

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: P314082

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-CP187-W2A-U-4000K**

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: P314082
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-L83050-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4000K 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: 5418.0 lumens
Efficiency: N/A
Efficacy: 111.3 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

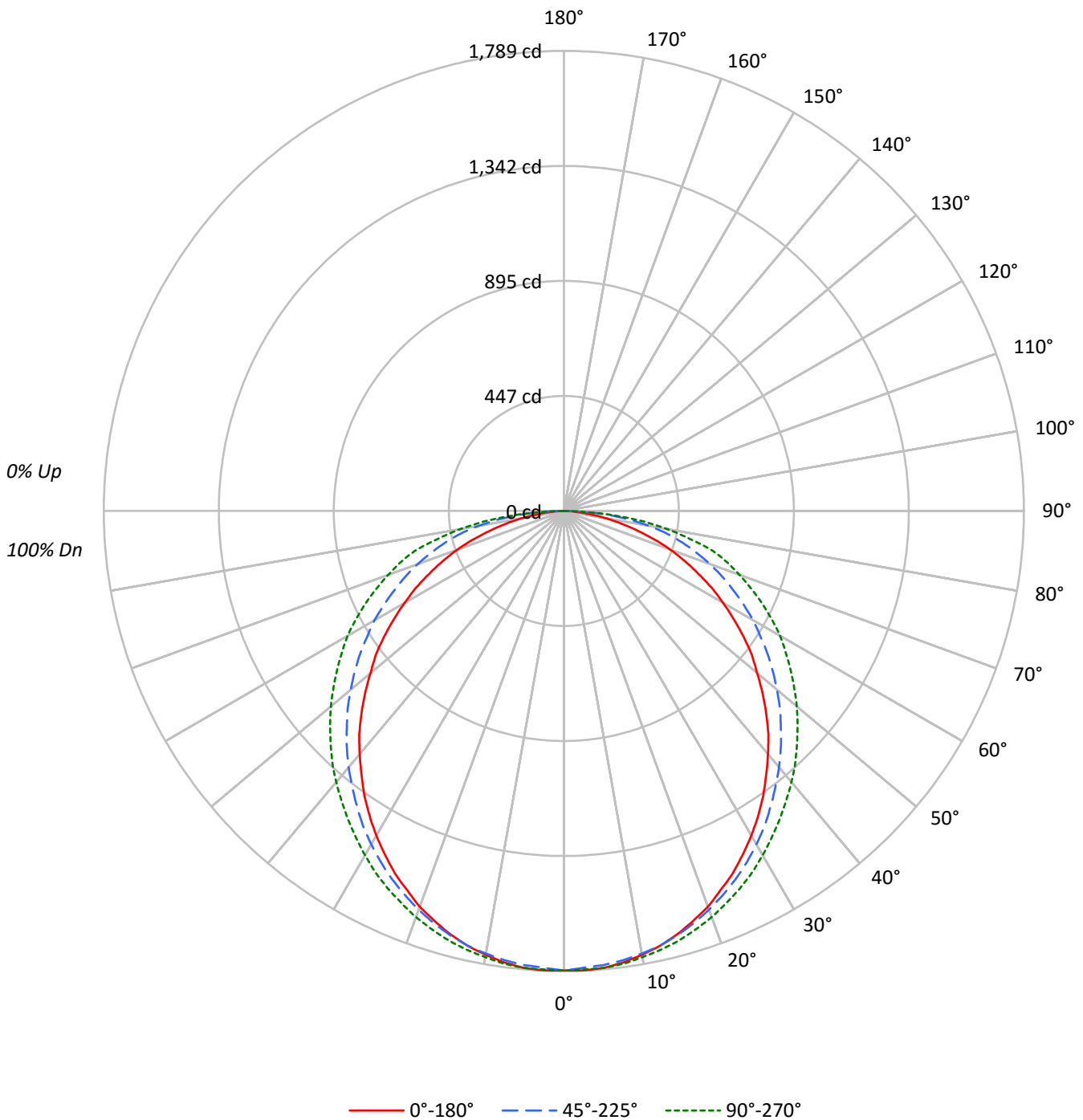
Input Watts (W): 48.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	2404	2404	2404
5°	2408	2394	2408
10°	2395	2387	2407
15°	2374	2379	2409
20°	2345	2363	2407
25°	2308	2346	2404
30°	2265	2326	2402
35°	2220	2303	2403
40°	2169	2286	2419
45°	2117	2271	2439
50°	2054	2265	2476
55°	2003	2269	2526
60°	1925	2288	2612
65°	1837	2312	2707
70°	1740	2383	2857
75°	1551	2486	3121
80°	1323	2632	3189
85°	943	2609	3052



