

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: P311610

Luminaire Tested: **24FCZ2-50-UNV-L82765-S-CP250-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: P311610
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: 24FCZ2-50-UNV-L82765-S-CP250-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (168) 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: 4530.0 lumens
Efficiency: N/A
Efficacy: 104.1 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

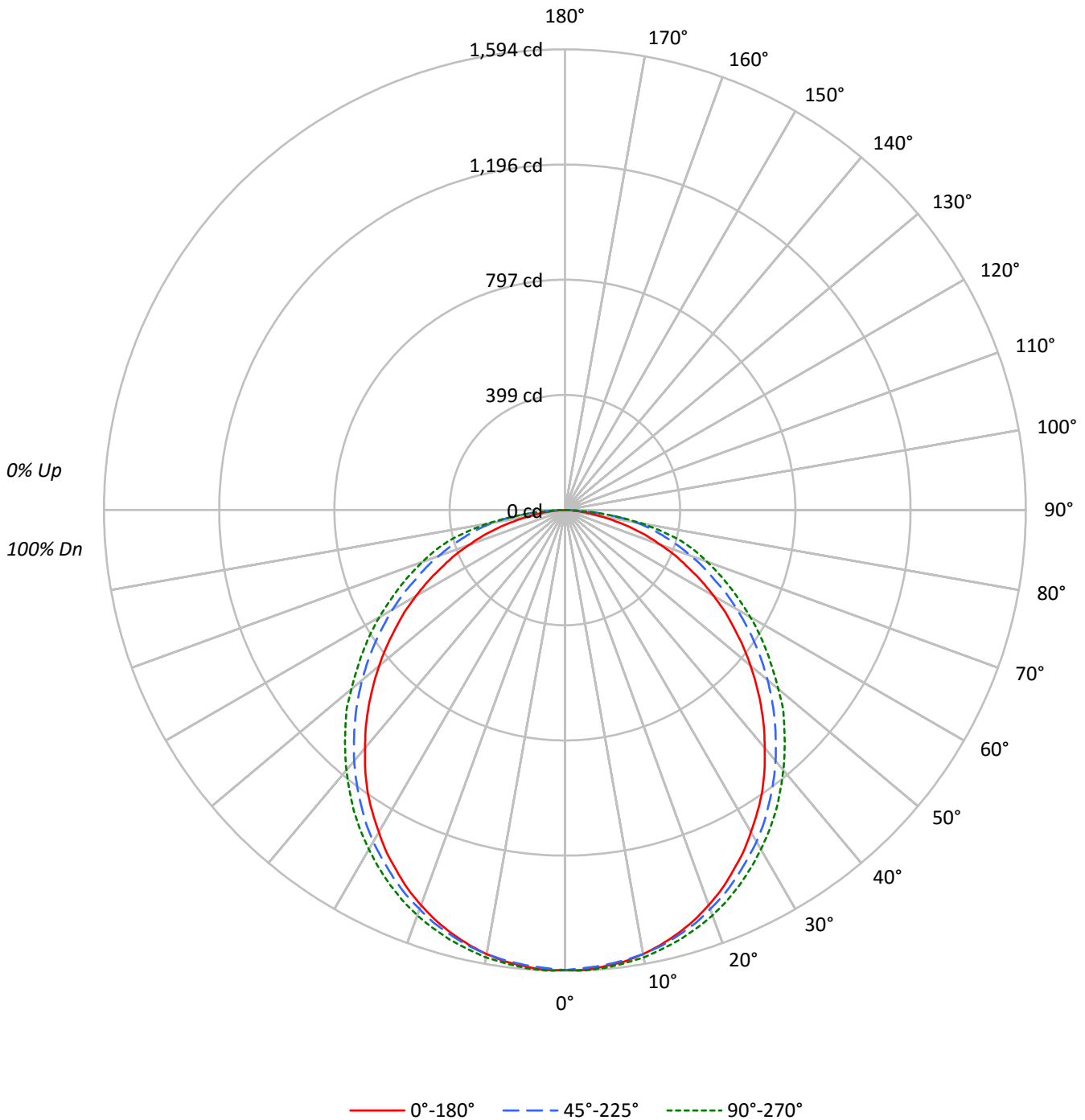
Input Watts (W): 43.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2141	2141	2141
5°	2140	2134	2148
10°	2131	2131	2147
15°	2111	2121	2143
20°	2083	2104	2136
25°	2044	2083	2123
30°	1999	2059	2106
35°	1955	2025	2089
40°	1888	1991	2065
45°	1826	1952	2042
50°	1756	1915	2018
55°	1677	1880	1998
60°	1599	1851	1994
65°	1498	1819	2006
70°	1387	1828	2061
75°	1242	1863	2177
80°	1003	1974	2129
85°	755	1732	1689



