

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: P311105

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CP187-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: P311105
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: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB 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: 6021.0 lumens
Efficiency: N/A
Efficacy: 103.1 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

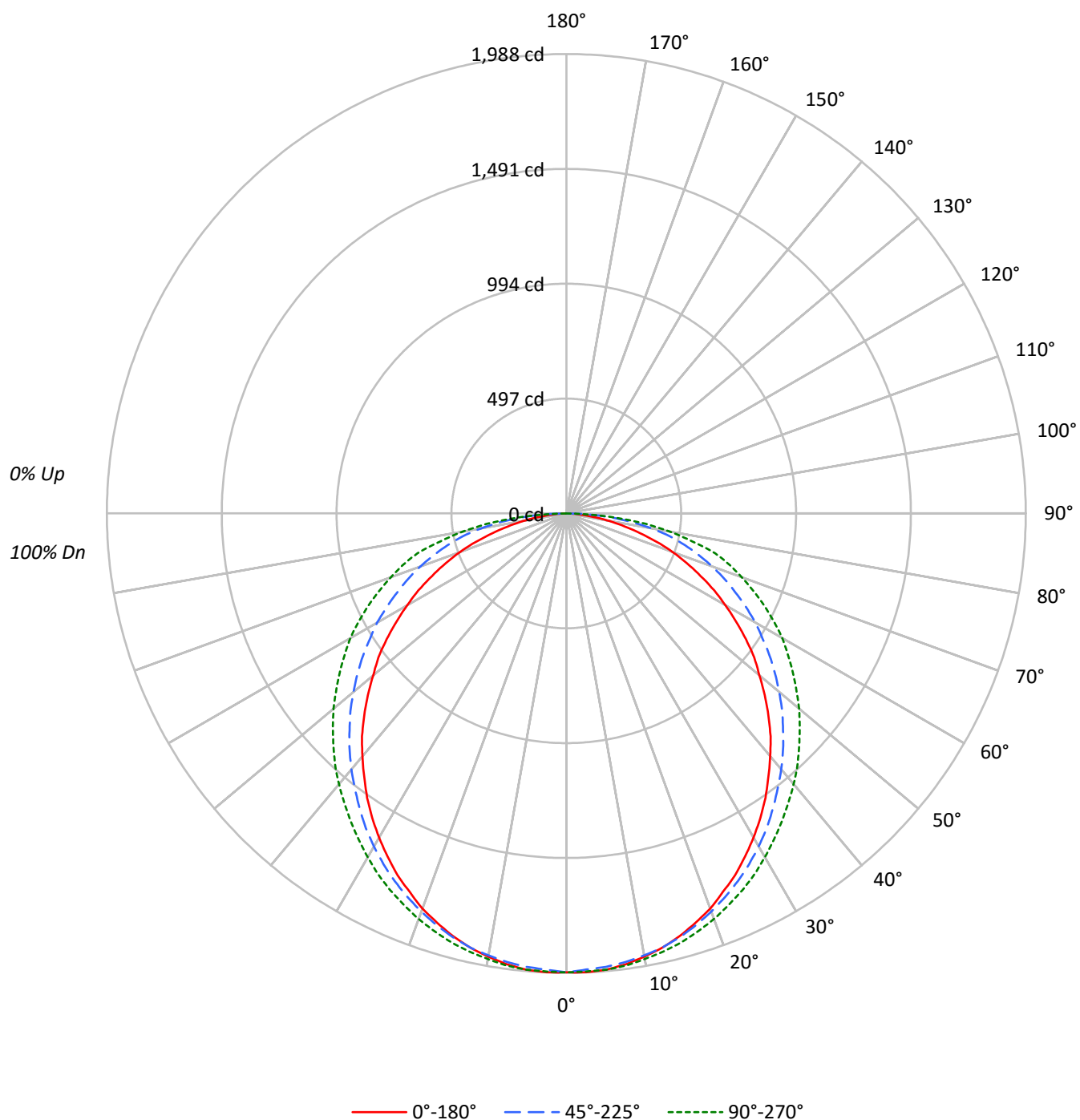
Input Watts (W): 58.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311105