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.1	3.1
10°-20°	483.5	8.9
20°-30°	730.3	13.5
30°-40°	880.2	16.2
40°-50°	924.1	17.1
50°-60°	864.5	16.0
60°-70°	713.9	13.2
70°-80°	486.5	9.0
80°-90°	165.9	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°	1382.9	25.5
0°-40°	2263.1	41.8
0°-60°	4051.7	74.8
0°-90°	5418.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5418.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1787	1787	1787	1787	1787	
5°	1783	1781	1772	1783	1783	169
15°	1704	1706	1708	1726	1729	480
25°	1555	1562	1580	1611	1620	715
35°	1352	1366	1402	1449	1463	845
45°	1113	1136	1194	1258	1282	858
55°	854	888	967	1046	1077	762
65°	577	626	726	818	850	572
75°	298	367	478	568	600	318
85°	61	120	169	190	198	77
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1786.8	1786.8	1786.8	1786.8	1786.8
2.5°	1788.6	1786.8	1777.8	1786.8	1785.0
5°	1783.2	1781.4	1772.4	1783.2	1783.2
7.5°	1770.6	1770.6	1761.6	1774.2	1776.0
10°	1752.7	1752.7	1747.3	1761.6	1761.6
12.5°	1731.1	1731.1	1731.1	1745.5	1747.3
15°	1704.1	1705.9	1707.7	1725.7	1729.3
17.5°	1671.8	1675.4	1680.8	1702.3	1705.9
20°	1637.6	1641.2	1650.2	1675.4	1680.8
22.5°	1594.5	1603.5	1616.0	1644.8	1650.2
25°	1554.9	1562.1	1580.1	1610.6	1619.6
27.5°	1506.4	1517.2	1540.5	1572.9	1585.5
30°	1457.8	1468.6	1497.4	1535.1	1545.9
32.5°	1405.7	1421.9	1452.5	1492.0	1504.6
35°	1351.8	1366.2	1402.1	1448.9	1463.2
37.5°	1292.5	1312.2	1351.8	1402.1	1420.1
40°	1234.9	1256.5	1301.5	1355.4	1377.0
42.5°	1177.4	1199.0	1249.3	1310.4	1332.0
45°	1112.7	1136.1	1193.6	1258.3	1281.7
47.5°	1048.0	1076.8	1139.7	1208.0	1233.2
50°	981.5	1013.8	1082.2	1154.1	1182.8
52.5°	922.2	952.7	1024.6	1101.9	1128.9
55°	853.9	888.0	967.1	1046.2	1076.8
57.5°	783.8	821.5	906.0	992.3	1022.8
60°	715.4	756.8	850.3	936.5	970.7
62.5°	648.9	690.3	787.3	877.2	911.4
65°	577.0	625.6	726.2	817.9	850.3
67.5°	508.7	560.8	666.9	756.8	789.1
70°	442.2	492.5	605.8	693.9	726.2
72.5°	370.3	427.8	541.1	632.8	666.9
75°	298.4	366.7	478.2	568.0	600.4
77.5°	231.9	302.0	413.4	487.1	503.3
80°	170.8	242.7	339.7	391.9	411.6
82.5°	109.7	181.6	258.9	296.6	312.8
85°	61.1	120.4	169.0	190.5	197.7
87.5°	25.2	52.1	68.3	77.3	77.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)