

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: P310997

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CA125-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: P310997
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-CA125-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.125" ACRYLIC 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: 5485.0 lumens
Efficiency: N/A
Efficacy: 113.8 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

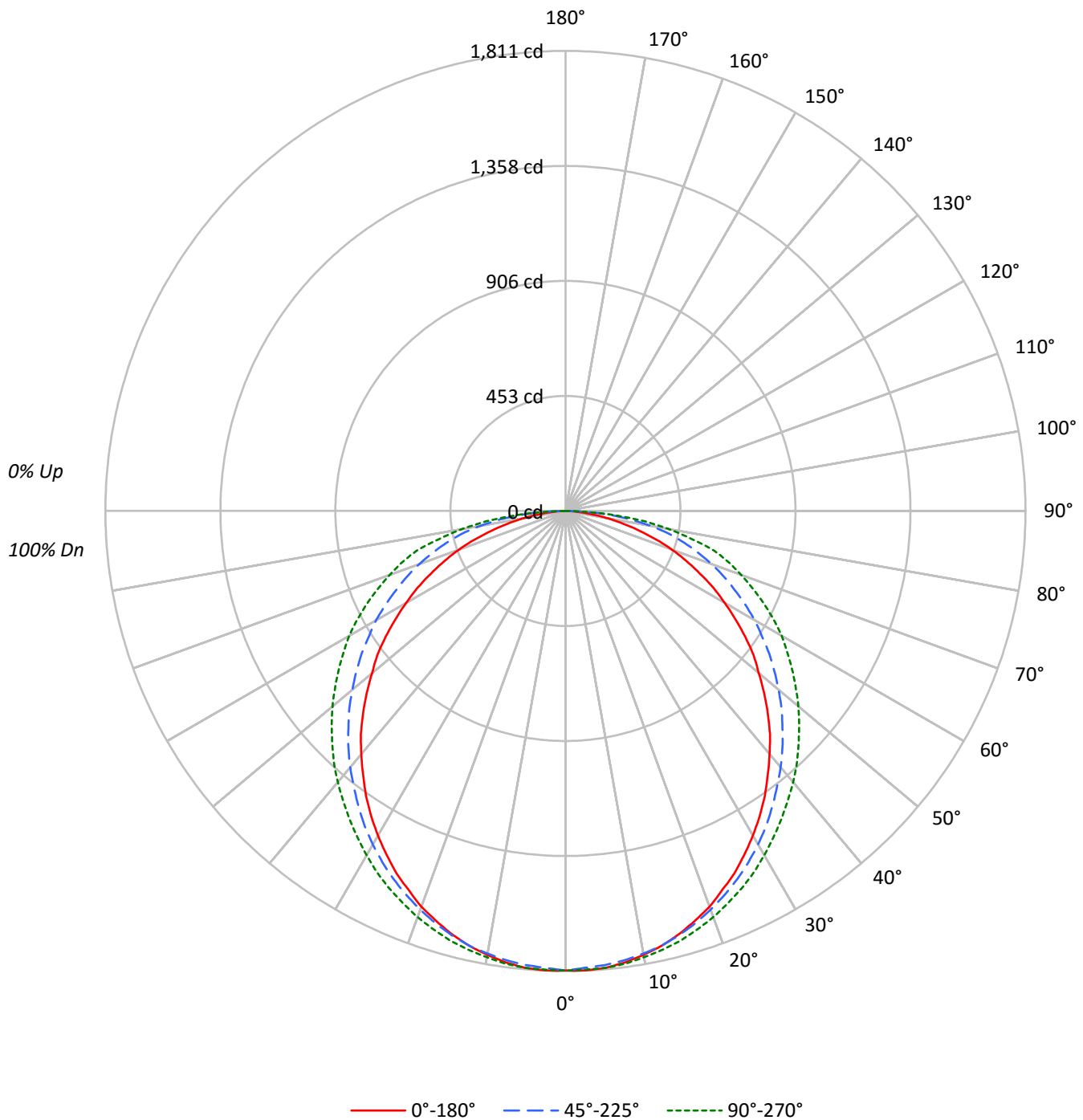
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P310997

