

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: P311019

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-W2A-U-5700K**

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: P311019
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-CP187-W2A-U-5700K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5700K 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: 5380.0 lumens
Efficiency: N/A
Efficacy: 110.0 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

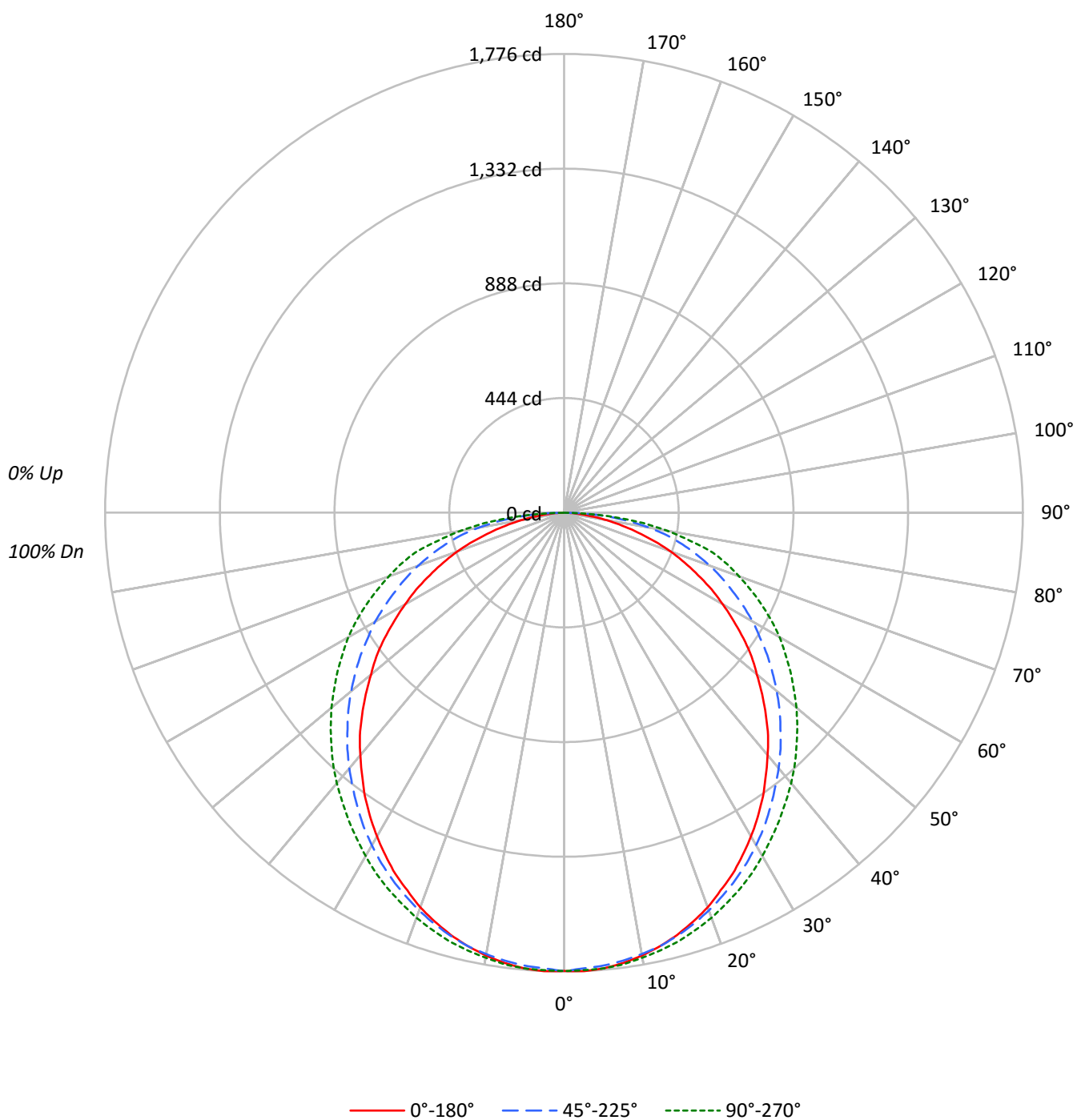
Input Watts (W): 48.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
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°	2387	2387	2387
5°	2392	2377	2392
10°	2378	2370	2390
15°	2357	2362	2392
20°	2328	2346	2390
25°	2292	2329	2388
30°	2249	2310	2385
35°	2205	2287	2387
40°	2154	2270	2402
45°	2102	2255	2422
50°	2040	2249	2458
55°	1989	2253	2508
60°	1912	2272	2594
65°	1824	2296	2688
70°	1727	2366	2837
75°	1540	2468	3099
80°	1314	2614	3168
85°	937	2590	3030



