

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: P314080

Luminaire Tested: **24FCZ2-60HE-UNV-L83050-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: P314080
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-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED 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: 4877.0 lumens
Efficiency: N/A
Efficacy: 102.7 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

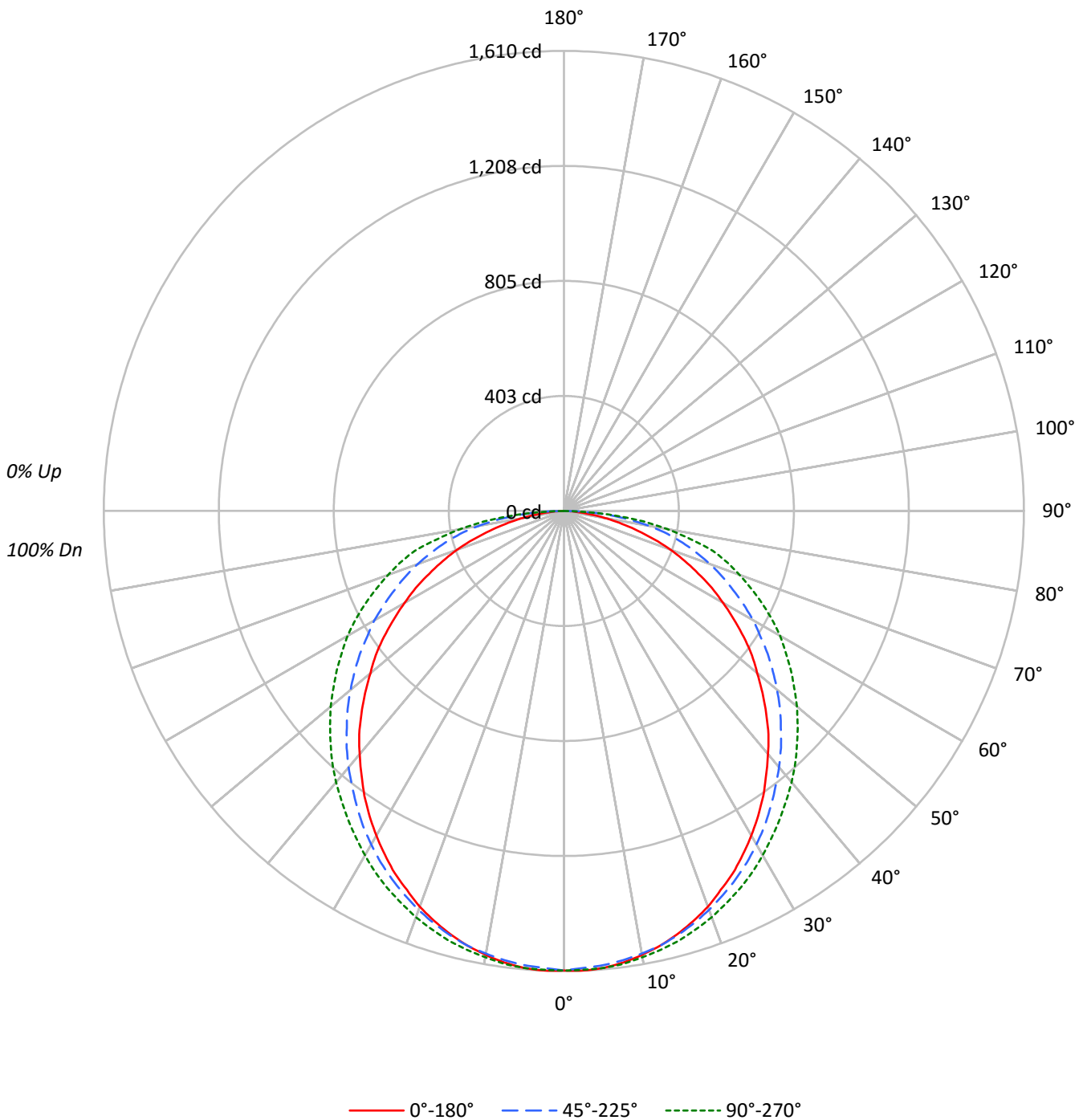
Input Watts (W): 47.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	2164	2164	2164
5°	2168	2155	2168
10°	2155	2149	2166
15°	2137	2141	2168
20°	2111	2127	2166
25°	2078	2112	2164
30°	2039	2094	2162
35°	1999	2073	2163
40°	1952	2058	2177
45°	1906	2044	2195
50°	1849	2039	2229
55°	1803	2042	2274
60°	1733	2060	2351
65°	1654	2081	2437
70°	1566	2145	2572
75°	1396	2237	2809
80°	1191	2369	2871
85°	849	2348	2748



