

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: P310985

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CA08-W2A-U-2700K**

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: P310985
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-2700K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 2700K 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

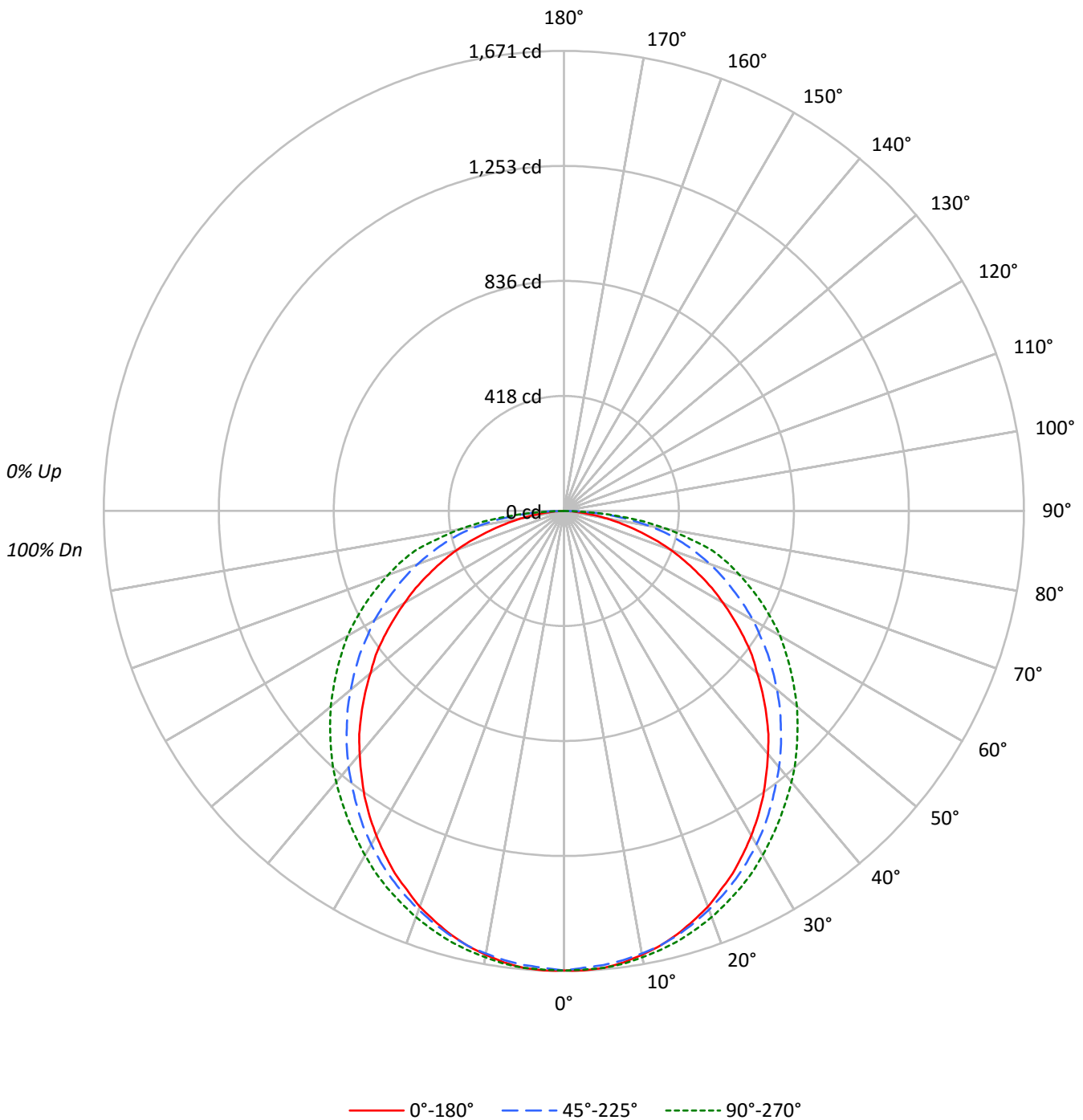
Lumens per Lamp: N/A
Luminaire Lumens: 5061.0 lumens
Efficiency: N/A
Efficacy: 106.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 47.6
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



