

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: P310987

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CA08-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: P310987
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-15)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-60HE-UNV-L82765-CA08-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 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: 5386.0 lumens
Efficiency: N/A
Efficacy: 112.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

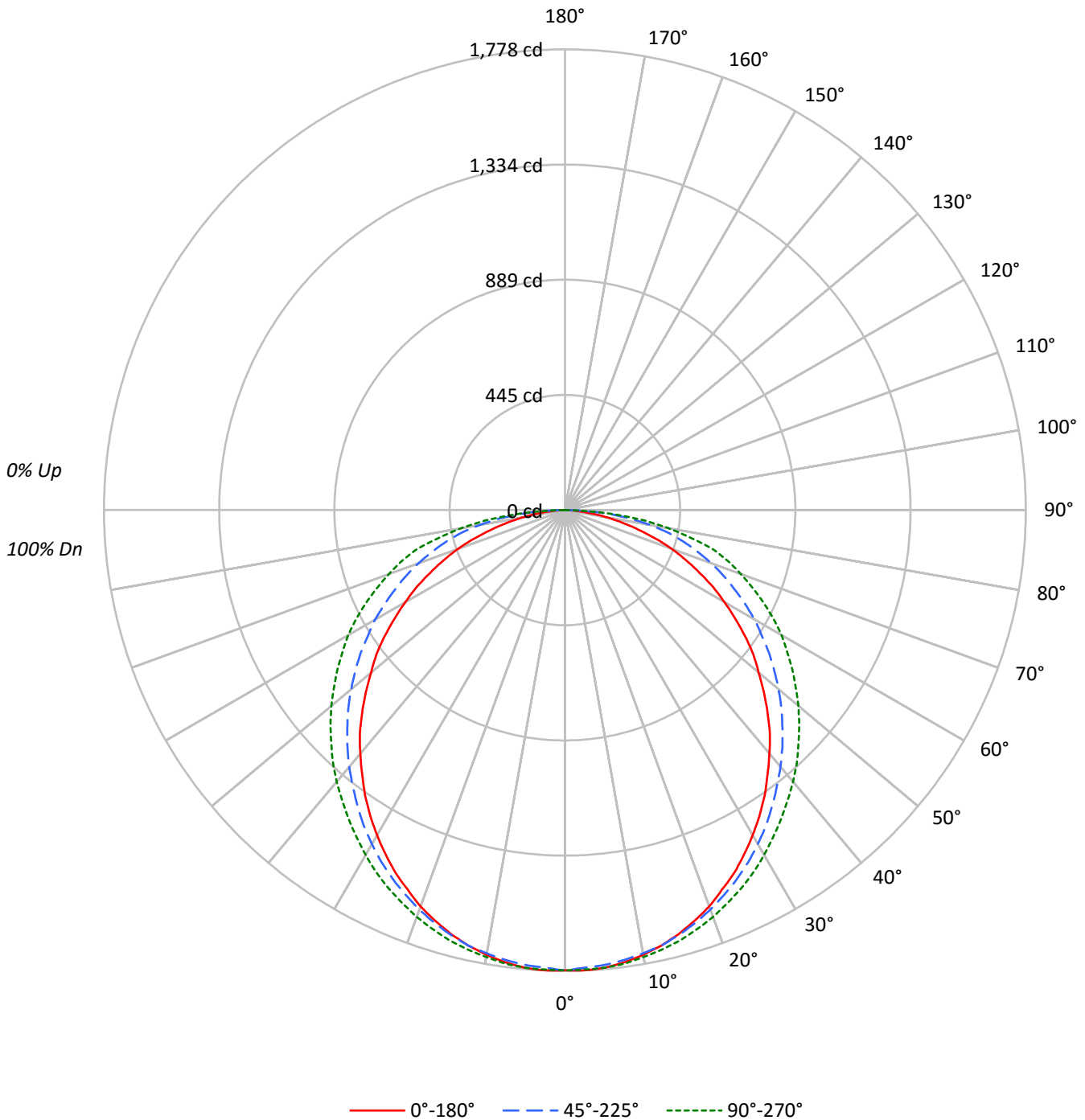
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2390	2390	2390
5°	2394	2380	2394
10°	2380	2373	2393
15°	2360	2365	2395
20°	2331	2349	2392
25°	2295	2332	2390
30°	2252	2313	2388
35°	2207	2289	2389
40°	2156	2272	2404
45°	2105	2258	2424
50°	2042	2252	2461
55°	1991	2255	2511
60°	1914	2274	2597
65°	1826	2298	2691
70°	1729	2369	2840
75°	1542	2471	3103
80°	1316	2617	3171
85°	939	2594	3035



