

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: P311078

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CA08-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: P311078
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-CA08-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" 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: 6435.0 lumens
Efficiency: N/A
Efficacy: 110.2 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

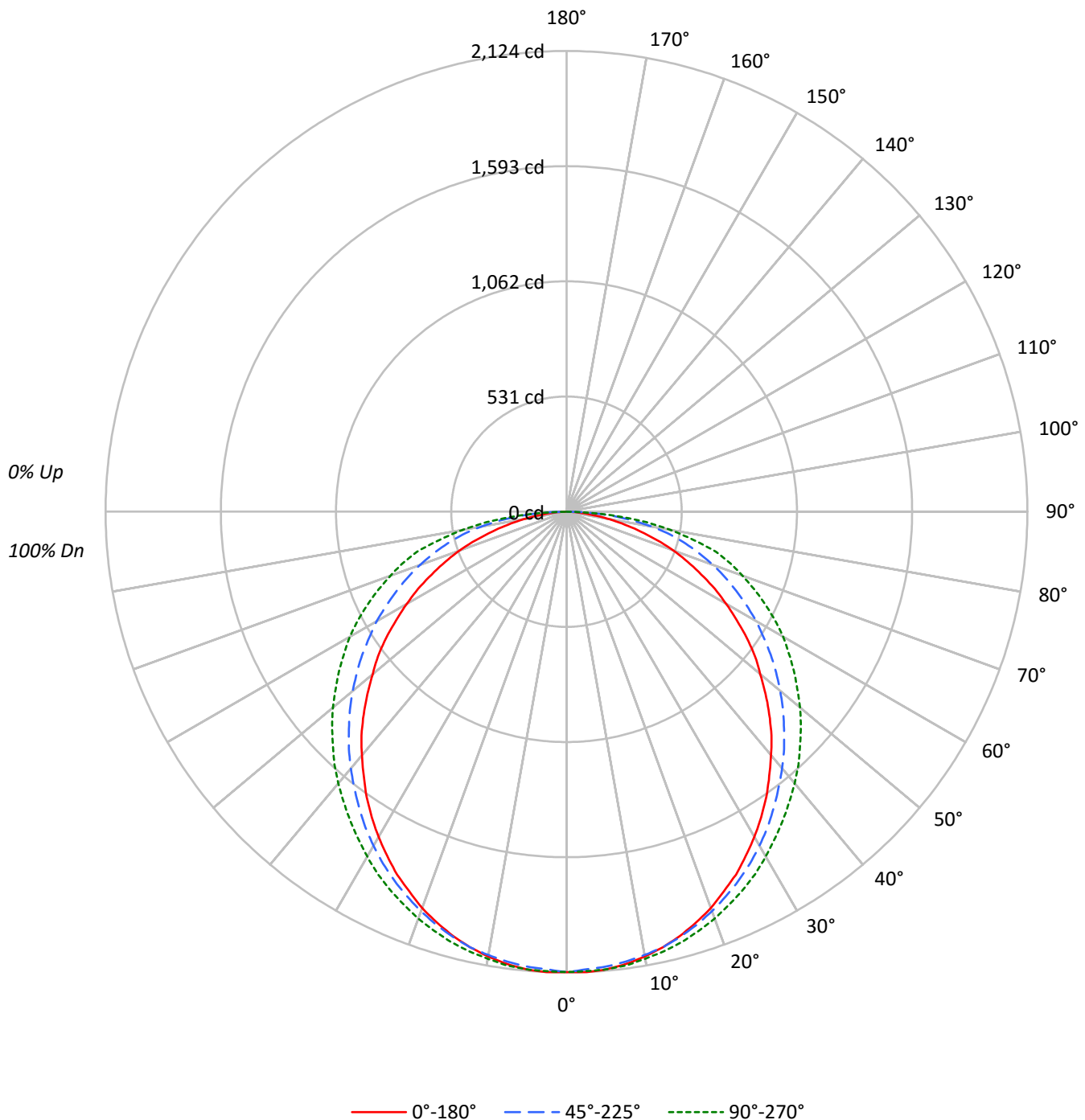
Input Watts (W): 58.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P311078

