

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: P311516

Luminaire Tested: **24FCZ2-45-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: P311516
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: 24FCZ2-45-UNV-L82765-S-CP250-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (168) 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: 3708.0 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

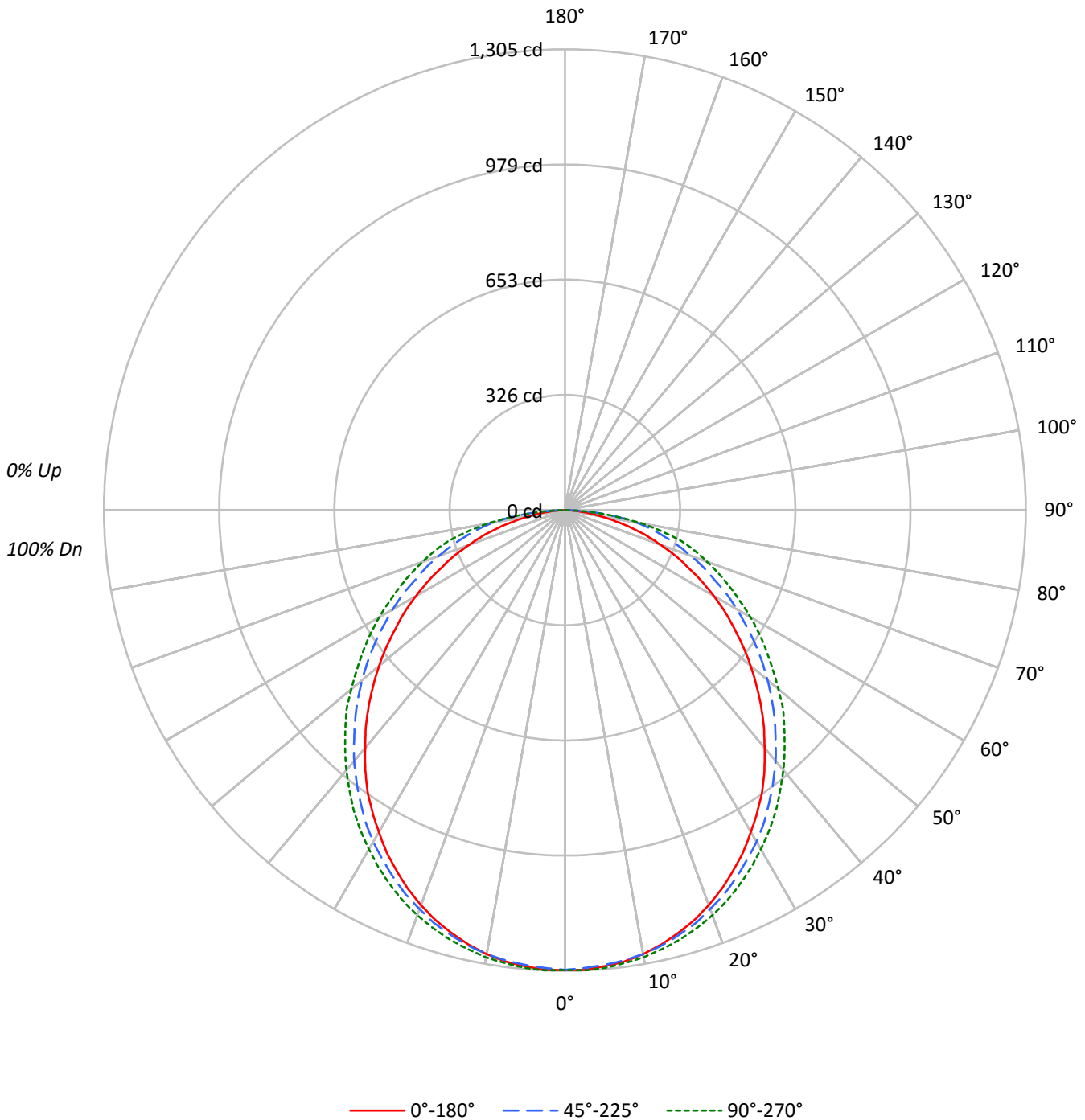
Input Watts (W): 37.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	1753	1753	1753
5°	1751	1747	1758
10°	1744	1744	1757
15°	1728	1736	1754
20°	1705	1722	1749
25°	1673	1705	1738
30°	1636	1685	1724
35°	1600	1658	1710
40°	1545	1630	1690
45°	1495	1598	1672
50°	1437	1568	1652
55°	1373	1539	1636
60°	1309	1515	1632
65°	1226	1489	1642
70°	1135	1496	1686
75°	1016	1525	1782
80°	821	1616	1743
85°	618	1419	1382



