

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: P311014

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3500K**

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: P311014
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-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3500K 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: 5040.0 lumens
Efficiency: N/A
Efficacy: 105.4 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

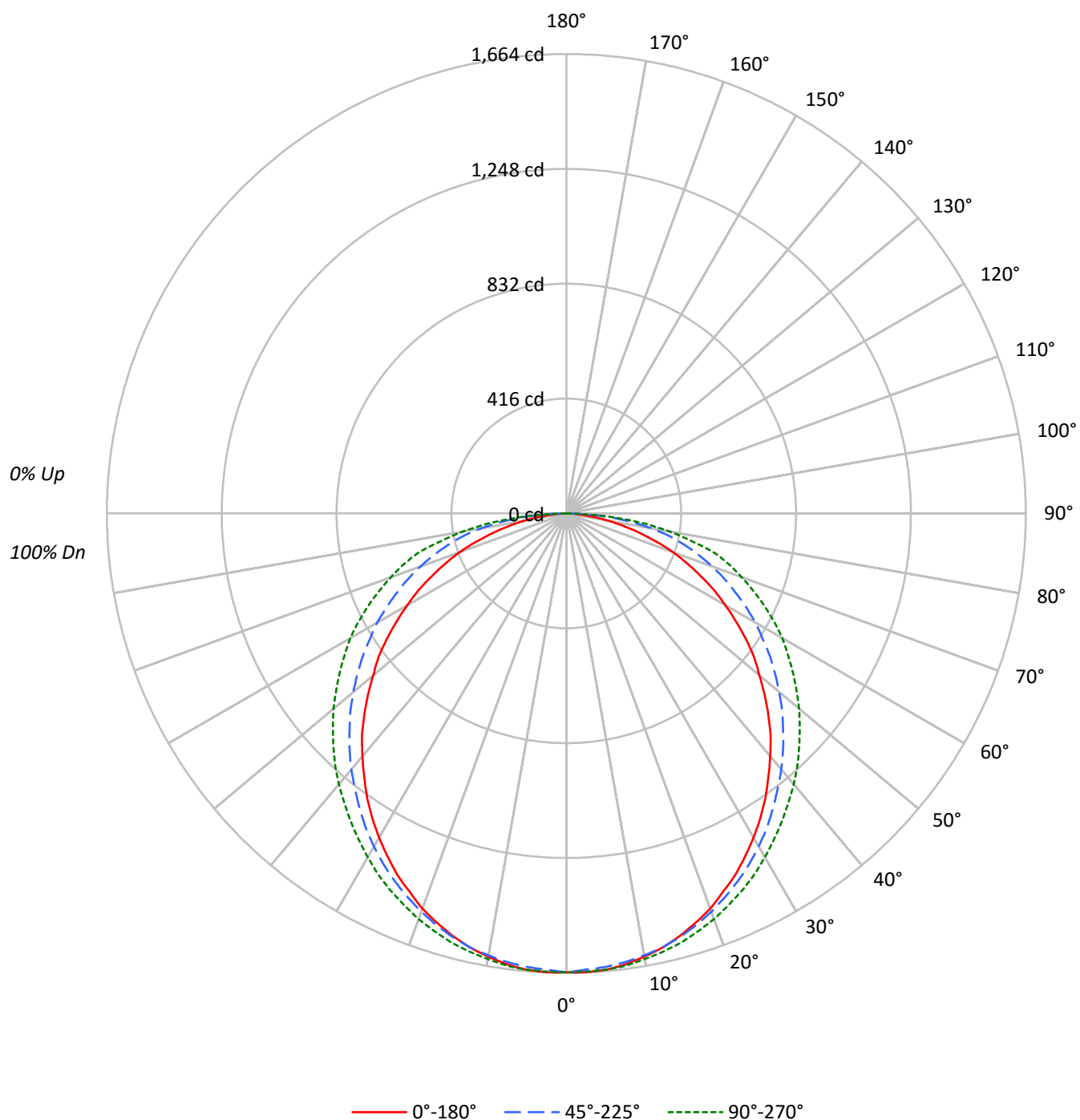
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311014