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CA08-W2A-U-4000K

Luminous Intensity Polar Plot





TEST NUMBER: P311078

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CA08-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°	2855	2855	2855
5°	2860	2843	2860
10°	2844	2835	2859
15°	2819	2825	2861
20°	2785	2806	2858
25°	2742	2786	2856
30°	2690	2763	2853
35°	2637	2735	2855
40°	2576	2715	2872
45°	2515	2698	2897
50°	2440	2690	2941
55°	2379	2694	3000
60°	2287	2718	3102
65°	2182	2746	3215
70°	2066	2830	3393
75°	1842	2952	3707
80°	1571	3126	3788
85°	1121	3098	3626



TEST NUMBER: P311078

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CA08-W2A-U-4000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.8	3.1
10°-20°	574.3	8.9
20°-30°	867.4	13.5
30°-40°	1045.4	16.2
40°-50°	1097.5	17.1
50°-60°	1026.8	16.0
60°-70°	847.9	13.2
70°-80°	577.8	9.0
80°-90°	197.0	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°	1642.5	25.5
0°-40°	2687.9	41.8
0°-60°	4812.2	74.8
0°-90°	6435.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6435.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2122	2122	2122	2122	2122	
5°	2118	2116	2105	2118	2118	201
15°	2024	2026	2028	2050	2054	571
25°	1847	1855	1877	1913	1924	850
35°	1606	1623	1665	1721	1738	1003
45°	1322	1349	1418	1494	1522	1019
55°	1014	1055	1149	1243	1279	905
65°	685	743	862	971	1010	680
75°	354	436	568	675	713	378
85°	73	143	201	226	235	91
90°	0	0	0	0	0	



TEST NUMBER: P311078

CATALOG NUMBER: 24FCZ2-70HE-UNV-L82765-CA08-W2A-U-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2122.2	2122.2	2122.2	2122.2	2122.2
2.5°	2124.3	2122.2	2111.5	2122.2	2120.1
5°	2117.9	2115.8	2105.1	2117.9	2117.9
7.5°	2103.0	2103.0	2092.3	2107.3	2109.4
10°	2081.6	2081.6	2075.2	2092.3	2092.3
12.5°	2056.0	2056.0	2056.0	2073.1	2075.2
15°	2024.0	2026.1	2028.3	2049.6	2053.9
17.5°	1985.6	1989.8	1996.2	2021.9	2026.1
20°	1945.0	1949.3	1959.9	1989.8	1996.2
22.5°	1893.8	1904.4	1919.4	1953.5	1959.9
25°	1846.8	1855.3	1876.7	1913.0	1923.7
27.5°	1789.1	1802.0	1829.7	1868.1	1883.1
30°	1731.5	1744.3	1778.5	1823.3	1836.1
32.5°	1669.6	1688.8	1725.1	1772.1	1787.0
35°	1605.5	1622.6	1665.3	1720.8	1737.9
37.5°	1535.1	1558.6	1605.5	1665.3	1686.7
40°	1466.8	1492.4	1545.8	1609.8	1635.4
42.5°	1398.4	1424.1	1483.8	1556.4	1582.0
45°	1321.6	1349.3	1417.7	1494.5	1522.3
47.5°	1244.7	1278.9	1353.6	1434.7	1464.6
50°	1165.7	1204.1	1285.3	1370.7	1404.8
52.5°	1095.3	1131.6	1217.0	1308.8	1340.8
55°	1014.1	1054.7	1148.6	1242.6	1278.9
57.5°	930.9	975.7	1076.0	1178.5	1214.8
60°	849.7	898.8	1009.9	1112.3	1152.9
62.5°	770.7	819.8	935.1	1041.9	1082.5
65°	685.3	743.0	862.5	971.4	1009.9
67.5°	604.2	666.1	792.1	898.8	937.3
70°	525.2	585.0	719.5	824.1	862.5
72.5°	439.8	508.1	642.6	751.5	792.1
75°	354.4	435.5	567.9	674.7	713.1
77.5°	275.4	358.7	491.1	578.6	597.8
80°	202.8	288.2	403.5	465.4	488.9
82.5°	130.2	215.6	307.4	352.3	371.5
85°	72.6	143.0	200.7	226.3	234.9
87.5°	29.9	61.9	81.1	91.8	91.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)