

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: P310790

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-CP187-W2A-U-4000K**

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: P310790
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
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-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4000K 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: 3830.0 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

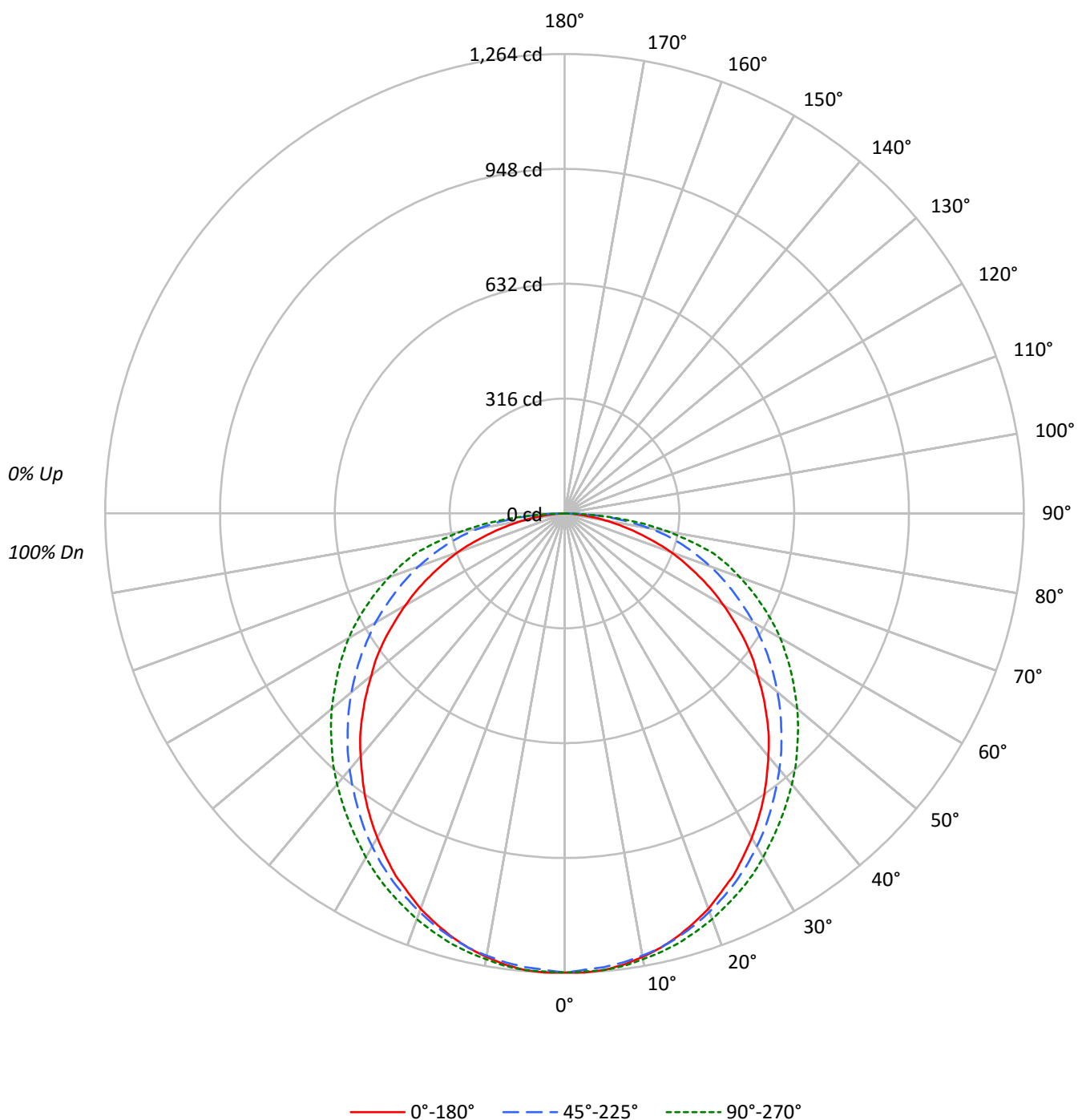
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
RW	70	50	30	10	70	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		100
1	108	103	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1699	1699	1699
5°	1703	1692	1703
10°	1693	1687	1701
15°	1678	1682	1703
20°	1657	1670	1701
25°	1632	1658	1700
30°	1601	1645	1698
35°	1570	1628	1699
40°	1533	1616	1710
45°	1497	1606	1724
50°	1452	1601	1750
55°	1416	1604	1786
60°	1361	1618	1847
65°	1299	1635	1914
70°	1230	1685	2020
75°	1096	1757	2206
80°	935	1861	2255
85°	667	1843	2158



