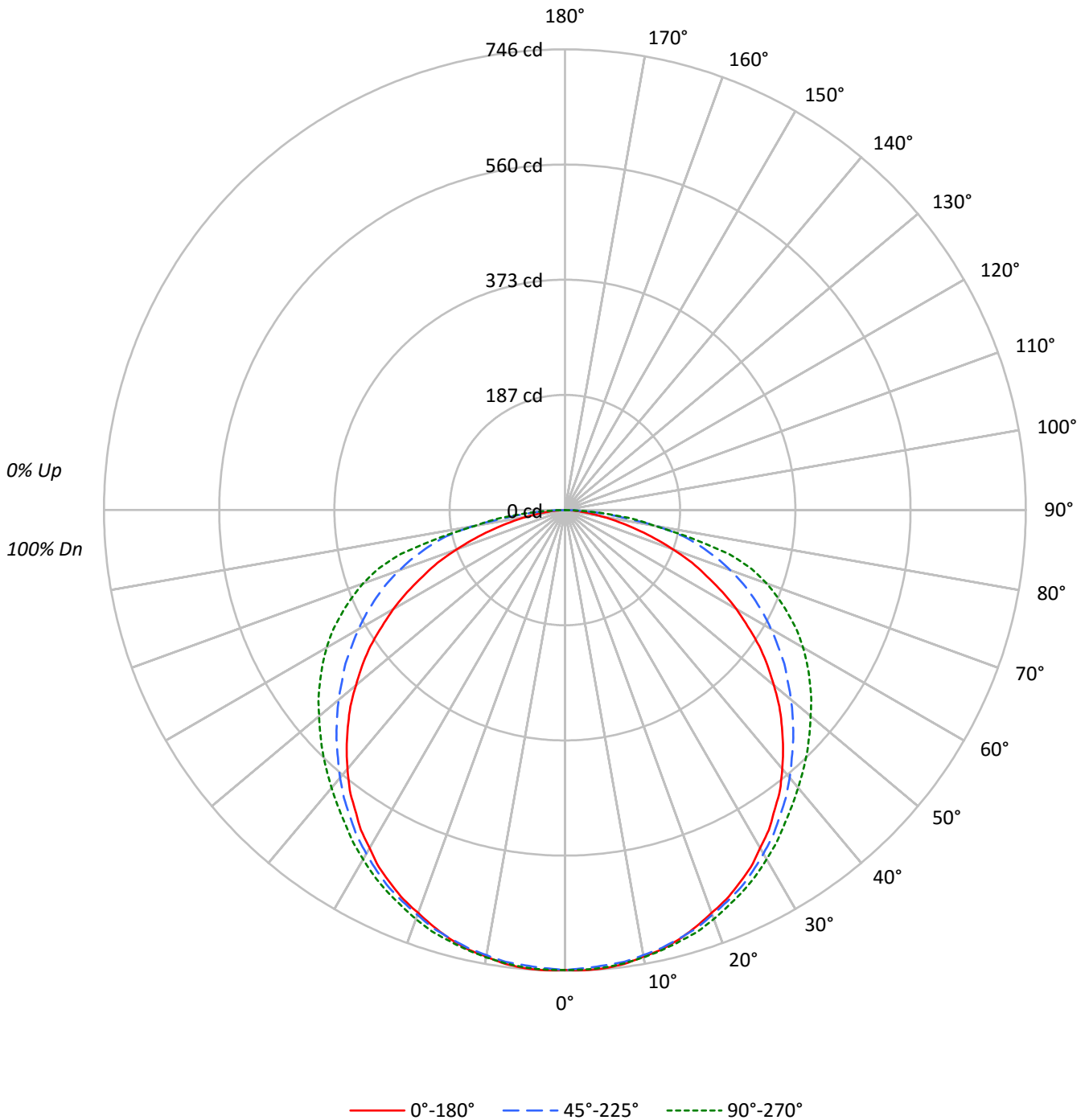
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1002	1002	1002
5°	1006	999	1004
10°	1003	1000	1005
15°	1001	1000	1006
20°	994	999	1009
25°	990	1001	1011
30°	982	998	1015
35°	972	996	1019
40°	961	994	1032
45°	945	995	1055
50°	924	1001	1087
55°	901	1017	1135
60°	863	1037	1198
65°	808	1073	1271
70°	735	1123	1368
75°	623	1185	1429
80°	491	1192	1156
85°	363	906	1016



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.6	3.0
10°-20°	203.3	8.6
20°-30°	310.9	13.1
30°-40°	380.1	16.0
40°-50°	405.1	17.1
50°-60°	387.3	16.4
60°-70°	328.1	13.9
70°-80°	220.5	9.3
80°-90°	62.2	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°	584.8	24.7
0°-40°	964.9	40.7
0°-60°	1757.2	74.2
0°-90°	2368.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2368.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	745	745	745	745	745	
5°	745	744	740	744	744	71
15°	719	719	718	724	722	203
25°	667	670	674	680	681	307
35°	592	597	606	618	620	371
45°	497	505	523	545	554	383
55°	384	398	433	468	484	342
65°	254	280	337	382	399	252
75°	120	163	228	267	275	128
85°	24	48	59	63	66	29
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	744.7	744.7	744.7	744.7	744.7
2.5°	745.8	745.8	742.3	744.7	744.7
5°	744.7	743.5	740.0	743.5	743.5
7.5°	741.1	740.0	737.6	741.1	740.0
10°	734.1	734.1	731.7	735.3	735.3
12.5°	728.2	727.1	725.9	730.6	729.4
15°	718.8	718.8	717.7	723.5	722.4
17.5°	707.1	708.3	709.4	714.1	715.3
20°	694.2	696.5	697.7	704.7	704.7
22.5°	682.4	683.6	685.9	693.0	693.0
25°	667.1	669.5	674.2	680.1	681.2
27.5°	651.9	653.1	658.9	667.1	668.3
30°	631.9	635.4	642.5	651.9	653.1
32.5°	614.3	617.8	626.0	635.4	637.8
35°	592.0	596.7	606.1	617.8	620.2
37.5°	572.0	575.5	587.3	600.2	603.7
40°	547.3	554.4	566.1	581.4	587.3
42.5°	522.7	529.7	543.8	563.8	570.8
45°	496.8	505.1	522.7	545.0	554.4
47.5°	471.0	480.4	500.4	526.2	536.8
50°	441.6	453.4	478.0	507.4	519.2
52.5°	413.4	427.5	454.6	487.4	502.7
55°	384.1	398.2	433.4	467.5	483.9
57.5°	351.2	370.0	408.7	447.5	465.1
60°	320.7	338.3	385.3	427.5	445.2
62.5°	287.8	311.3	361.8	406.4	424.0
65°	253.7	279.5	337.1	381.7	399.3
67.5°	223.2	251.4	312.4	357.1	374.7
70°	186.8	222.0	285.4	330.1	347.7
72.5°	152.7	191.5	257.2	300.7	317.1
75°	119.8	163.3	227.9	266.6	274.8
77.5°	89.3	135.1	197.3	213.8	207.9
80°	63.4	108.1	153.9	145.6	149.2
82.5°	41.1	82.2	95.1	108.1	111.6
85°	23.5	48.2	58.7	63.4	65.8
87.5°	10.6	17.6	23.5	23.5	22.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)