

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: P309441

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-HRP-CP187-W2A-U-4500K**

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: P309441
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-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187"
POLYCARB SHEET
Light Source: (336) 4500K 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: 2957.0 lumens
Efficiency: N/A
Efficacy: 86.0 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

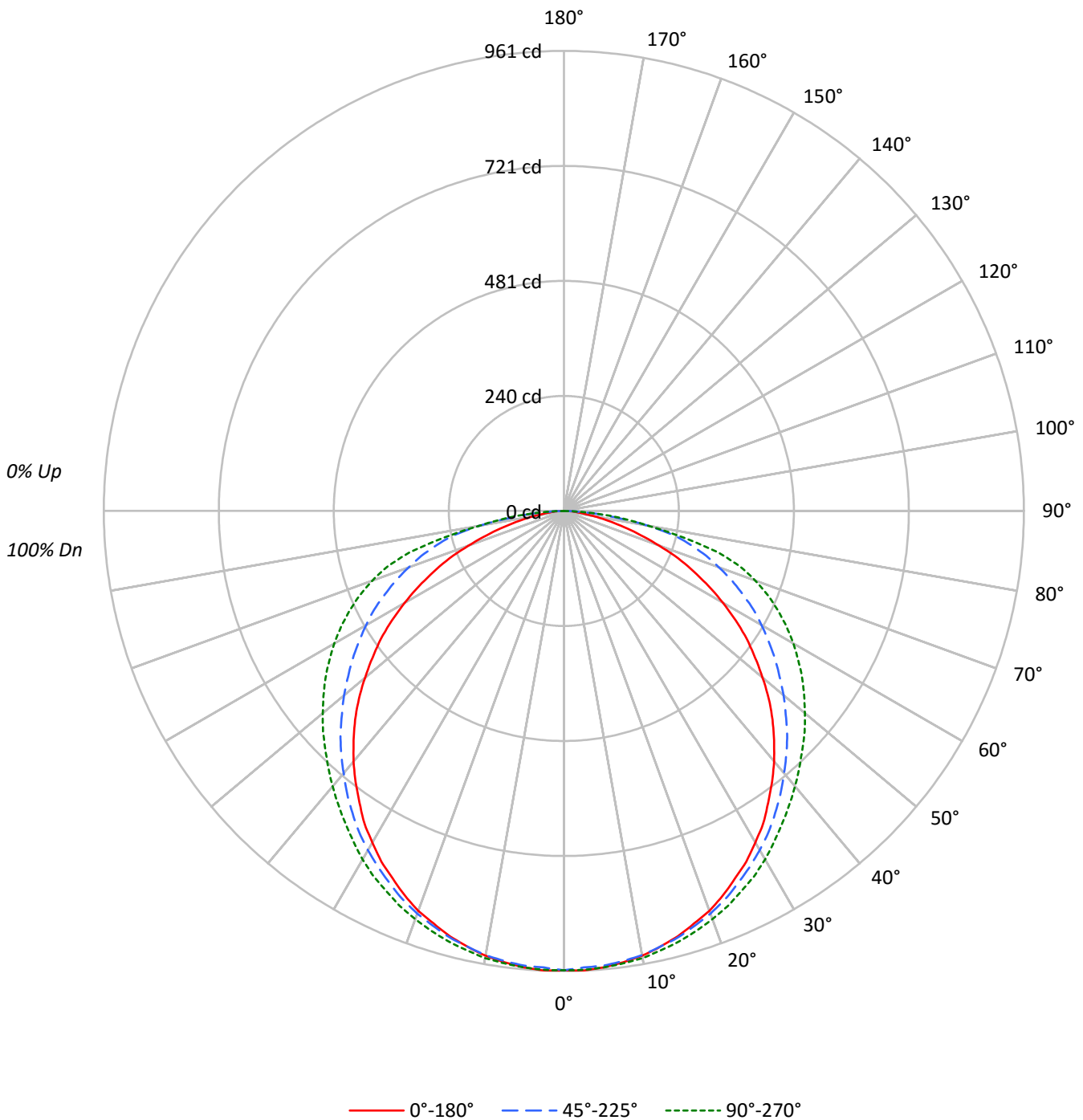
Input Watts (W): 34.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	1291	1291	1291
5°	1292	1287	1292
10°	1289	1287	1296
15°	1281	1285	1297
20°	1273	1281	1299
25°	1257	1275	1301
30°	1242	1271	1306
35°	1222	1265	1307
40°	1200	1257	1320
45°	1173	1255	1340
50°	1135	1254	1376
55°	1095	1263	1426
60°	1033	1283	1489
65°	954	1312	1572
70°	833	1359	1675
75°	676	1429	1731
80°	499	1400	1400
85°	383	1031	1166



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	90.9	3.1
10°-20°	261.0	8.8
20°-30°	397.3	13.4
30°-40°	482.4	16.3
40°-50°	509.7	17.2
50°-60°	481.0	16.3
60°-70°	399.9	13.5
70°-80°	263.1	8.9
80°-90°	71.7	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°	749.2	25.3
0°-40°	1231.6	41.7
0°-60°	2222.3	75.2
0°-90°	2957.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2957.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	959	959	959	959	959	
5°	957	957	953	957	957	91
15°	920	921	922	931	931	259
25°	847	852	859	874	876	391
35°	744	753	770	790	796	466
45°	616	629	660	692	704	475
55°	467	486	538	589	608	416
65°	300	334	412	473	494	296
75°	130	189	275	326	333	140
85°	25	54	67	74	76	30
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	959.4	959.4	959.4	959.4	959.4
2.5°	960.6	959.4	954.4	959.4	959.4
5°	956.9	956.9	953.2	956.9	956.9
7.5°	950.7	950.7	948.3	953.2	953.2
10°	943.3	943.3	942.1	948.3	948.3
12.5°	932.2	933.4	932.2	939.6	939.6
15°	919.8	921.0	922.3	930.9	930.9
17.5°	903.7	906.2	908.6	918.5	919.8
20°	888.8	890.1	895.0	906.2	907.4
22.5°	869.0	872.7	878.9	890.1	893.8
25°	846.7	851.7	859.1	874.0	876.5
27.5°	825.7	829.4	839.3	855.4	860.4
30°	799.7	805.9	818.3	834.4	840.6
32.5°	774.9	781.1	796.0	813.3	818.3
35°	744.0	752.7	770.0	789.8	796.0
37.5°	714.3	723.0	744.0	766.3	773.7
40°	683.3	693.2	715.5	741.5	751.4
42.5°	649.9	663.5	688.3	716.8	727.9
45°	616.5	628.9	659.8	692.0	704.4
47.5°	580.6	595.4	628.9	667.2	682.1
50°	542.2	560.8	599.2	641.3	657.3
52.5°	503.8	524.9	568.2	615.3	632.6
55°	466.7	486.5	538.5	589.3	607.8
57.5°	425.9	450.6	507.6	562.0	580.6
60°	383.8	411.0	476.6	533.6	553.4
62.5°	341.7	372.6	446.9	503.8	524.9
65°	299.6	334.2	412.2	472.9	493.9
67.5°	258.7	297.1	380.0	440.7	461.8
70°	211.7	260.0	345.4	404.8	425.9
72.5°	168.4	224.1	312.0	367.7	386.2
75°	130.0	189.4	274.8	325.6	333.0
77.5°	95.3	154.7	236.4	253.8	255.0
80°	64.4	123.8	180.7	178.3	180.7
82.5°	42.1	92.8	113.9	127.5	128.7
85°	24.8	54.5	66.8	74.3	75.5
87.5°	12.4	18.6	23.5	24.8	27.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)