

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: P311471

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP250-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: P311471
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
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-S-CP250-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" 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: 3669.0 lumens
Efficiency: N/A
Efficacy: 108.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

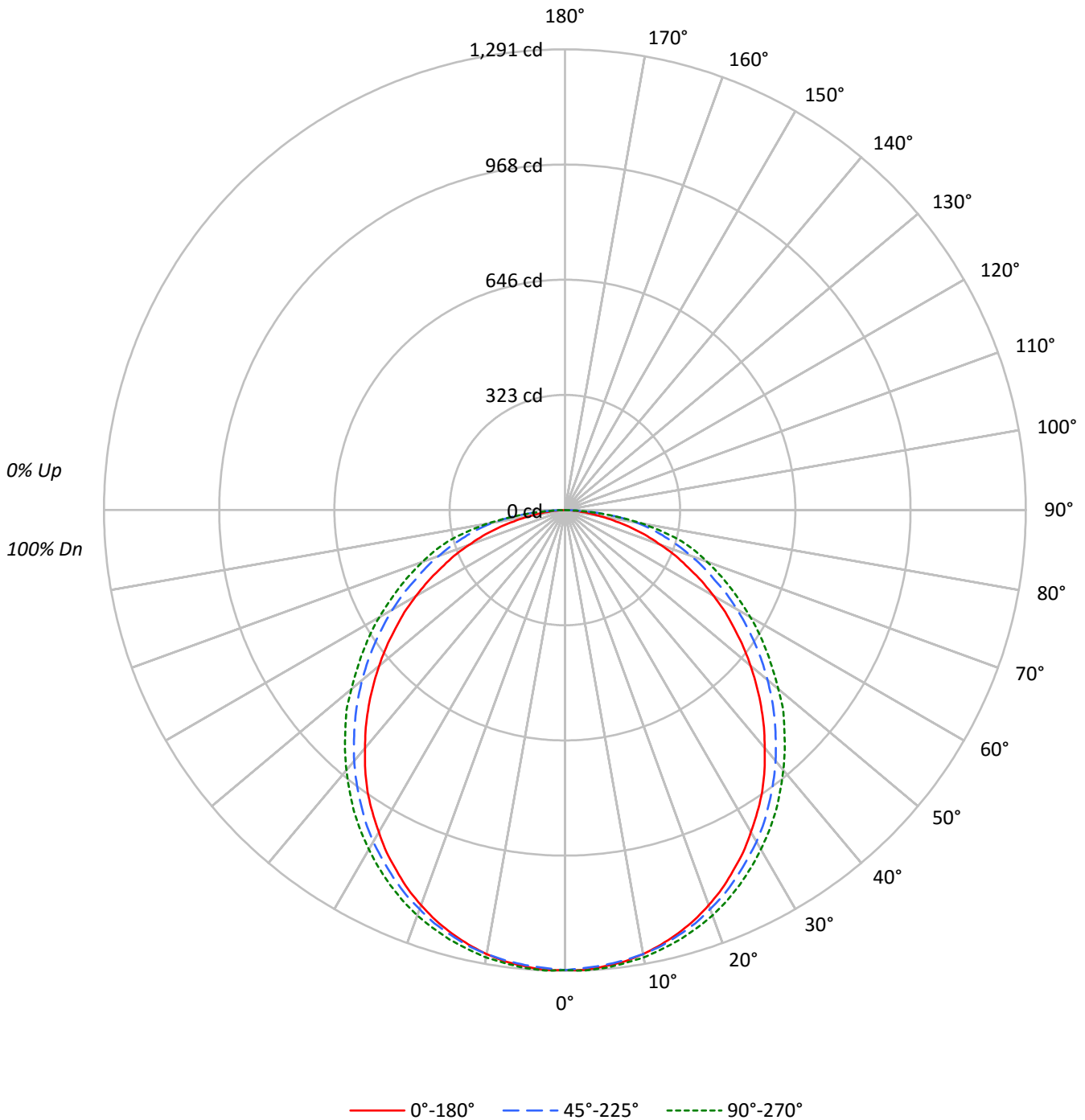
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1734	1734	1734
5°	1733	1728	1739
10°	1726	1726	1739
15°	1709	1718	1735
20°	1687	1704	1730
25°	1656	1687	1720
30°	1619	1668	1706
35°	1583	1641	1692
40°	1529	1613	1672
45°	1479	1581	1654
50°	1422	1551	1634
55°	1359	1523	1618
60°	1295	1499	1615
65°	1213	1473	1625
70°	1123	1481	1669
75°	1006	1509	1763
80°	813	1598	1725
85°	611	1403	1368



