

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: P311103

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3000K**

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: P311103
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-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (336) 3000K 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: 5695.0 lumens
Efficiency: N/A
Efficacy: 99.4 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

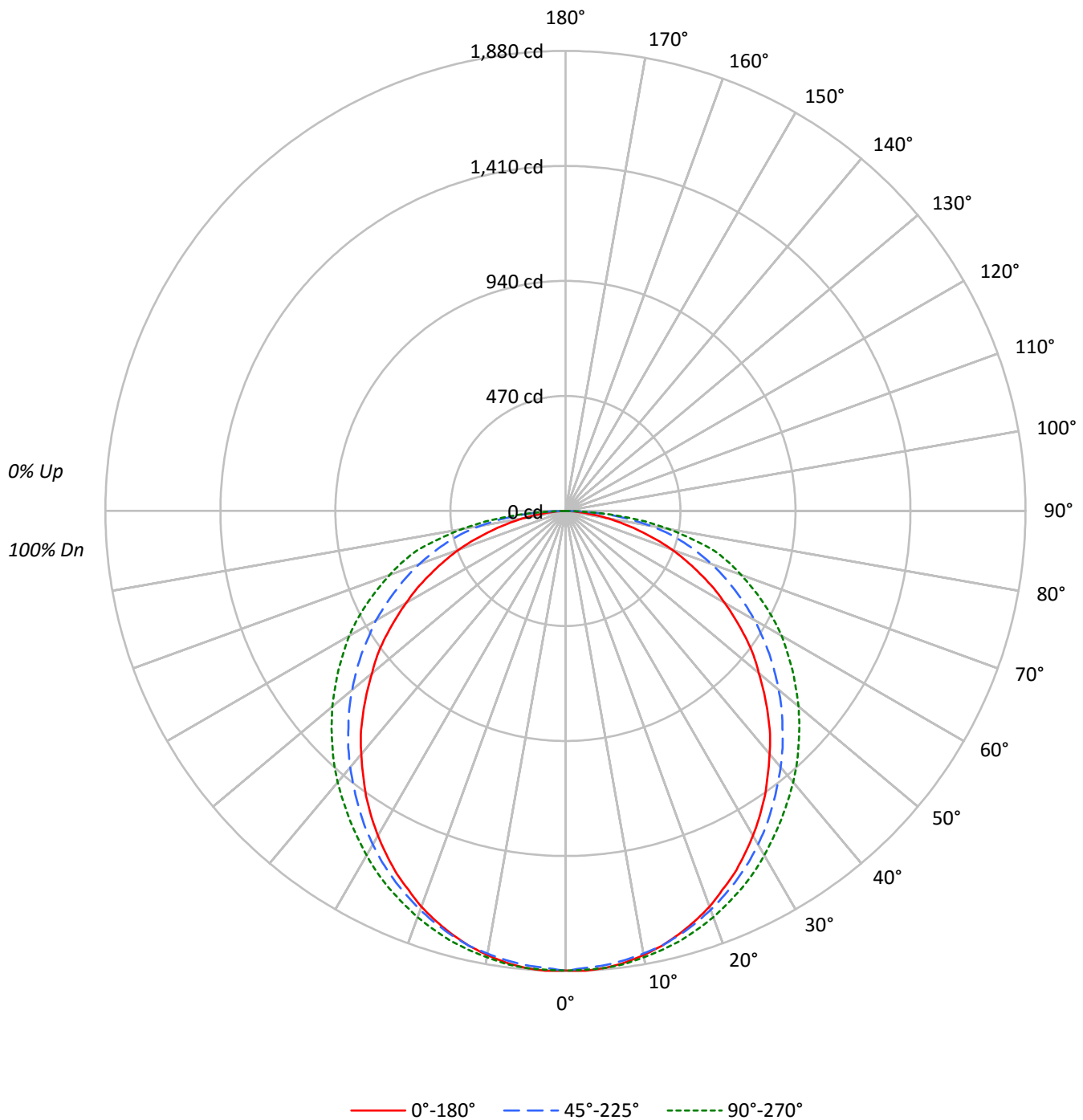
Input Watts (W): 57.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311103