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.3	3.3
10°-20°	352.4	9.5
20°-30°	529.7	14.3
30°-40°	631.0	17.0
40°-50°	645.8	17.4
50°-60°	581.4	15.7
60°-70°	456.6	12.3
70°-80°	296.3	8.0
80°-90°	91.6	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°	1005.4	27.1
0°-40°	1636.4	44.1
0°-60°	2863.5	77.2
0°-90°	3708.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3708.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1303	1303	1303	1303	1303	
5°	1297	1299	1293	1300	1302	123
15°	1240	1244	1246	1257	1259	350
25°	1127	1137	1148	1167	1171	519
35°	974	986	1009	1034	1041	608
45°	786	804	840	872	879	606
55°	585	611	656	690	697	525
65°	385	415	468	506	516	383
75°	196	233	293	333	343	207
85°	40	74	92	90	90	48
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1302.6	1302.6	1302.6	1302.6	1302.6
2.5°	1303.8	1303.8	1297.9	1303.8	1305.0
5°	1296.8	1299.1	1293.2	1300.3	1301.5
7.5°	1289.7	1289.7	1286.2	1293.2	1294.4
10°	1276.7	1277.9	1276.7	1285.0	1286.2
12.5°	1260.2	1262.6	1263.8	1272.0	1273.2
15°	1240.2	1243.8	1246.1	1256.7	1259.1
17.5°	1217.8	1221.4	1227.3	1239.0	1241.4
20°	1190.8	1195.5	1202.5	1217.8	1221.4
22.5°	1161.3	1166.0	1177.8	1191.9	1197.8
25°	1127.2	1136.6	1148.4	1167.2	1170.7
27.5°	1093.0	1101.2	1116.6	1136.6	1141.3
30°	1053.0	1065.9	1084.8	1104.8	1109.5
32.5°	1014.1	1027.0	1049.4	1070.6	1076.5
35°	974.0	985.8	1009.4	1034.1	1041.2
37.5°	928.1	943.4	969.3	994.1	1001.1
40°	879.8	898.7	928.1	954.0	962.3
42.5°	833.9	853.9	883.3	911.6	921.0
45°	785.6	804.4	839.8	871.6	878.6
47.5°	736.1	757.3	795.0	826.8	838.6
50°	686.7	709.0	749.1	782.1	789.1
52.5°	637.2	660.7	703.1	738.5	742.0
55°	585.4	611.3	656.0	690.2	697.3
57.5°	538.3	560.6	608.9	644.3	652.5
60°	486.4	511.2	563.0	596.0	606.6
62.5°	437.0	462.9	517.1	550.0	559.5
65°	385.1	414.6	467.6	506.5	515.9
67.5°	340.4	368.7	425.2	462.9	472.3
70°	288.6	320.4	380.4	419.3	428.7
72.5°	243.8	276.8	336.9	374.5	388.7
75°	195.5	233.2	293.3	333.3	342.7
77.5°	148.4	192.0	253.2	283.8	283.8
80°	106.0	151.9	208.5	222.6	225.0
82.5°	69.5	114.2	154.3	153.1	153.1
85°	40.0	74.2	91.9	89.5	89.5
87.5°	15.3	30.6	33.0	33.0	31.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)