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA125-W2A-U-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P310997

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA125-W2A-U-4000K

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		0
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		100
1	108	103	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2434	2434	2434
5°	2438	2423	2438
10°	2424	2417	2437
15°	2403	2408	2439
20°	2374	2392	2436
25°	2337	2375	2434
30°	2293	2355	2431
35°	2248	2332	2433
40°	2196	2314	2448
45°	2144	2299	2469
50°	2080	2293	2506
55°	2028	2297	2557
60°	1949	2316	2644
65°	1860	2341	2741
70°	1761	2413	2892
75°	1570	2517	3160
80°	1340	2665	3229
85°	956	2641	3091



TEST NUMBER: P310997

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA125-W2A-U-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.2	3.1
10°-20°	489.5	8.9
20°-30°	739.3	13.5
30°-40°	891.1	16.2
40°-50°	935.5	17.1
50°-60°	875.2	16.0
60°-70°	722.8	13.2
70°-80°	492.5	9.0
80°-90°	168.0	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°	1400.0	25.5
0°-40°	2291.1	41.8
0°-60°	4101.8	74.8
0°-90°	5485.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5485.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1809	1809	1809	1809	1809	
5°	1805	1803	1794	1805	1805	171
15°	1725	1727	1729	1747	1751	486
25°	1574	1581	1600	1631	1640	724
35°	1368	1383	1420	1467	1481	855
45°	1126	1150	1208	1274	1298	869
55°	864	899	979	1059	1090	772
65°	584	633	735	828	861	579
75°	302	371	484	575	608	322
85°	62	122	171	193	200	77
90°	0	0	0	0	0	



TEST NUMBER: P310997

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CA125-W2A-U-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1808.9	1808.9	1808.9	1808.9	1808.9
2.5°	1810.7	1808.9	1799.8	1808.9	1807.1
5°	1805.3	1803.4	1794.3	1805.3	1805.3
7.5°	1792.5	1792.5	1783.4	1796.2	1798.0
10°	1774.3	1774.3	1768.9	1783.4	1783.4
12.5°	1752.5	1752.5	1752.5	1767.0	1768.9
15°	1725.2	1727.0	1728.8	1747.0	1750.7
17.5°	1692.4	1696.1	1701.5	1723.4	1727.0
20°	1657.9	1661.5	1670.6	1696.1	1701.5
22.5°	1614.2	1623.3	1636.0	1665.1	1670.6
25°	1574.1	1581.4	1599.6	1630.6	1639.7
27.5°	1525.0	1535.9	1559.6	1592.3	1605.1
30°	1475.9	1486.8	1515.9	1554.1	1565.0
32.5°	1423.1	1439.5	1470.4	1510.5	1523.2
35°	1368.5	1383.1	1419.5	1466.8	1481.3
37.5°	1308.5	1328.5	1368.5	1419.5	1437.7
40°	1250.2	1272.1	1317.6	1372.1	1394.0
42.5°	1192.0	1213.8	1264.8	1326.7	1348.5
45°	1126.5	1150.1	1208.4	1273.9	1297.5
47.5°	1061.0	1090.1	1153.8	1222.9	1248.4
50°	993.6	1026.4	1095.5	1168.3	1197.4
52.5°	933.6	964.5	1037.3	1115.6	1142.8
55°	864.4	899.0	979.1	1059.1	1090.1
57.5°	793.4	831.7	917.2	1004.5	1035.5
60°	724.3	766.1	860.8	948.1	982.7
62.5°	657.0	698.8	797.1	888.1	922.7
65°	584.2	633.3	735.2	828.0	860.8
67.5°	515.0	567.8	675.2	766.1	798.9
70°	447.7	498.6	613.3	702.5	735.2
72.5°	374.9	433.1	547.8	640.6	675.2
75°	302.1	371.2	484.1	575.1	607.8
77.5°	234.8	305.7	418.6	493.2	509.6
80°	172.9	245.7	343.9	396.7	416.7
82.5°	111.0	183.8	262.1	300.3	316.6
85°	61.9	121.9	171.1	192.9	200.2
87.5°	25.5	52.8	69.2	78.3	78.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)