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.0	3.3
10°-20°	348.7	9.5
20°-30°	524.1	14.3
30°-40°	624.3	17.0
40°-50°	639.0	17.4
50°-60°	575.2	15.7
60°-70°	451.8	12.3
70°-80°	293.2	8.0
80°-90°	90.7	2.5
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°	994.8	27.1
0°-40°	1619.1	44.1
0°-60°	2833.3	77.2
0°-90°	3669.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3669.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1289	1289	1289	1289	1289	
5°	1283	1285	1280	1287	1288	122
15°	1227	1231	1233	1244	1246	346
25°	1115	1125	1136	1155	1158	514
35°	964	975	999	1023	1030	601
45°	777	796	831	862	869	599
55°	579	605	649	683	690	519
65°	381	410	463	501	510	379
75°	194	231	290	330	339	205
85°	40	73	91	89	89	48
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1288.9	1288.9	1288.9	1288.9	1288.9
2.5°	1290.1	1290.1	1284.3	1290.1	1291.3
5°	1283.1	1285.4	1279.6	1286.6	1287.8
7.5°	1276.1	1276.1	1272.6	1279.6	1280.8
10°	1263.3	1264.5	1263.3	1271.5	1272.6
12.5°	1247.0	1249.3	1250.5	1258.6	1259.8
15°	1227.2	1230.7	1233.0	1243.5	1245.8
17.5°	1205.0	1208.5	1214.4	1226.0	1228.3
20°	1178.2	1182.9	1189.9	1205.0	1208.5
22.5°	1149.1	1153.8	1165.4	1179.4	1185.2
25°	1115.3	1124.6	1136.3	1154.9	1158.4
27.5°	1081.5	1089.7	1104.8	1124.6	1129.3
30°	1041.9	1054.7	1073.3	1093.2	1097.8
32.5°	1003.4	1016.2	1038.4	1059.4	1065.2
35°	963.8	975.4	998.8	1023.2	1030.2
37.5°	918.3	933.5	959.1	983.6	990.6
40°	870.6	889.2	918.3	944.0	952.1
42.5°	825.1	844.9	874.1	902.0	911.4
45°	777.3	796.0	830.9	862.4	869.4
47.5°	728.4	749.4	786.7	818.1	829.8
50°	679.4	701.6	741.2	773.8	780.8
52.5°	630.5	653.8	695.7	730.7	734.2
55°	579.2	604.8	649.1	682.9	689.9
57.5°	532.6	554.7	602.5	637.5	645.6
60°	481.3	505.8	557.1	589.7	600.2
62.5°	432.4	458.0	511.6	544.2	553.6
65°	381.1	410.2	462.7	501.1	510.4
67.5°	336.8	364.8	420.7	458.0	467.3
70°	285.5	317.0	376.4	414.9	424.2
72.5°	241.2	273.9	333.3	370.6	384.6
75°	193.5	230.8	290.2	329.8	339.1
77.5°	146.8	190.0	250.6	280.9	280.9
80°	104.9	150.3	206.3	220.3	222.6
82.5°	68.8	113.0	152.7	151.5	151.5
85°	39.6	73.4	90.9	88.6	88.6
87.5°	15.2	30.3	32.6	32.6	31.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)