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P311105

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-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°	2672	2672	2672
5°	2677	2660	2677
10°	2661	2653	2675
15°	2638	2644	2677
20°	2606	2626	2674
25°	2565	2607	2672
30°	2517	2585	2669
35°	2467	2559	2671
40°	2410	2540	2688
45°	2353	2524	2710
50°	2283	2517	2752
55°	2226	2521	2807
60°	2140	2543	2903
65°	2041	2570	3008
70°	1933	2648	3175
75°	1724	2763	3468
80°	1471	2926	3545
85°	1048	2899	3392



TEST NUMBER: P311105

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.9	3.1
10°-20°	537.3	8.9
20°-30°	811.6	13.5
30°-40°	978.2	16.2
40°-50°	1026.9	17.1
50°-60°	960.7	16.0
60°-70°	793.4	13.2
70°-80°	540.6	9.0
80°-90°	184.4	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°	1536.9	25.5
0°-40°	2515.0	41.8
0°-60°	4502.6	74.8
0°-90°	6021.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6021.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1986	1986	1986	1986	1986	
5°	1982	1980	1970	1982	1982	188
15°	1894	1896	1898	1918	1922	534
25°	1728	1736	1756	1790	1800	795
35°	1502	1518	1558	1610	1626	939
45°	1237	1262	1326	1398	1424	954
55°	949	987	1075	1163	1197	847
65°	641	695	807	909	945	636
75°	332	408	531	631	667	354
85°	68	134	188	212	220	85
90°	0	0	0	0	0	



TEST NUMBER: P311105

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1985.7	1985.7	1985.7	1985.7	1985.7
2.5°	1987.7	1985.7	1975.7	1985.7	1983.7
5°	1981.7	1979.7	1969.7	1981.7	1981.7
7.5°	1967.7	1967.7	1957.7	1971.7	1973.7
10°	1947.7	1947.7	1941.7	1957.7	1957.7
12.5°	1923.7	1923.7	1923.7	1939.7	1941.7
15°	1893.8	1895.8	1897.8	1917.8	1921.7
17.5°	1857.8	1861.8	1867.8	1891.8	1895.8
20°	1819.9	1823.9	1833.9	1861.8	1867.8
22.5°	1771.9	1781.9	1795.9	1827.9	1833.9
25°	1728.0	1736.0	1755.9	1789.9	1799.9
27.5°	1674.0	1686.0	1712.0	1748.0	1761.9
30°	1620.1	1632.1	1664.1	1706.0	1718.0
32.5°	1562.2	1580.1	1614.1	1658.1	1672.0
35°	1502.2	1518.2	1558.2	1610.1	1626.1
37.5°	1436.3	1458.3	1502.2	1558.2	1578.2
40°	1372.4	1396.4	1446.3	1506.2	1530.2
42.5°	1308.5	1332.4	1388.4	1456.3	1480.3
45°	1236.6	1262.5	1326.4	1398.4	1424.3
47.5°	1164.6	1196.6	1266.5	1342.4	1370.4
50°	1090.7	1126.7	1202.6	1282.5	1314.5
52.5°	1024.8	1058.8	1138.7	1224.6	1254.5
55°	948.9	986.8	1074.7	1162.6	1196.6
57.5°	871.0	912.9	1006.8	1102.7	1136.7
60°	795.1	841.0	944.9	1040.8	1078.7
62.5°	721.2	767.1	875.0	974.9	1012.8
65°	641.2	695.2	807.1	908.9	944.9
67.5°	565.3	623.3	741.1	841.0	877.0
70°	491.4	547.4	673.2	771.1	807.1
72.5°	411.5	475.4	601.3	703.2	741.1
75°	331.6	407.5	531.4	631.3	667.2
77.5°	257.7	335.6	459.5	541.4	559.3
80°	189.8	269.7	377.6	435.5	457.5
82.5°	121.9	201.8	287.7	329.6	347.6
85°	67.9	133.8	187.8	211.8	219.7
87.5°	28.0	57.9	75.9	85.9	85.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)