

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: P311601

Luminaire Tested: **24FCZ2-50-UNV-L82765-S-CP187-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: P311601
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-4500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" 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: 4567.0 lumens
Efficiency: N/A
Efficacy: 105.0 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

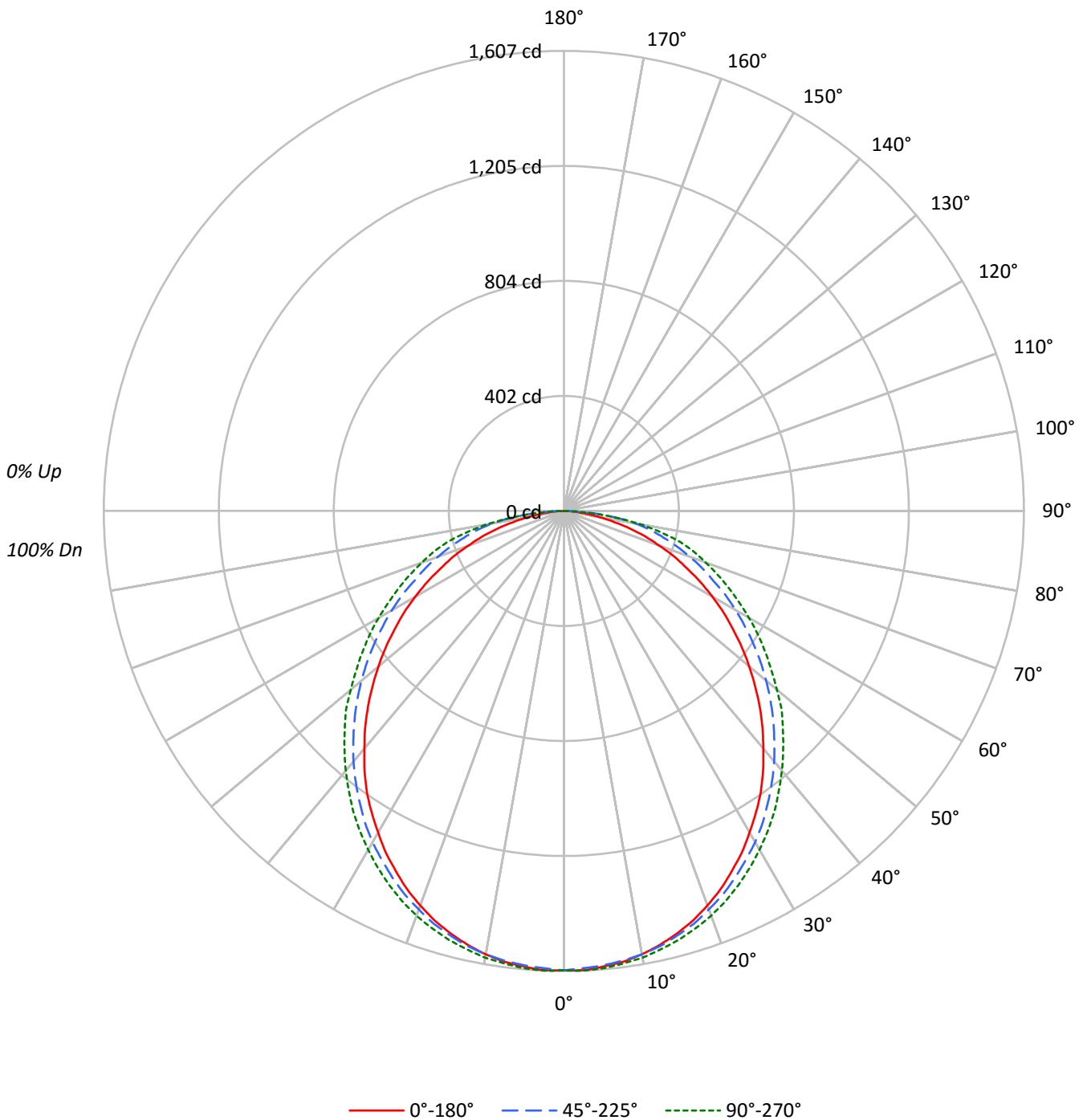
Input Watts (W): 43.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2159	2159	2159
5°	2157	2151	2165
10°	2148	2148	2164
15°	2128	2138	2160
20°	2100	2121	2154
25°	2061	2100	2141
30°	2015	2076	2123
35°	1971	2042	2106
40°	1903	2008	2082
45°	1841	1968	2059
50°	1770	1931	2034
55°	1691	1895	2015
60°	1612	1866	2010
65°	1510	1833	2023
70°	1398	1843	2077
75°	1252	1878	2194
80°	1012	1990	2147
85°	761	1748	1701



