

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: P314455

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-3000K**

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: P314455
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: 24FCZ2-60HE-UNV-L83050-S-CP187-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3000K 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: 5124.0 lumens
Efficiency: N/A
Efficacy: 107.9 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

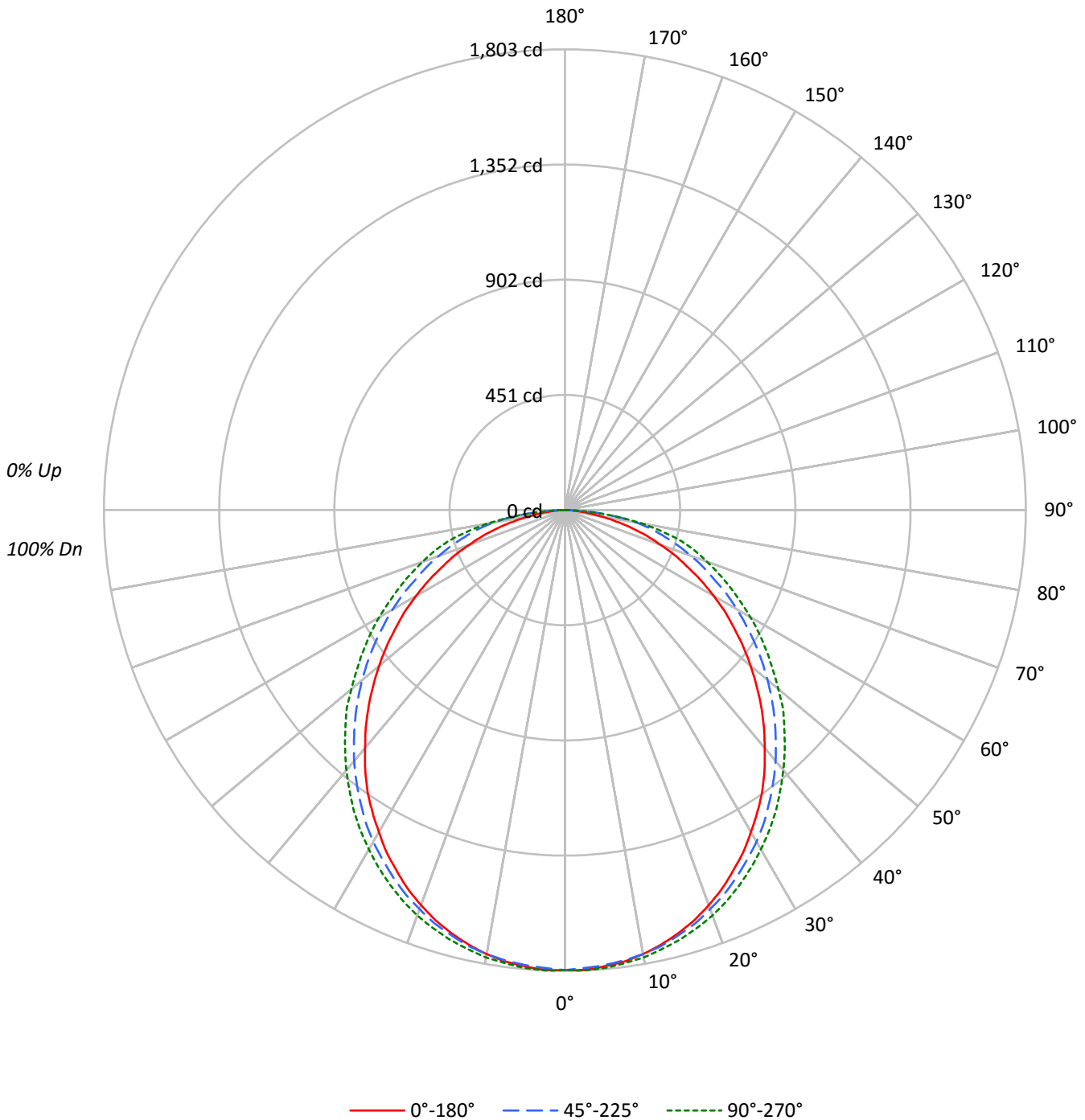
Input Watts (W): 47.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2422	2422	2422
5°	2420	2414	2429
10°	2410	2410	2428
15°	2387	2399	2424
20°	2356	2379	2417
25°	2312	2356	2402
30°	2261	2329	2382
35°	2211	2291	2363
40°	2135	2253	2336
45°	2066	2208	2310
50°	1986	2167	2283
55°	1898	2127	2260
60°	1809	2094	2256
65°	1694	2057	2270
70°	1569	2068	2330
75°	1405	2107	2462
80°	1135	2232	2409
85°	854	1961	1910