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.1	3.1
10°-20°	480.7	8.9
20°-30°	726.0	13.5
30°-40°	875.0	16.2
40°-50°	918.6	17.1
50°-60°	859.4	16.0
60°-70°	709.7	13.2
70°-80°	483.6	9.0
80°-90°	164.9	3.1
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°	1374.8	25.5
0°-40°	2249.8	41.8
0°-60°	4027.7	74.8
0°-90°	5386.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5386.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1776	1776	1776	1776	1776	
5°	1773	1771	1762	1773	1773	168
15°	1694	1696	1698	1716	1719	478
25°	1546	1553	1571	1601	1610	711
35°	1344	1358	1394	1440	1455	840
45°	1106	1129	1187	1251	1274	853
55°	849	883	961	1040	1070	758
65°	574	622	722	813	845	569
75°	297	364	475	565	597	316
85°	61	120	168	189	197	76
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1776.3	1776.3	1776.3	1776.3	1776.3
2.5°	1778.0	1776.3	1767.3	1776.3	1774.5
5°	1772.7	1770.9	1762.0	1772.7	1772.7
7.5°	1760.2	1760.2	1751.2	1763.7	1765.5
10°	1742.3	1742.3	1736.9	1751.2	1751.2
12.5°	1720.9	1720.9	1720.9	1735.2	1736.9
15°	1694.1	1695.8	1697.6	1715.5	1719.1
17.5°	1661.9	1665.5	1670.8	1692.3	1695.8
20°	1627.9	1631.5	1640.4	1665.5	1670.8
22.5°	1585.0	1594.0	1606.5	1635.1	1640.4
25°	1545.7	1552.9	1570.8	1601.1	1610.1
27.5°	1497.5	1508.2	1531.4	1563.6	1576.1
30°	1449.2	1460.0	1488.6	1526.1	1536.8
32.5°	1397.4	1413.5	1443.9	1483.2	1495.7
35°	1343.8	1358.1	1393.8	1440.3	1454.6
37.5°	1284.8	1304.5	1343.8	1393.8	1411.7
40°	1227.7	1249.1	1293.8	1347.4	1368.8
42.5°	1170.5	1191.9	1241.9	1302.7	1324.2
45°	1106.1	1129.4	1186.6	1250.9	1274.1
47.5°	1041.8	1070.4	1132.9	1200.8	1225.9
50°	975.7	1007.9	1075.8	1147.2	1175.8
52.5°	916.7	947.1	1018.6	1095.4	1122.2
55°	848.8	882.8	961.4	1040.0	1070.4
57.5°	779.1	816.6	900.6	986.4	1016.8
60°	711.2	752.3	845.2	931.0	965.0
62.5°	645.1	686.2	782.7	872.0	906.0
65°	573.6	621.9	721.9	813.1	845.2
67.5°	505.7	557.5	663.0	752.3	784.5
70°	439.6	489.6	602.2	689.8	721.9
72.5°	368.1	425.3	537.9	629.0	663.0
75°	296.6	364.5	475.3	564.7	596.9
77.5°	230.5	300.2	411.0	484.3	500.4
80°	169.8	241.2	337.7	389.6	409.2
82.5°	109.0	180.5	257.3	294.9	310.9
85°	60.8	119.7	168.0	189.4	196.6
87.5°	25.0	51.8	67.9	76.8	76.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)