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.9	3.3
10°-20°	434.0	9.5
20°-30°	652.4	14.3
30°-40°	777.1	17.0
40°-50°	795.4	17.4
50°-60°	716.0	15.7
60°-70°	562.3	12.3
70°-80°	365.0	8.0
80°-90°	112.9	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°	1238.3	27.1
0°-40°	2015.4	44.1
0°-60°	3526.8	77.2
0°-90°	4567.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4567.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1604	1604	1604	1604	1604	
5°	1597	1600	1593	1602	1603	152
15°	1528	1532	1535	1548	1551	431
25°	1388	1400	1414	1438	1442	640
35°	1200	1214	1243	1274	1282	748
45°	968	991	1034	1074	1082	746
55°	721	753	808	850	859	646
65°	474	511	576	624	635	472
75°	241	287	361	410	422	255
85°	49	91	113	110	110	60
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1604.4	1604.4	1604.4	1604.4	1604.4
2.5°	1605.9	1605.9	1598.6	1605.9	1607.3
5°	1597.2	1600.1	1592.8	1601.5	1603.0
7.5°	1588.5	1588.5	1584.1	1592.8	1594.3
10°	1572.5	1574.0	1572.5	1582.7	1584.1
12.5°	1552.2	1555.1	1556.5	1566.7	1568.2
15°	1527.5	1531.9	1534.8	1547.8	1550.7
17.5°	1500.0	1504.3	1511.6	1526.1	1529.0
20°	1466.6	1472.4	1481.1	1500.0	1504.3
22.5°	1430.3	1436.1	1450.6	1468.1	1475.3
25°	1388.3	1399.9	1414.4	1437.6	1441.9
27.5°	1346.2	1356.4	1375.2	1399.9	1405.7
30°	1296.9	1312.8	1336.0	1360.7	1366.5
32.5°	1249.0	1265.0	1292.5	1318.6	1325.9
35°	1199.7	1214.2	1243.2	1273.7	1282.4
37.5°	1143.1	1162.0	1193.9	1224.3	1233.1
40°	1083.6	1106.8	1143.1	1175.0	1185.2
42.5°	1027.1	1051.7	1088.0	1122.8	1134.4
45°	967.6	990.8	1034.3	1073.5	1082.2
47.5°	906.7	932.8	979.2	1018.4	1032.9
50°	845.7	873.3	922.6	963.2	971.9
52.5°	784.8	813.8	866.0	909.6	913.9
55°	721.0	752.9	808.0	850.1	858.8
57.5°	662.9	690.5	750.0	793.5	803.7
60°	599.1	629.6	693.4	734.0	747.1
62.5°	538.2	570.1	636.8	677.5	689.1
65°	474.4	510.6	575.9	623.8	635.4
67.5°	419.2	454.1	523.7	570.1	581.7
70°	355.4	394.6	468.6	516.4	528.0
72.5°	300.3	340.9	414.9	461.3	478.7
75°	240.8	287.2	361.2	410.5	422.1
77.5°	182.8	236.5	311.9	349.6	349.6
80°	130.6	187.1	256.8	274.2	277.1
82.5°	85.6	140.7	190.0	188.6	188.6
85°	49.3	91.4	113.2	110.2	110.2
87.5°	18.9	37.7	40.6	40.6	39.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)