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.5	3.1
10°-20°	341.8	8.9
20°-30°	516.3	13.5
30°-40°	622.2	16.2
40°-50°	653.2	17.1
50°-60°	611.1	16.0
60°-70°	504.7	13.2
70°-80°	343.9	9.0
80°-90°	117.3	3.1
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°	977.6	25.5
0°-40°	1599.8	41.8
0°-60°	2864.2	74.8
0°-90°	3830.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3830.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1263	1263	1263	1263	1263	
5°	1261	1259	1253	1261	1261	120
15°	1205	1206	1207	1220	1222	340
25°	1099	1104	1117	1139	1145	506
35°	956	966	991	1024	1034	597
45°	787	803	844	890	906	607
55°	604	628	684	740	761	539
65°	408	442	513	578	601	405
75°	211	259	338	402	424	225
85°	43	85	119	135	140	54
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1263.1	1263.1	1263.1	1263.1	1263.1
2.5°	1264.4	1263.1	1256.7	1263.1	1261.8
5°	1260.6	1259.3	1252.9	1260.6	1260.6
7.5°	1251.7	1251.7	1245.3	1254.2	1255.5
10°	1239.0	1239.0	1235.1	1245.3	1245.3
12.5°	1223.7	1223.7	1223.7	1233.9	1235.1
15°	1204.6	1205.9	1207.2	1219.9	1222.4
17.5°	1181.8	1184.3	1188.1	1203.4	1205.9
20°	1157.6	1160.2	1166.5	1184.3	1188.1
22.5°	1127.1	1133.5	1142.4	1162.7	1166.5
25°	1099.2	1104.3	1117.0	1138.6	1144.9
27.5°	1064.9	1072.5	1089.0	1111.9	1120.8
30°	1030.6	1038.2	1058.5	1085.2	1092.8
32.5°	993.7	1005.1	1026.7	1054.7	1063.6
35°	955.6	965.8	991.2	1024.2	1034.4
37.5°	913.7	927.6	955.6	991.2	1003.9
40°	873.0	888.2	920.0	958.1	973.4
42.5°	832.3	847.6	883.2	926.4	941.6
45°	786.6	803.1	843.8	889.5	906.0
47.5°	740.8	761.2	805.6	853.9	871.7
50°	693.8	716.7	765.0	815.8	836.1
52.5°	651.9	673.5	724.3	779.0	798.0
55°	603.6	627.7	683.7	739.6	761.2
57.5°	554.0	580.7	640.4	701.4	723.0
60°	505.7	535.0	601.1	662.0	686.2
62.5°	458.7	488.0	556.6	620.1	644.3
65°	407.9	442.2	513.4	578.2	601.1
67.5°	359.6	396.5	471.4	535.0	557.8
70°	312.6	348.2	428.2	490.5	513.4
72.5°	261.8	302.4	382.5	447.3	471.4
75°	210.9	259.2	338.0	401.5	424.4
77.5°	163.9	213.5	292.3	344.4	355.8
80°	120.7	171.5	240.2	277.0	291.0
82.5°	77.5	128.3	183.0	209.7	221.1
85°	43.2	85.1	119.4	134.7	139.8
87.5°	17.8	36.9	48.3	54.6	54.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)