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.2	3.1
10°-20°	435.2	8.9
20°-30°	657.4	13.5
30°-40°	792.3	16.2
40°-50°	831.8	17.1
50°-60°	778.2	16.0
60°-70°	642.6	13.2
70°-80°	437.9	9.0
80°-90°	149.3	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°	1244.8	25.5
0°-40°	2037.2	41.8
0°-60°	3647.1	74.8
0°-90°	4877.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4877.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1608	1608	1608	1608	1608	
5°	1605	1604	1595	1605	1605	152
15°	1534	1536	1537	1553	1557	432
25°	1400	1406	1422	1450	1458	644
35°	1217	1230	1262	1304	1317	760
45°	1002	1023	1074	1133	1154	772
55°	769	799	870	942	969	686
65°	519	563	654	736	765	515
75°	269	330	430	511	540	286
85°	55	108	152	172	178	69
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1608.4	1608.4	1608.4	1608.4	1608.4
2.5°	1610.0	1608.4	1600.3	1608.4	1606.8
5°	1605.2	1603.5	1595.4	1605.2	1605.2
7.5°	1593.8	1593.8	1585.7	1597.1	1598.7
10°	1577.6	1577.6	1572.8	1585.7	1585.7
12.5°	1558.2	1558.2	1558.2	1571.2	1572.8
15°	1534.0	1535.6	1537.2	1553.4	1556.6
17.5°	1504.8	1508.1	1512.9	1532.3	1535.6
20°	1474.1	1477.3	1485.4	1508.1	1512.9
22.5°	1435.3	1443.3	1454.7	1480.6	1485.4
25°	1399.7	1406.1	1422.3	1449.8	1457.9
27.5°	1356.0	1365.7	1386.7	1415.8	1427.2
30°	1312.3	1322.0	1347.9	1381.9	1391.6
32.5°	1265.4	1279.9	1307.4	1343.0	1354.4
35°	1216.8	1229.8	1262.1	1304.2	1317.1
37.5°	1163.4	1181.2	1216.8	1262.1	1278.3
40°	1111.6	1131.1	1171.5	1220.0	1239.5
42.5°	1059.9	1079.3	1124.6	1179.6	1199.0
45°	1001.6	1022.6	1074.4	1132.7	1153.7
47.5°	943.4	969.2	1025.9	1087.4	1110.0
50°	883.5	912.6	974.1	1038.8	1064.7
52.5°	830.1	857.6	922.3	991.9	1016.2
55°	768.6	799.3	870.5	941.7	969.2
57.5°	705.5	739.5	815.5	893.2	920.7
60°	644.0	681.2	765.4	843.0	873.8
62.5°	584.1	621.4	708.7	789.6	820.4
65°	519.4	563.1	653.7	736.2	765.4
67.5°	457.9	504.8	600.3	681.2	710.3
70°	398.1	443.4	545.3	624.6	653.7
72.5°	333.3	385.1	487.0	569.6	600.3
75°	268.6	330.1	430.4	511.3	540.4
77.5°	208.7	271.8	372.2	438.5	453.1
80°	153.7	218.4	305.8	352.7	370.5
82.5°	98.7	163.4	233.0	267.0	281.5
85°	55.0	108.4	152.1	171.5	178.0
87.5°	22.7	46.9	61.5	69.6	69.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)