

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: P311599

Luminaire Tested: **24FCZ2-50-UNV-L82765-S-CP187-W2A-U-3500K**

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: P311599
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-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 3500K 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: 4391.0 lumens
Efficiency: N/A
Efficacy: 102.4 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

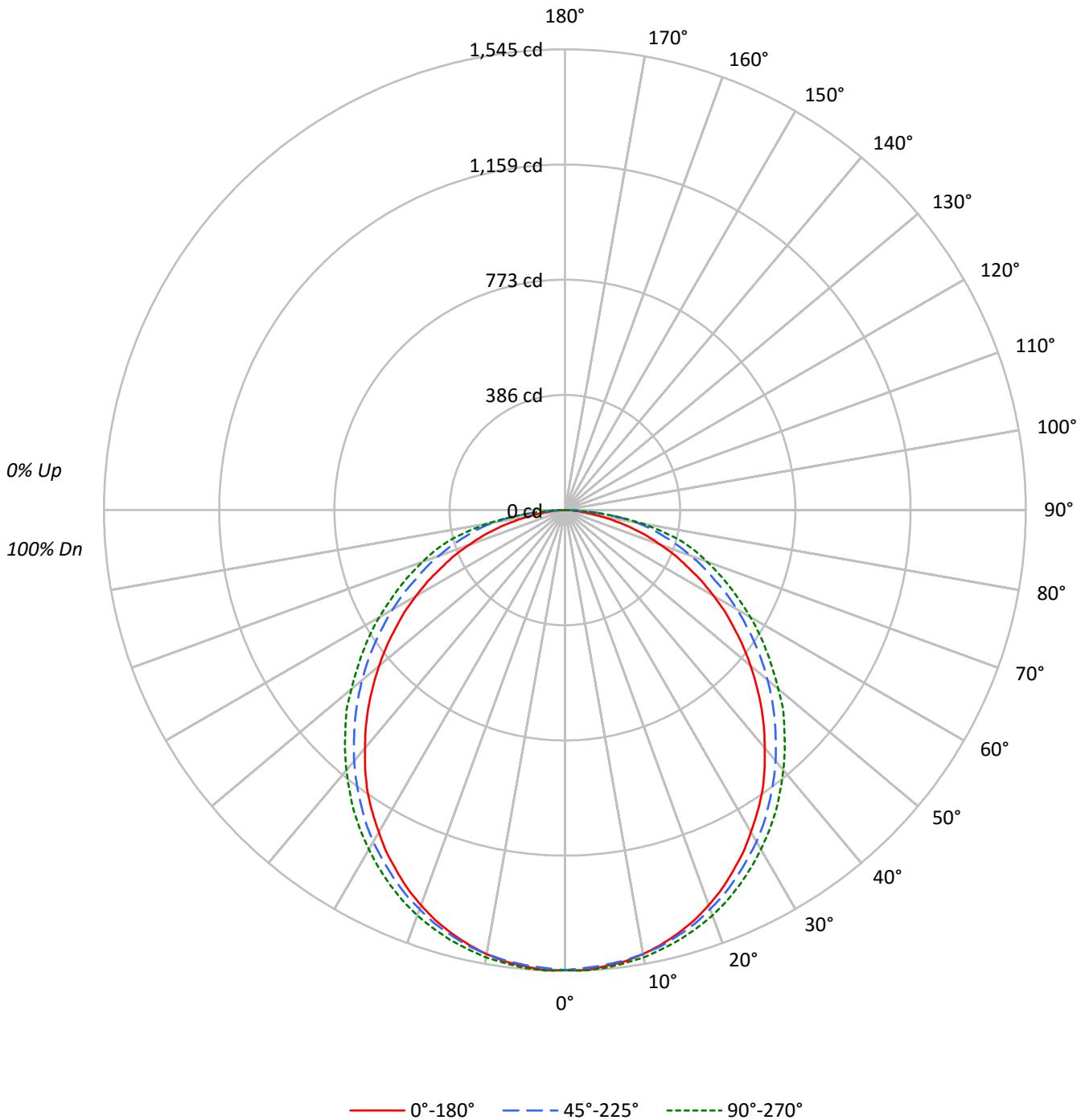
Input Watts (W): 42.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2076	2076	2076
5°	2074	2068	2082
10°	2066	2066	2081
15°	2046	2055	2077
20°	2019	2039	2071
25°	1982	2019	2058
30°	1937	1996	2041
35°	1895	1963	2025
40°	1830	1930	2001
45°	1770	1892	1980
50°	1702	1857	1956
55°	1626	1822	1937
60°	1550	1794	1933
65°	1452	1763	1945
70°	1344	1772	1997
75°	1203	1805	2110
80°	972	1913	2064
85°	732	1680	1636