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3000K

Luminous Intensity Polar Plot





TEST NUMBER: P311103

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3000K

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°	2527	2527	2527
5°	2532	2516	2532
10°	2517	2509	2530
15°	2495	2500	2532
20°	2465	2484	2530
25°	2426	2466	2527
30°	2381	2445	2525
35°	2334	2421	2526
40°	2280	2403	2542
45°	2226	2387	2563
50°	2160	2381	2602
55°	2105	2385	2655
60°	2024	2405	2746
65°	1931	2430	2845
70°	1828	2505	3003
75°	1631	2613	3281
80°	1391	2767	3353
85°	991	2742	3208



TEST NUMBER: P311103

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.7	3.1
10°-20°	508.2	8.9
20°-30°	767.7	13.5
30°-40°	925.2	16.2
40°-50°	971.3	17.1
50°-60°	908.7	16.0
60°-70°	750.4	13.2
70°-80°	511.4	9.0
80°-90°	174.4	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°	1453.6	25.5
0°-40°	2378.8	41.8
0°-60°	4258.8	74.8
0°-90°	5695.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5695.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1878	1878	1878	1878	1878	
5°	1874	1872	1863	1874	1874	178
15°	1791	1793	1795	1814	1818	505
25°	1634	1642	1661	1693	1702	752
35°	1421	1436	1474	1523	1538	888
45°	1170	1194	1255	1323	1347	902
55°	898	933	1017	1100	1132	801
65°	606	658	763	860	894	602
75°	314	386	503	597	631	334
85°	64	127	178	200	208	80
90°	0	0	0	0	0	



TEST NUMBER: P311103

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CP187-W2A-U-3000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1878.2	1878.2	1878.2	1878.2	1878.2
2.5°	1880.1	1878.2	1868.7	1878.2	1876.3
5°	1874.4	1872.5	1863.0	1874.4	1874.4
7.5°	1861.2	1861.2	1851.7	1864.9	1866.8
10°	1842.3	1842.3	1836.6	1851.7	1851.7
12.5°	1819.6	1819.6	1819.6	1834.7	1836.6
15°	1791.2	1793.1	1795.0	1813.9	1817.7
17.5°	1757.2	1761.0	1766.7	1789.4	1793.1
20°	1721.3	1725.1	1734.6	1761.0	1766.7
22.5°	1676.0	1685.4	1698.7	1728.9	1734.6
25°	1634.4	1642.0	1660.9	1693.0	1702.4
27.5°	1583.4	1594.7	1619.3	1653.3	1666.5
30°	1532.4	1543.7	1574.0	1613.6	1625.0
32.5°	1477.6	1494.6	1526.7	1568.3	1581.5
35°	1420.9	1436.0	1473.8	1522.9	1538.1
37.5°	1358.5	1379.3	1420.9	1473.8	1492.7
40°	1298.1	1320.8	1368.0	1424.7	1447.4
42.5°	1237.6	1260.3	1313.2	1377.4	1400.1
45°	1169.6	1194.2	1254.6	1322.6	1347.2
47.5°	1101.6	1131.8	1197.9	1269.7	1296.2
50°	1031.7	1065.7	1137.5	1213.1	1243.3
52.5°	969.3	1001.4	1077.0	1158.3	1186.6
55°	897.5	933.4	1016.6	1099.7	1131.8
57.5°	823.8	863.5	952.3	1043.0	1075.1
60°	752.0	795.5	893.7	984.4	1020.3
62.5°	682.1	725.6	827.6	922.1	958.0
65°	606.5	657.5	763.4	859.7	893.7
67.5°	534.7	589.5	701.0	795.5	829.5
70°	464.8	517.7	636.8	729.3	763.4
72.5°	389.2	449.7	568.7	665.1	701.0
75°	313.7	385.5	502.6	597.1	631.1
77.5°	243.7	317.4	434.6	512.1	529.1
80°	179.5	255.1	357.1	411.9	432.7
82.5°	115.3	190.8	272.1	311.8	328.8
85°	64.2	126.6	177.6	200.3	207.8
87.5°	26.5	54.8	71.8	81.2	81.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)