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.7	3.3
10°-20°	430.5	9.5
20°-30°	647.1	14.3
30°-40°	770.8	17.0
40°-50°	788.9	17.4
50°-60°	710.2	15.7
60°-70°	557.8	12.3
70°-80°	362.0	8.0
80°-90°	112.0	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°	1228.3	27.1
0°-40°	1999.1	44.1
0°-60°	3498.3	77.2
0°-90°	4530.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4530.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1591	1591	1591	1591	1591	
5°	1584	1587	1580	1588	1590	151
15°	1515	1520	1522	1535	1538	427
25°	1377	1388	1403	1426	1430	634
35°	1190	1204	1233	1263	1272	742
45°	960	983	1026	1065	1073	740
55°	715	747	802	843	852	641
65°	470	506	571	619	630	468
75°	239	285	358	407	419	253
85°	49	91	112	109	109	59
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1591.4	1591.4	1591.4	1591.4	1591.4
2.5°	1592.9	1592.9	1585.7	1592.9	1594.3
5°	1584.2	1587.1	1579.9	1588.5	1590.0
7.5°	1575.6	1575.6	1571.3	1579.9	1581.3
10°	1559.8	1561.2	1559.8	1569.8	1571.3
12.5°	1539.6	1542.5	1543.9	1554.0	1555.4
15°	1515.2	1519.5	1522.4	1535.3	1538.2
17.5°	1487.8	1492.1	1499.3	1513.7	1516.6
20°	1454.7	1460.5	1469.1	1487.8	1492.1
22.5°	1418.8	1424.5	1438.9	1456.2	1463.4
25°	1377.0	1388.5	1402.9	1425.9	1430.3
27.5°	1335.3	1345.4	1364.1	1388.5	1394.3
30°	1286.4	1302.2	1325.2	1349.7	1355.4
32.5°	1238.9	1254.7	1282.1	1308.0	1315.2
35°	1190.0	1204.4	1233.1	1263.4	1272.0
37.5°	1133.8	1152.6	1184.2	1214.4	1223.1
40°	1074.9	1097.9	1133.8	1165.5	1175.6
42.5°	1018.7	1043.2	1079.2	1113.7	1125.2
45°	959.7	982.8	1025.9	1064.8	1073.4
47.5°	899.3	925.2	971.3	1010.1	1024.5
50°	838.9	866.2	915.1	955.4	964.1
52.5°	778.4	807.2	859.0	902.2	906.5
55°	715.1	746.8	801.5	843.2	851.8
57.5°	657.6	684.9	743.9	787.1	797.1
60°	594.3	624.5	687.8	728.1	741.0
62.5°	533.8	565.5	631.7	672.0	683.5
65°	470.5	506.5	571.2	618.7	630.2
67.5°	415.8	450.4	519.4	565.5	577.0
70°	352.5	391.4	464.8	512.2	523.8
72.5°	297.9	338.1	411.5	457.6	474.8
75°	238.9	284.9	358.3	407.2	418.7
77.5°	181.3	234.5	309.4	346.8	346.8
80°	129.5	185.6	254.7	272.0	274.8
82.5°	84.9	139.6	188.5	187.1	187.1
85°	48.9	90.7	112.2	109.4	109.4
87.5°	18.7	37.4	40.3	40.3	38.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)