

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: P311523

Luminaire Tested: **24FCZ2-45-UNV-L82765-S-CP250-W2A-U-5700K**

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: P311523
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-5700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (168) 5700K 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: 4213.0 lumens
Efficiency: N/A
Efficacy: 108.9 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

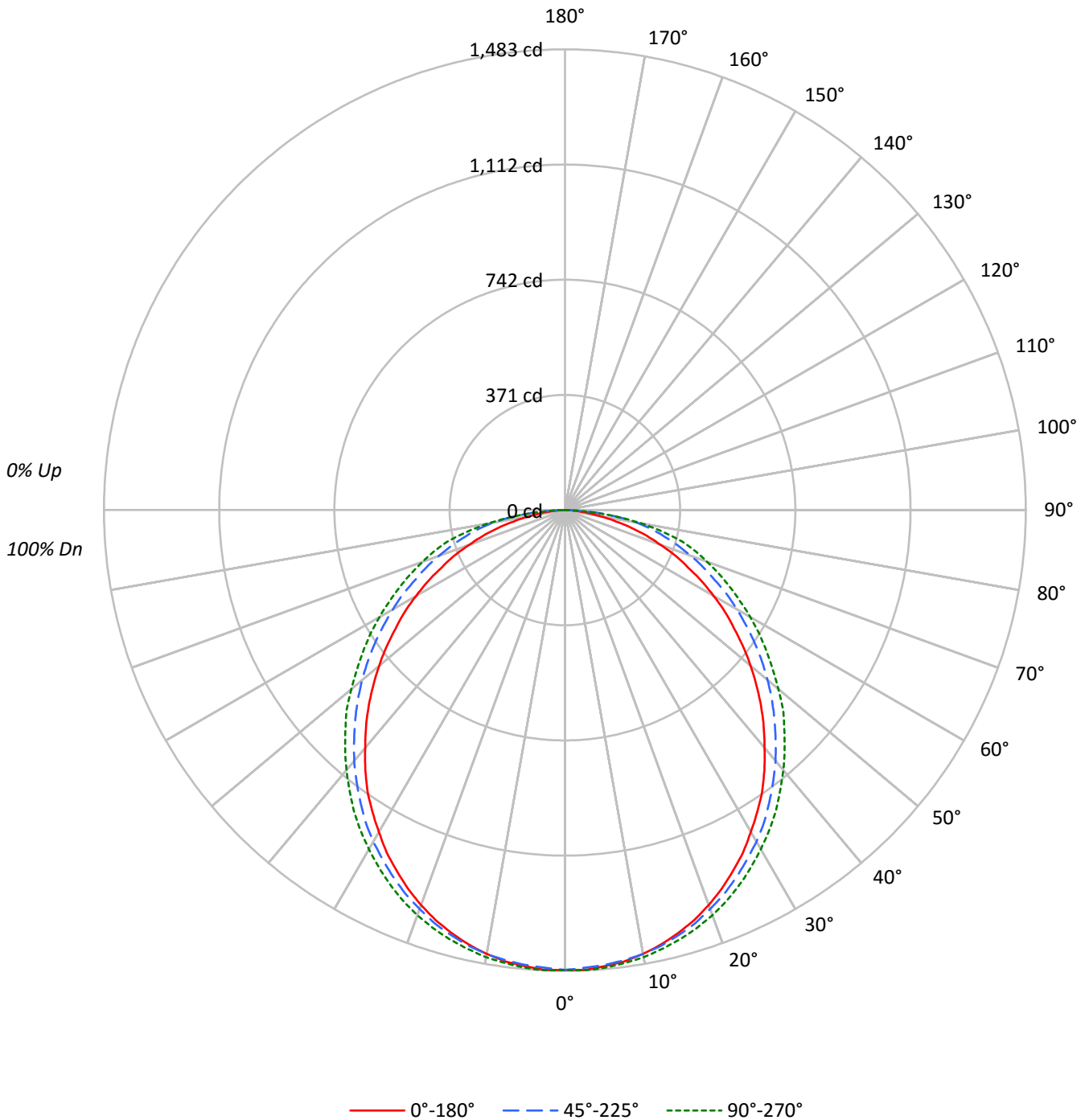
Input Watts (W): 38.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1991	1991	1991
5°	1990	1984	1997
10°	1982	1982	1996
15°	1963	1972	1993
20°	1937	1956	1987
25°	1901	1937	1975
30°	1859	1915	1959
35°	1818	1884	1943
40°	1756	1852	1920
45°	1698	1815	1900
50°	1633	1782	1877
55°	1560	1749	1858
60°	1487	1721	1855
65°	1393	1691	1866
70°	1290	1700	1916
75°	1155	1732	2024
80°	933	1836	1980
85°	702	1612	1570