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	170.4	3.3
10°-20°	486.9	9.5
20°-30°	732.0	14.3
30°-40°	871.9	17.0
40°-50°	892.4	17.4
50°-60°	803.4	15.7
60°-70°	630.9	12.3
70°-80°	409.5	8.0
80°-90°	126.6	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°	1389.3	27.1
0°-40°	2261.2	44.1
0°-60°	3957.0	77.2
0°-90°	5124.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5124.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1800	1800	1800	1800	1800	
5°	1792	1795	1787	1797	1798	170
15°	1714	1719	1722	1737	1740	483
25°	1558	1571	1587	1613	1618	718
35°	1346	1362	1395	1429	1439	840
45°	1086	1112	1160	1204	1214	837
55°	809	845	907	954	964	725
65°	532	573	646	700	713	530
75°	270	322	405	461	474	286
85°	55	102	127	124	124	67
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1800.1	1800.1	1800.1	1800.1	1800.1
2.5°	1801.7	1801.7	1793.6	1801.7	1803.3
5°	1792.0	1795.2	1787.1	1796.8	1798.5
7.5°	1782.2	1782.2	1777.3	1787.1	1788.7
10°	1764.3	1765.9	1764.3	1775.7	1777.3
12.5°	1741.5	1744.8	1746.4	1757.8	1759.4
15°	1713.8	1718.7	1722.0	1736.6	1739.9
17.5°	1682.9	1687.8	1695.9	1712.2	1715.5
20°	1645.5	1652.0	1661.8	1682.9	1687.8
22.5°	1604.8	1611.3	1627.6	1647.1	1655.2
25°	1557.6	1570.6	1586.9	1612.9	1617.8
27.5°	1510.4	1521.8	1542.9	1570.6	1577.1
30°	1455.0	1473.0	1499.0	1526.7	1533.2
32.5°	1401.3	1419.2	1450.2	1479.5	1487.6
35°	1346.0	1362.3	1394.8	1429.0	1438.8
37.5°	1282.5	1303.7	1339.5	1373.7	1383.4
40°	1215.8	1241.8	1282.5	1318.3	1329.7
42.5°	1152.3	1180.0	1220.7	1259.7	1272.8
45°	1085.6	1111.6	1160.5	1204.4	1214.2
47.5°	1017.2	1046.5	1098.6	1142.6	1158.8
50°	948.9	979.8	1035.1	1080.7	1090.5
52.5°	880.5	913.1	971.7	1020.5	1025.4
55°	808.9	844.7	906.6	953.8	963.5
57.5°	743.8	774.7	841.5	890.3	901.7
60°	672.2	706.4	778.0	823.6	838.2
62.5°	603.8	639.6	714.5	760.1	773.1
65°	532.2	572.9	646.1	699.9	712.9
67.5°	470.4	509.4	587.6	639.6	652.7
70°	398.8	442.7	525.7	579.4	592.4
72.5°	336.9	382.5	465.5	517.6	537.1
75°	270.2	322.3	405.3	460.6	473.6
77.5°	205.1	265.3	349.9	392.2	392.2
80°	146.5	210.0	288.1	307.6	310.9
82.5°	96.0	157.9	213.2	211.6	211.6
85°	55.3	102.5	127.0	123.7	123.7
87.5°	21.2	42.3	45.6	45.6	43.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)