

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: P311023

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-CP250-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: P311023
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-CP250-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.250" 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: 4999.0 lumens
Efficiency: N/A
Efficacy: 104.6 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

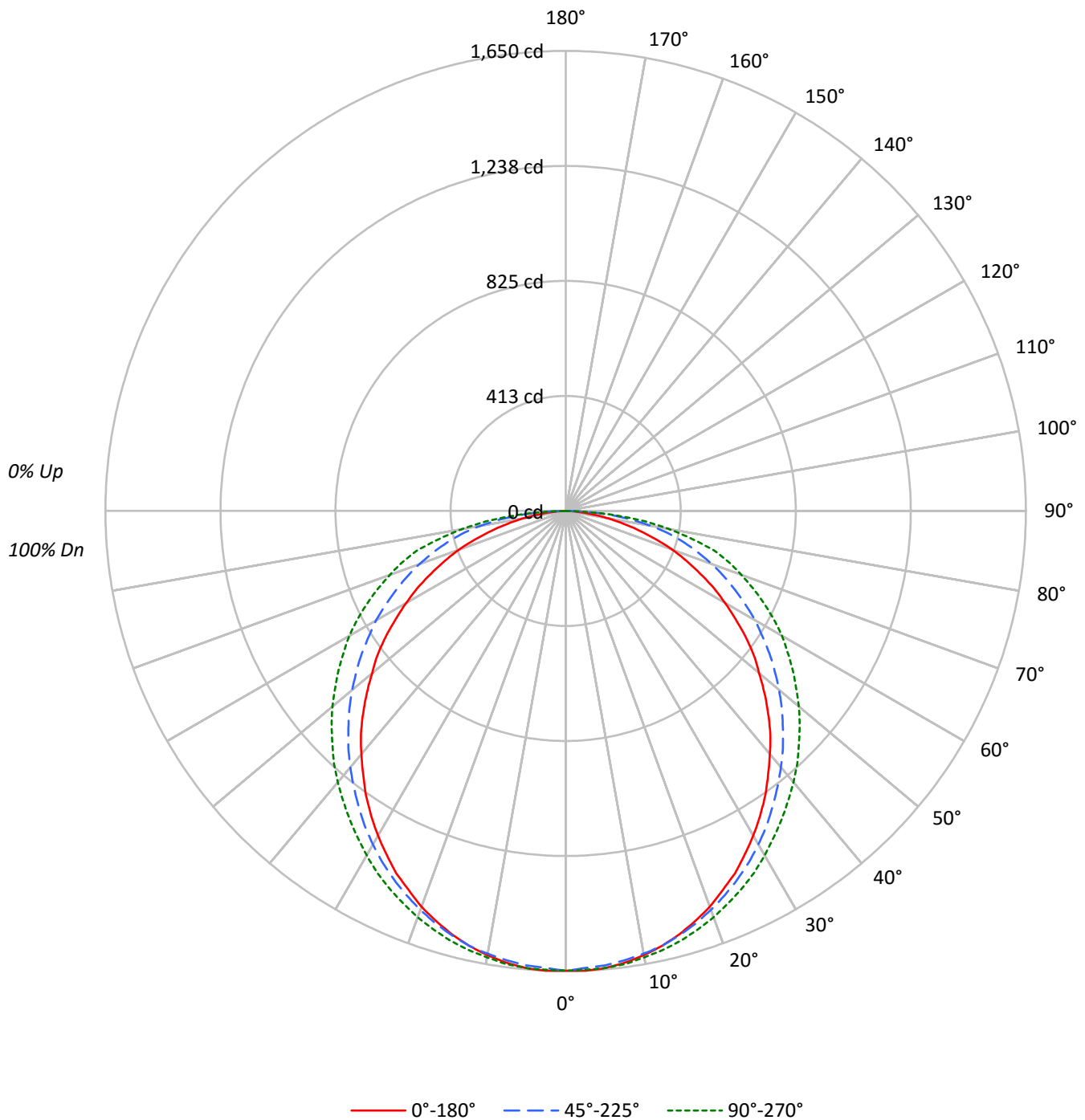
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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°	2218	2218	2218
5°	2222	2209	2222
10°	2209	2203	2221
15°	2190	2195	2223
20°	2164	2180	2220
25°	2130	2164	2219
30°	2090	2147	2216
35°	2049	2125	2218
40°	2001	2109	2232
45°	1954	2096	2250
50°	1896	2090	2284
55°	1848	2093	2331
60°	1776	2111	2410
65°	1695	2133	2498
70°	1605	2199	2636
75°	1431	2294	2880
80°	1221	2429	2943
85°	871	2407	2816