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.9	3.1
10°-20°	480.1	8.9
20°-30°	725.2	13.5
30°-40°	874.0	16.2
40°-50°	917.6	17.1
50°-60°	858.4	16.0
60°-70°	708.9	13.2
70°-80°	483.1	9.0
80°-90°	164.8	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°	1373.2	25.5
0°-40°	2247.3	41.8
0°-60°	4023.3	74.8
0°-90°	5380.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5380.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1774	1774	1774	1774	1774	
5°	1771	1769	1760	1771	1771	168
15°	1692	1694	1696	1714	1717	477
25°	1544	1551	1569	1599	1608	710
35°	1342	1357	1392	1439	1453	839
45°	1105	1128	1185	1250	1273	852
55°	848	882	960	1039	1069	757
65°	573	621	721	812	844	568
75°	296	364	475	564	596	316
85°	61	120	168	189	196	76
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1774.3	1774.3	1774.3	1774.3	1774.3
2.5°	1776.1	1774.3	1765.4	1774.3	1772.5
5°	1770.7	1768.9	1760.0	1770.7	1770.7
7.5°	1758.2	1758.2	1749.3	1761.8	1763.6
10°	1740.4	1740.4	1735.0	1749.3	1749.3
12.5°	1718.9	1718.9	1718.9	1733.2	1735.0
15°	1692.2	1694.0	1695.7	1713.6	1717.2
17.5°	1660.0	1663.6	1669.0	1690.4	1694.0
20°	1626.1	1629.7	1638.6	1663.6	1669.0
22.5°	1583.3	1592.2	1604.7	1633.3	1638.6
25°	1544.0	1551.2	1569.0	1599.3	1608.3
27.5°	1495.8	1506.5	1529.7	1561.9	1574.4
30°	1447.6	1458.3	1486.9	1524.4	1535.1
32.5°	1395.9	1411.9	1442.3	1481.5	1494.0
35°	1342.3	1356.6	1392.3	1438.7	1453.0
37.5°	1283.4	1303.0	1342.3	1392.3	1410.1
40°	1226.3	1247.7	1292.3	1345.9	1367.3
42.5°	1169.2	1190.6	1240.6	1301.3	1322.7
45°	1104.9	1128.1	1185.2	1249.5	1272.7
47.5°	1040.6	1069.2	1131.7	1199.5	1224.5
50°	974.6	1006.7	1074.6	1146.0	1174.5
52.5°	915.7	946.0	1017.4	1094.2	1121.0
55°	847.9	881.8	960.3	1038.9	1069.2
57.5°	778.3	815.7	899.6	985.3	1015.7
60°	710.4	751.5	844.3	930.0	963.9
62.5°	644.4	685.4	781.8	871.1	905.0
65°	573.0	621.2	721.1	812.2	844.3
67.5°	505.2	556.9	662.2	751.5	783.6
70°	439.1	489.1	601.5	689.0	721.1
72.5°	367.7	424.8	537.3	628.3	662.2
75°	296.3	364.1	474.8	564.1	596.2
77.5°	230.3	299.9	410.5	483.7	499.8
80°	169.6	241.0	337.4	389.1	408.8
82.5°	108.9	180.3	257.0	294.5	310.6
85°	60.7	119.6	167.8	189.2	196.3
87.5°	25.0	51.8	67.8	76.8	76.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)