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3500K

Luminous Intensity Polar Plot





TEST NUMBER: P311014

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3500K

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°	2236	2236	2236
5°	2240	2227	2240
10°	2228	2221	2239
15°	2208	2213	2241
20°	2181	2198	2239
25°	2147	2182	2237
30°	2107	2164	2234
35°	2065	2142	2236
40°	2018	2126	2250
45°	1970	2113	2269
50°	1911	2107	2303
55°	1863	2110	2350
60°	1791	2128	2430
65°	1709	2151	2518
70°	1618	2217	2658
75°	1443	2312	2903
80°	1231	2448	2967
85°	878	2427	2839



TEST NUMBER: P311014

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.3	3.1
10°-20°	449.8	8.9
20°-30°	679.4	13.5
30°-40°	818.8	16.2
40°-50°	859.6	17.1
50°-60°	804.2	16.0
60°-70°	664.1	13.2
70°-80°	452.5	9.0
80°-90°	154.3	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°	1286.5	25.5
0°-40°	2105.2	41.8
0°-60°	3769.0	74.8
0°-90°	5040.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5040.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1662	1662	1662	1662	1662	
5°	1659	1657	1649	1659	1659	157
15°	1585	1587	1589	1605	1609	447
25°	1446	1453	1470	1498	1507	666
35°	1258	1271	1304	1348	1361	786
45°	1035	1057	1110	1170	1192	798
55°	794	826	900	973	1002	709
65°	537	582	676	761	791	532
75°	278	341	445	528	558	296
85°	57	112	157	177	184	71
90°	0	0	0	0	0	



TEST NUMBER: P311014

CATALOG NUMBER: 24FCZ2-60HE-UNV-L82765-CP187-W2A-U-3500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1662.1	1662.1	1662.1	1662.1	1662.1
2.5°	1663.8	1662.1	1653.8	1662.1	1660.5
5°	1658.8	1657.1	1648.8	1658.8	1658.8
7.5°	1647.1	1647.1	1638.7	1650.4	1652.1
10°	1630.4	1630.4	1625.4	1638.7	1638.7
12.5°	1610.3	1610.3	1610.3	1623.7	1625.4
15°	1585.2	1586.9	1588.6	1605.3	1608.6
17.5°	1555.1	1558.5	1563.5	1583.6	1586.9
20°	1523.4	1526.7	1535.1	1558.5	1563.5
22.5°	1483.2	1491.6	1503.3	1530.0	1535.1
25°	1446.4	1453.1	1469.8	1498.3	1506.6
27.5°	1401.3	1411.3	1433.1	1463.2	1474.9
30°	1356.1	1366.2	1392.9	1428.0	1438.1
32.5°	1307.6	1322.7	1351.1	1387.9	1399.6
35°	1257.5	1270.9	1304.3	1347.8	1361.2
37.5°	1202.3	1220.7	1257.5	1304.3	1321.0
40°	1148.8	1168.9	1210.7	1260.8	1280.9
42.5°	1095.3	1115.3	1162.2	1219.0	1239.1
45°	1035.1	1056.8	1110.3	1170.5	1192.3
47.5°	974.9	1001.6	1060.2	1123.7	1147.1
50°	913.0	943.1	1006.7	1073.5	1100.3
52.5°	857.8	886.3	953.1	1025.0	1050.1
55°	794.3	826.1	899.6	973.2	1001.6
57.5°	729.1	764.2	842.8	923.0	951.5
60°	665.5	704.0	790.9	871.2	903.0
62.5°	603.7	642.1	732.4	816.0	847.8
65°	536.8	581.9	675.6	760.8	790.9
67.5°	473.2	521.7	620.4	704.0	734.1
70°	411.4	458.2	563.5	645.5	675.6
72.5°	344.5	398.0	503.3	588.6	620.4
75°	277.6	341.1	444.8	528.4	558.5
77.5°	215.7	280.9	384.6	453.2	468.2
80°	158.9	225.7	316.0	364.5	382.9
82.5°	102.0	168.9	240.8	275.9	291.0
85°	56.9	112.0	157.2	177.3	183.9
87.5°	23.4	48.5	63.5	71.9	71.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)