TEST NUMBER: P310985
CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA08-W2A-U-2700K

Luminous Intensity Polar Plot





TEST NUMBER: P310985

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA08-W2A-U-2700K

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°	2246	2246	2246
5°	2250	2236	2250
10°	2237	2230	2248
15°	2217	2222	2250
20°	2190	2207	2248
25°	2156	2191	2246
30°	2116	2173	2244
35°	2074	2151	2245
40°	2026	2135	2259
45°	1978	2122	2278
50°	1919	2116	2313
55°	1871	2119	2359
60°	1798	2137	2440
65°	1716	2160	2528
70°	1625	2226	2669
75°	1449	2322	2915
80°	1236	2459	2979
85°	881	2436	2851



TEST NUMBER: P310985

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA08-W2A-U-2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	158.0	3.1
10°-20°	451.7	8.9
20°-30°	682.2	13.5
30°-40°	822.2	16.2
40°-50°	863.2	17.1
50°-60°	807.5	16.0
60°-70°	666.9	13.2
70°-80°	454.4	9.0
80°-90°	155.0	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°	1291.8	25.5
0°-40°	2114.0	41.8
0°-60°	3784.7	74.8
0°-90°	5061.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5061.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1669	1669	1669	1669	1669	
5°	1666	1664	1656	1666	1666	158
15°	1592	1594	1595	1612	1615	449
25°	1452	1459	1476	1504	1513	668
35°	1263	1276	1310	1353	1367	789
45°	1039	1061	1115	1175	1197	802
55°	798	830	903	977	1006	712
65°	539	584	678	764	794	535
75°	279	342	447	531	561	297
85°	57	112	158	178	185	71
90°	0	0	0	0	0	



TEST NUMBER: P310985

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA08-W2A-U-2700K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1669.1	1669.1	1669.1	1669.1	1669.1
2.5°	1670.8	1669.1	1660.7	1669.1	1667.4
5°	1665.7	1664.0	1655.6	1665.7	1665.7
7.5°	1654.0	1654.0	1645.6	1657.3	1659.0
10°	1637.2	1637.2	1632.1	1645.6	1645.6
12.5°	1617.0	1617.0	1617.0	1630.5	1632.1
15°	1591.8	1593.5	1595.2	1612.0	1615.3
17.5°	1561.6	1565.0	1570.0	1590.2	1593.5
20°	1529.7	1533.1	1541.5	1565.0	1570.0
22.5°	1489.4	1497.8	1509.6	1536.4	1541.5
25°	1452.5	1459.2	1476.0	1504.5	1512.9
27.5°	1407.1	1417.2	1439.0	1469.3	1481.0
30°	1361.8	1371.9	1398.7	1434.0	1444.1
32.5°	1313.1	1328.2	1356.8	1393.7	1405.4
35°	1262.7	1276.2	1309.7	1353.4	1366.8
37.5°	1207.3	1225.8	1262.7	1309.7	1326.5
40°	1153.6	1173.7	1215.7	1266.1	1286.2
42.5°	1099.8	1120.0	1167.0	1224.1	1244.2
45°	1039.4	1061.2	1115.0	1175.4	1197.2
47.5°	978.9	1005.8	1064.6	1128.4	1151.9
50°	916.8	947.0	1010.8	1078.0	1104.9
52.5°	861.4	889.9	957.1	1029.3	1054.5
55°	797.6	829.5	903.4	977.3	1005.8
57.5°	732.1	767.4	846.3	926.9	955.4
60°	668.3	706.9	794.2	874.8	906.7
62.5°	606.2	644.8	735.5	819.4	851.3
65°	539.0	584.3	678.4	764.0	794.2
67.5°	475.2	523.9	623.0	706.9	737.1
70°	413.1	460.1	565.9	648.2	678.4
72.5°	345.9	399.6	505.4	591.1	623.0
75°	278.7	342.5	446.7	530.6	560.8
77.5°	216.6	282.1	386.2	455.0	470.2
80°	159.5	226.7	317.4	366.1	384.5
82.5°	102.4	169.6	241.8	277.1	292.2
85°	57.1	112.5	157.8	178.0	184.7
87.5°	23.5	48.7	63.8	72.2	72.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)