

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: P311112

Luminaire Tested: **24FCZ2-70HE-UNV-L82765-CP250-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: P311112
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-CP250-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.250" 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: 5649.0 lumens
Efficiency: N/A
Efficacy: 98.6 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

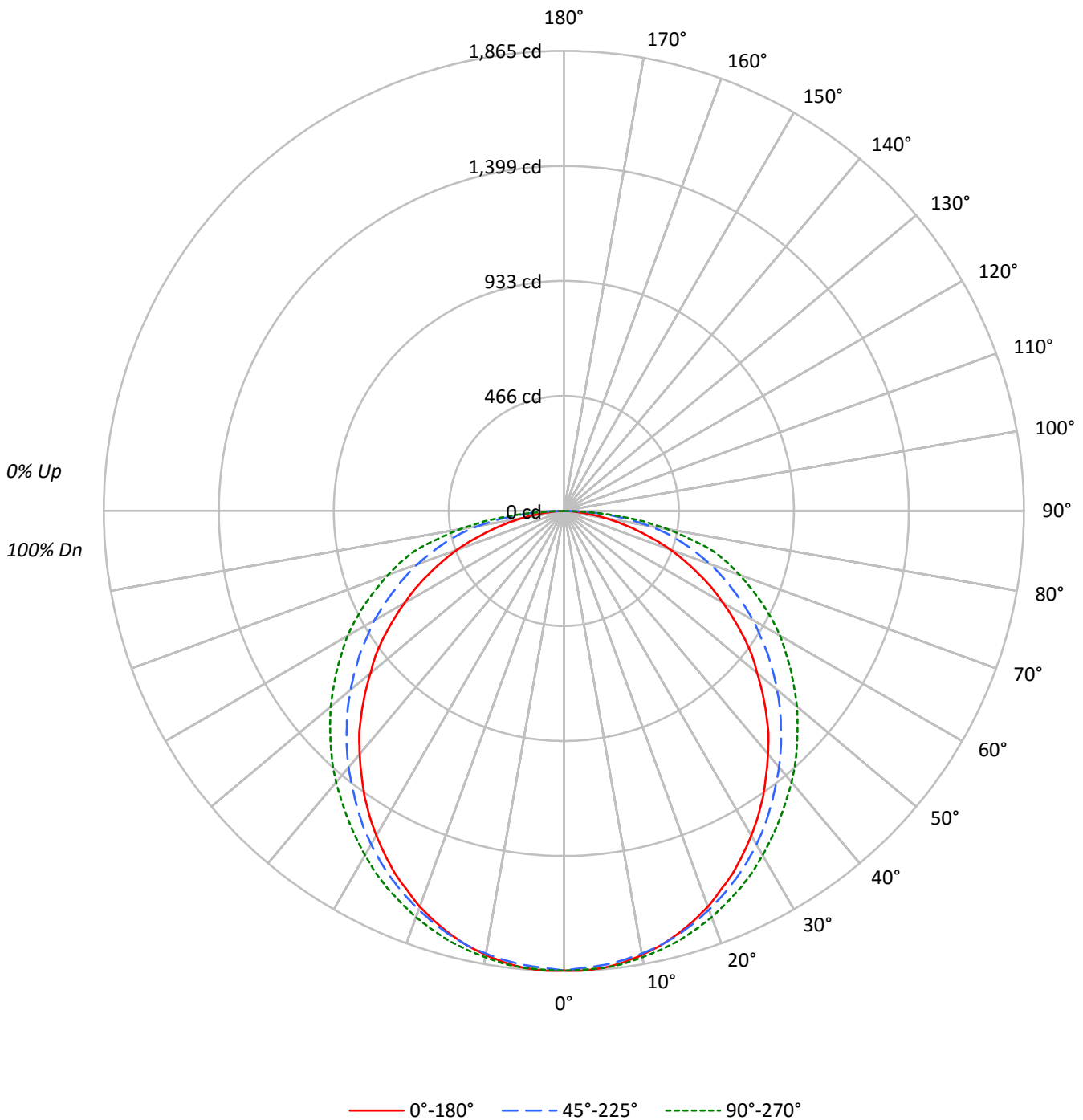
Input Watts (W): 57.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	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	102	102	102	100
1	108	103	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2507	2507	2507
5°	2511	2496	2511
10°	2497	2489	2510
15°	2475	2480	2511
20°	2445	2463	2509
25°	2407	2446	2507
30°	2362	2426	2504
35°	2315	2401	2506
40°	2262	2383	2522
45°	2208	2368	2543
50°	2142	2362	2581
55°	2088	2365	2634
60°	2007	2386	2724
65°	1915	2411	2822
70°	1814	2485	2979
75°	1617	2591	3254
80°	1380	2744	3326
85°	983	2720	3183



