

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: P309411

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-HRP-CA08-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: P309411
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: 24FCZ2-45HE-UNV-L82765-HRP-CA08-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.08" ACRYLIC 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: 2937.0 lumens
Efficiency: N/A
Efficacy: 87.4 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

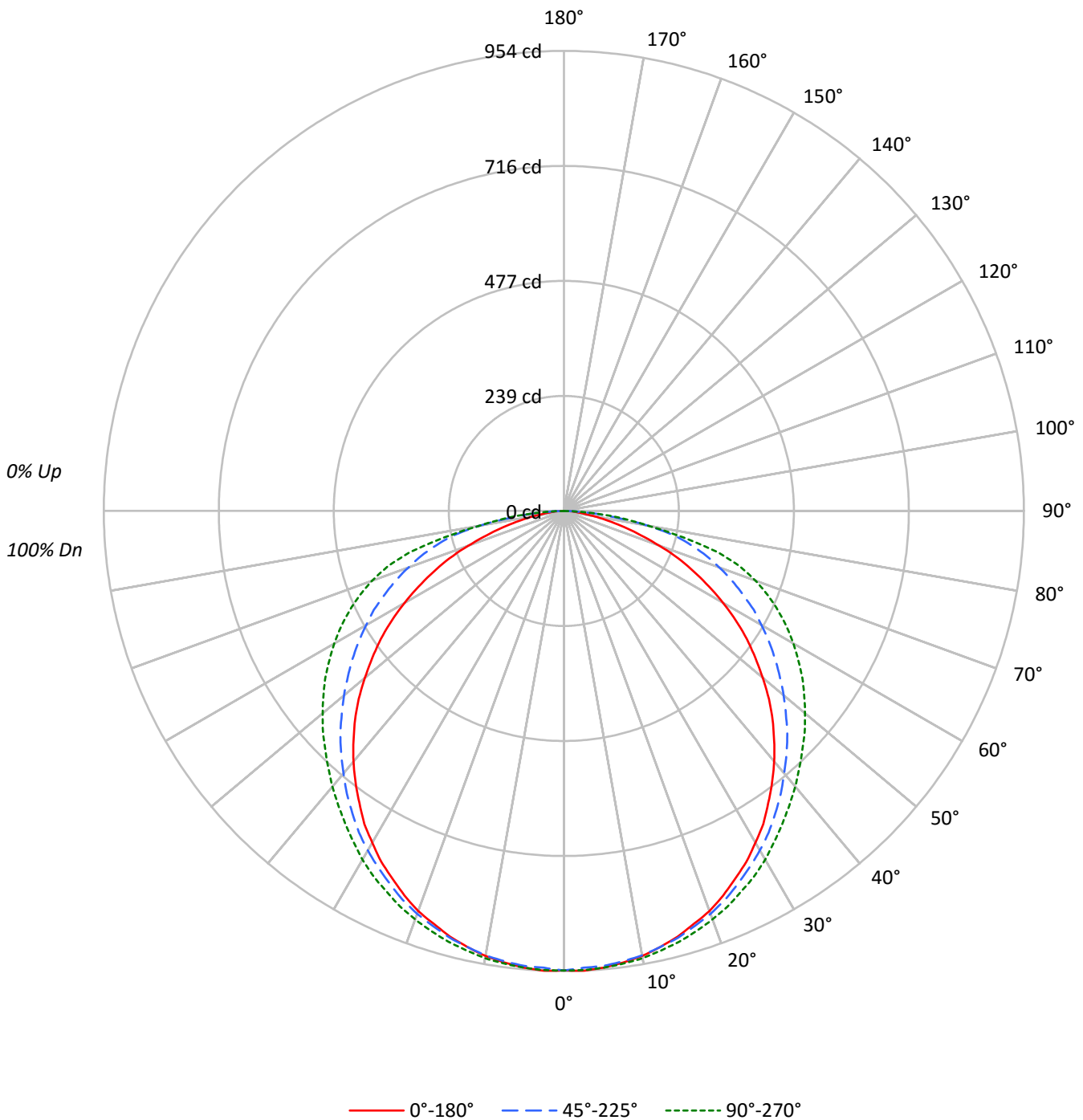
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	1282	1282	1282
5°	1284	1279	1284
10°	1280	1278	1287
15°	1273	1276	1288
20°	1264	1273	1291
25°	1249	1267	1292
30°	1234	1263	1297
35°	1214	1256	1299
40°	1192	1248	1311
45°	1165	1247	1331
50°	1127	1246	1367
55°	1087	1255	1416
60°	1026	1274	1479
65°	947	1303	1562
70°	827	1349	1664
75°	671	1419	1720
80°	495	1391	1391
85°	380	1025	1158



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.3	3.1
10°-20°	259.2	8.8
20°-30°	394.6	13.4
30°-40°	479.2	16.3
40°-50°	506.2	17.2
50°-60°	477.7	16.3
60°-70°	397.2	13.5
70°-80°	261.3	8.9
80°-90°	71.2	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°	744.1	25.3
0°-40°	1223.3	41.7
0°-60°	2207.3	75.2
0°-90°	2937.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2937.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	953	953	953	953	953	
5°	950	950	947	950	950	90
15°	914	915	916	925	925	258
25°	841	846	853	868	870	388
35°	739	748	765	784	791	463
45°	612	625	655	687	700	472
55°	464	483	535	585	604	413
65°	298	332	409	470	491	294
75°	129	188	273	323	331	139
85°	25	54	66	74	75	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	952.9	952.9	952.9	952.9	952.9
2.5°	954.1	952.9	948.0	952.9	952.9
5°	950.5	950.5	946.8	950.5	950.5
7.5°	944.3	944.3	941.8	946.8	946.8
10°	936.9	936.9	935.7	941.8	941.8
12.5°	925.9	927.1	925.9	933.2	933.2
15°	913.6	914.8	916.0	924.6	924.6
17.5°	897.6	900.0	902.5	912.3	913.6
20°	882.8	884.1	889.0	900.0	901.3
22.5°	863.2	866.8	873.0	884.1	887.7
25°	841.0	845.9	853.3	868.1	870.5
27.5°	820.1	823.8	833.6	849.6	854.5
30°	794.3	800.4	812.7	828.7	834.9
32.5°	769.7	775.9	790.6	807.8	812.7
35°	739.0	747.6	764.8	784.5	790.6
37.5°	709.5	718.1	739.0	761.1	768.5
40°	678.7	688.6	710.7	736.5	746.3
42.5°	645.5	659.0	683.6	711.9	723.0
45°	612.3	624.6	655.4	687.3	699.6
47.5°	576.7	591.4	624.6	662.7	677.5
50°	538.5	557.0	595.1	636.9	652.9
52.5°	500.4	521.3	564.4	611.1	628.3
55°	463.5	483.2	534.9	585.3	603.7
57.5°	423.0	447.6	504.1	558.2	576.7
60°	381.2	408.2	473.4	529.9	549.6
62.5°	339.4	370.1	443.9	500.4	521.3
65°	297.6	332.0	409.4	469.7	490.6
67.5°	257.0	295.1	377.5	437.7	458.6
70°	210.3	258.2	343.0	402.1	423.0
72.5°	167.2	222.6	309.9	365.2	383.6
75°	129.1	188.1	273.0	323.4	330.8
77.5°	94.7	153.7	234.8	252.1	253.3
80°	63.9	123.0	179.5	177.1	179.5
82.5°	41.8	92.2	113.1	126.6	127.9
85°	24.6	54.1	66.4	73.8	75.0
87.5°	12.3	18.4	23.4	24.6	27.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)