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.1	3.3
10°-20°	400.4	9.5
20°-30°	601.8	14.3
30°-40°	716.9	17.0
40°-50°	733.7	17.4
50°-60°	660.6	15.7
60°-70°	518.7	12.3
70°-80°	336.7	8.0
80°-90°	104.1	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°	1142.3	27.1
0°-40°	1859.2	44.1
0°-60°	3253.5	77.2
0°-90°	4213.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4213.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1480	1480	1480	1480	1480	
5°	1473	1476	1469	1477	1479	140
15°	1409	1413	1416	1428	1430	397
25°	1281	1291	1305	1326	1330	590
35°	1107	1120	1147	1175	1183	690
45°	893	914	954	990	998	688
55°	665	694	745	784	792	596
65°	438	471	531	575	586	436
75°	222	265	333	379	389	235
85°	46	84	104	102	102	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1480.1	1480.1	1480.1	1480.1	1480.1
2.5°	1481.4	1481.4	1474.7	1481.4	1482.7
5°	1473.4	1476.0	1469.3	1477.4	1478.7
7.5°	1465.3	1465.3	1461.3	1469.3	1470.7
10°	1450.6	1452.0	1450.6	1460.0	1461.3
12.5°	1431.9	1434.6	1435.9	1445.3	1446.6
15°	1409.1	1413.1	1415.8	1427.9	1430.5
17.5°	1383.7	1387.7	1394.4	1407.8	1410.5
20°	1352.9	1358.3	1366.3	1383.7	1387.7
22.5°	1319.5	1324.8	1338.2	1354.3	1361.0
25°	1280.7	1291.4	1304.7	1326.2	1330.2
27.5°	1241.9	1251.2	1268.6	1291.4	1296.7
30°	1196.4	1211.1	1232.5	1255.2	1260.6
32.5°	1152.2	1166.9	1192.3	1216.4	1223.1
35°	1106.7	1120.1	1146.8	1174.9	1183.0
37.5°	1054.5	1071.9	1101.3	1129.4	1137.5
40°	999.6	1021.1	1054.5	1083.9	1093.3
42.5°	947.4	970.2	1003.7	1035.8	1046.5
45°	892.6	914.0	954.1	990.3	998.3
47.5°	836.4	860.5	903.3	939.4	952.8
50°	780.2	805.6	851.1	888.6	896.6
52.5°	724.0	750.7	798.9	839.1	843.1
55°	665.1	694.5	745.4	784.2	792.2
57.5°	611.6	637.0	691.9	732.0	741.4
60°	552.7	580.8	639.7	677.1	689.2
62.5°	496.5	525.9	587.5	624.9	635.6
65°	437.6	471.0	531.3	575.4	586.1
67.5°	386.7	418.9	483.1	525.9	536.6
70°	327.9	364.0	432.2	476.4	487.1
72.5°	277.0	314.5	382.7	425.5	441.6
75°	222.1	265.0	333.2	378.7	389.4
77.5°	168.6	218.1	287.7	322.5	322.5
80°	120.4	172.6	236.9	252.9	255.6
82.5°	79.0	129.8	175.3	174.0	174.0
85°	45.5	84.3	104.4	101.7	101.7
87.5°	17.4	34.8	37.5	37.5	36.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)