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.3	3.1
10°-20°	504.1	8.9
20°-30°	761.5	13.5
30°-40°	917.7	16.2
40°-50°	963.5	17.1
50°-60°	901.4	16.0
60°-70°	744.4	13.2
70°-80°	507.2	9.0
80°-90°	173.0	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°	1441.9	25.5
0°-40°	2359.6	41.8
0°-60°	4224.4	74.8
0°-90°	5649.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5649.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1863	1863	1863	1863	1863	
5°	1859	1857	1848	1859	1859	176
15°	1777	1779	1780	1799	1803	501
25°	1621	1629	1648	1679	1689	746
35°	1409	1424	1462	1511	1526	881
45°	1160	1184	1244	1312	1336	895
55°	890	926	1008	1091	1123	795
65°	602	652	757	853	886	597
75°	311	382	498	592	626	332
85°	64	126	176	199	206	80
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1863.0	1863.0	1863.0	1863.0	1863.0
2.5°	1864.9	1863.0	1853.6	1863.0	1861.1
5°	1859.2	1857.4	1848.0	1859.2	1859.2
7.5°	1846.1	1846.1	1836.8	1849.9	1851.7
10°	1827.4	1827.4	1821.8	1836.8	1836.8
12.5°	1804.9	1804.9	1804.9	1819.9	1821.8
15°	1776.8	1778.7	1780.5	1799.3	1803.0
17.5°	1743.0	1746.8	1752.4	1774.9	1778.7
20°	1707.4	1711.2	1720.5	1746.8	1752.4
22.5°	1662.4	1671.8	1684.9	1714.9	1720.5
25°	1621.2	1628.7	1647.5	1679.3	1688.7
27.5°	1570.6	1581.9	1606.2	1640.0	1653.1
30°	1520.0	1531.3	1561.2	1600.6	1611.8
32.5°	1465.7	1482.5	1514.4	1555.6	1568.7
35°	1409.4	1424.4	1461.9	1510.6	1525.6
37.5°	1347.6	1368.2	1409.4	1461.9	1480.6
40°	1287.6	1310.1	1356.9	1413.2	1435.7
42.5°	1227.6	1250.1	1302.6	1366.3	1388.8
45°	1160.2	1184.5	1244.5	1312.0	1336.3
47.5°	1092.7	1122.7	1188.3	1259.5	1285.7
50°	1023.3	1057.1	1128.3	1203.3	1233.2
52.5°	961.5	993.3	1068.3	1148.9	1177.0
55°	890.3	925.9	1008.3	1090.8	1122.7
57.5°	817.2	856.5	944.6	1034.6	1066.4
60°	745.9	789.1	886.5	976.5	1012.1
62.5°	676.6	719.7	820.9	914.6	950.2
65°	601.6	652.2	757.2	852.8	886.5
67.5°	530.4	584.8	695.3	789.1	822.8
70°	461.1	513.5	631.6	723.5	757.2
72.5°	386.1	446.1	564.1	659.7	695.3
75°	311.1	382.3	498.5	592.3	626.0
77.5°	241.8	314.9	431.1	507.9	524.8
80°	178.1	253.0	354.2	408.6	429.2
82.5°	114.3	189.3	269.9	309.2	326.1
85°	63.7	125.6	176.2	198.7	206.2
87.5°	26.2	54.4	71.2	80.6	80.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)