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	3.3
10°-20°	417.3	9.5
20°-30°	627.3	14.3
30°-40°	747.2	17.0
40°-50°	764.7	17.4
50°-60°	688.5	15.7
60°-70°	540.6	12.3
70°-80°	350.9	8.0
80°-90°	108.5	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°	1190.6	27.1
0°-40°	1937.8	44.1
0°-60°	3390.9	77.2
0°-90°	4391.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4391.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1543	1543	1543	1543	1543	
5°	1536	1538	1531	1540	1541	146
15°	1469	1473	1476	1488	1491	414
25°	1335	1346	1360	1382	1386	615
35°	1154	1167	1195	1225	1233	720
45°	930	953	994	1032	1040	717
55°	693	724	777	817	826	621
65°	456	491	554	600	611	454
75°	232	276	347	395	406	245
85°	47	88	109	106	106	57
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1542.6	1542.6	1542.6	1542.6	1542.6
2.5°	1544.0	1544.0	1537.0	1544.0	1545.4
5°	1535.6	1538.4	1531.4	1539.8	1541.2
7.5°	1527.2	1527.2	1523.1	1531.4	1532.8
10°	1511.9	1513.3	1511.9	1521.7	1523.1
12.5°	1492.4	1495.2	1496.6	1506.3	1507.7
15°	1468.7	1472.8	1475.6	1488.2	1491.0
17.5°	1442.2	1446.3	1453.3	1467.3	1470.1
20°	1410.1	1415.7	1424.0	1442.2	1446.3
22.5°	1375.2	1380.8	1394.7	1411.5	1418.5
25°	1334.8	1345.9	1359.9	1382.2	1386.4
27.5°	1294.3	1304.1	1322.2	1345.9	1351.5
30°	1246.9	1262.2	1284.6	1308.3	1313.8
32.5°	1200.9	1216.2	1242.7	1267.8	1274.8
35°	1153.5	1167.4	1195.3	1224.6	1233.0
37.5°	1099.1	1117.2	1147.9	1177.2	1185.5
40°	1041.9	1064.2	1099.1	1129.7	1139.5
42.5°	987.5	1011.2	1046.1	1079.5	1090.7
45°	930.3	952.6	994.5	1032.1	1040.5
47.5°	871.7	896.8	941.5	979.1	993.1
50°	813.1	839.6	887.1	926.1	934.5
52.5°	754.6	782.5	832.7	874.5	878.7
55°	693.2	723.9	776.9	817.3	825.7
57.5°	637.4	663.9	721.1	762.9	772.7
60°	576.0	605.3	666.7	705.7	718.3
62.5°	517.5	548.1	612.3	651.3	662.5
65°	456.1	490.9	553.7	599.7	610.9
67.5°	403.1	436.6	503.5	548.1	559.3
70°	341.7	379.4	450.5	496.5	507.7
72.5°	288.7	327.8	398.9	443.5	460.3
75°	231.5	276.2	347.3	394.7	405.9
77.5°	175.7	227.3	299.9	336.1	336.1
80°	125.5	179.9	246.9	263.6	266.4
82.5°	82.3	135.3	182.7	181.3	181.3
85°	47.4	87.9	108.8	106.0	106.0
87.5°	18.1	36.3	39.1	39.1	37.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)