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	156.0	3.1
10°-20°	446.1	8.9
20°-30°	673.8	13.5
30°-40°	812.1	16.2
40°-50°	852.6	17.1
50°-60°	797.6	16.0
60°-70°	658.7	13.2
70°-80°	448.9	9.0
80°-90°	153.1	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°	1276.0	25.5
0°-40°	2088.1	41.8
0°-60°	3738.4	74.8
0°-90°	4999.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4999.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1649	1649	1649	1649	1649	
5°	1645	1644	1635	1645	1645	156
15°	1572	1574	1576	1592	1596	443
25°	1435	1441	1458	1486	1494	660
35°	1247	1260	1294	1337	1350	779
45°	1027	1048	1101	1161	1183	792
55°	788	819	892	965	994	703
65°	532	577	670	755	784	528
75°	275	338	441	524	554	294
85°	56	111	156	176	182	71
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1648.6	1648.6	1648.6	1648.6	1648.6
2.5°	1650.3	1648.6	1640.3	1648.6	1647.0
5°	1645.3	1643.7	1635.4	1645.3	1645.3
7.5°	1633.7	1633.7	1625.4	1637.0	1638.7
10°	1617.1	1617.1	1612.1	1625.4	1625.4
12.5°	1597.2	1597.2	1597.2	1610.5	1612.1
15°	1572.3	1574.0	1575.6	1592.2	1595.6
17.5°	1542.5	1545.8	1550.8	1570.7	1574.0
20°	1511.0	1514.3	1522.6	1545.8	1550.8
22.5°	1471.2	1479.5	1491.1	1517.6	1522.6
25°	1434.7	1441.3	1457.9	1486.1	1494.4
27.5°	1389.9	1399.8	1421.4	1451.3	1462.9
30°	1345.1	1355.1	1381.6	1416.4	1426.4
32.5°	1297.0	1311.9	1340.1	1376.6	1388.2
35°	1247.3	1260.5	1293.7	1336.8	1350.1
37.5°	1192.5	1210.8	1247.3	1293.7	1310.3
40°	1139.4	1159.3	1200.8	1250.6	1270.5
42.5°	1086.4	1106.3	1152.7	1209.1	1229.0
45°	1026.7	1048.2	1101.3	1161.0	1182.6
47.5°	967.0	993.5	1051.5	1114.6	1137.8
50°	905.6	935.4	998.5	1064.8	1091.3
52.5°	850.9	879.0	945.4	1016.7	1041.6
55°	787.8	819.3	892.3	965.3	993.5
57.5°	723.1	758.0	835.9	915.5	943.7
60°	660.1	698.3	784.5	864.1	895.6
62.5°	598.7	636.9	726.5	809.4	840.9
65°	532.4	577.2	670.1	754.7	784.5
67.5°	469.4	517.5	615.3	698.3	728.1
70°	408.0	454.5	558.9	640.2	670.1
72.5°	341.7	394.7	499.2	583.8	615.3
75°	275.3	338.3	441.2	524.1	554.0
77.5°	214.0	278.6	381.5	449.5	464.4
80°	157.6	223.9	313.5	361.6	379.8
82.5°	101.2	167.5	238.8	273.7	288.6
85°	56.4	111.1	155.9	175.8	182.4
87.5°	23.2	48.1	63.0	71.3	71.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)