

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: P311702

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP250-W2A-U-5500K**

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: P311702
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-1)
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-S-CP250-W2A-U-5500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.250" POLYCARB SHEET
Light Source: (336) 5500K 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: 5592.0 lumens
Efficiency: N/A
Efficacy: 114.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

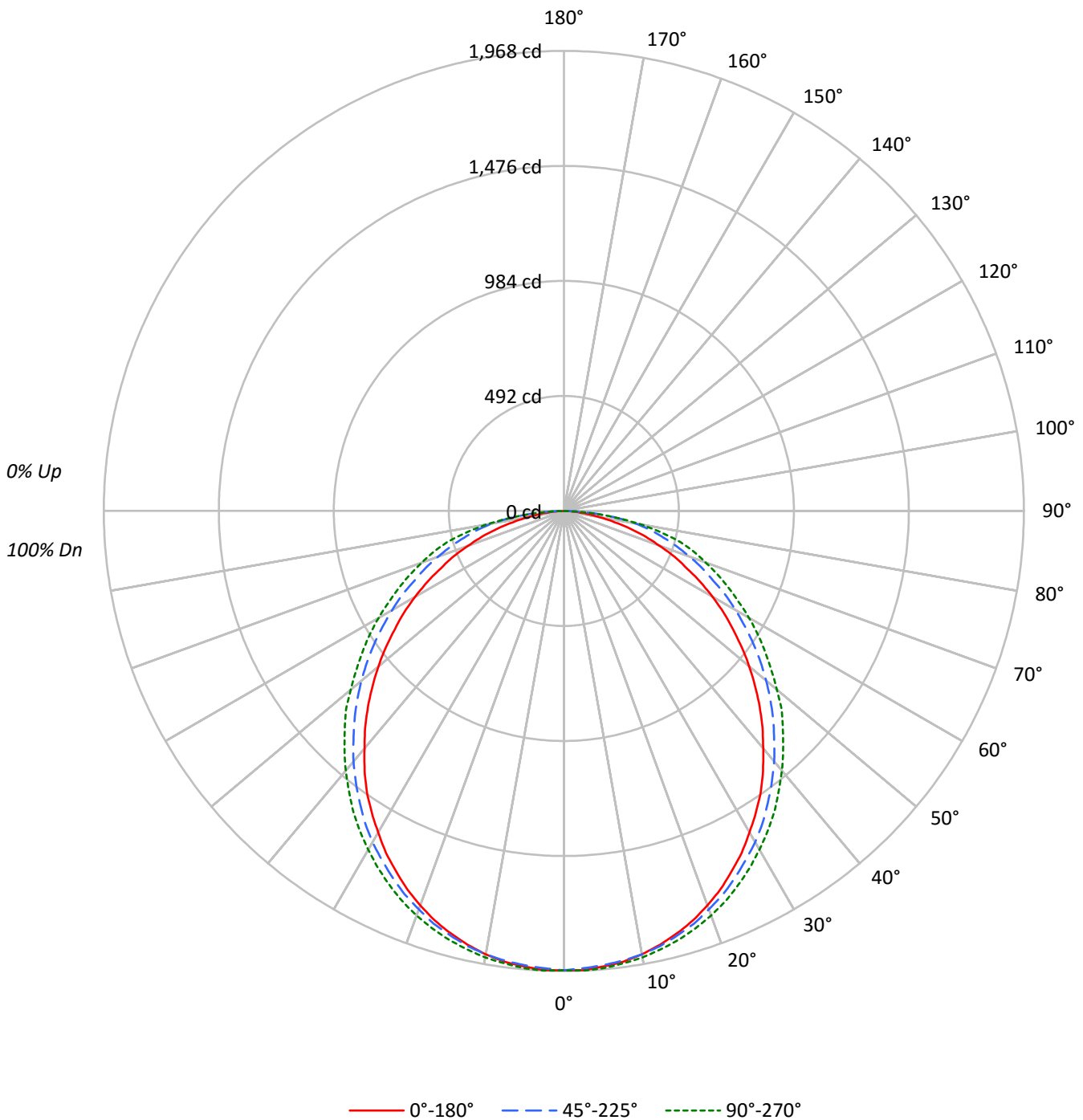
Input Watts (W): 48.9
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2643	2643	2643
5°	2641	2634	2651
10°	2631	2631	2650
15°	2605	2618	2645
20°	2571	2597	2637
25°	2523	2571	2621
30°	2467	2542	2600
35°	2413	2500	2579
40°	2330	2458	2549
45°	2254	2410	2521
50°	2168	2365	2491
55°	2071	2321	2467
60°	1974	2285	2462
65°	1849	2245	2477
70°	1712	2257	2543
75°	1533	2299	2687
80°	1239	2436	2629
85°	932	2138	2084



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	186.0	3.3
10°-20°	531.4	9.5
20°-30°	798.8	14.3
30°-40°	951.5	17.0
40°-50°	973.9	17.4
50°-60°	876.8	15.7
60°-70°	688.5	12.3
70°-80°	446.9	8.0
80°-90°	138.2	2.5
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°	1516.2	27.1
0°-40°	2467.8	44.1
0°-60°	4318.4	77.2
0°-90°	5592.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5592.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1956	1959	1950	1961	1963	186
15°	1870	1876	1879	1895	1899	527
25°	1700	1714	1732	1760	1766	783
35°	1469	1487	1522	1560	1570	916
45°	1185	1213	1266	1314	1325	913
55°	883	922	989	1041	1052	791
65°	581	625	705	764	778	578
75°	295	352	442	503	517	312
85°	60	112	138	135	135	73
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.5	1964.5	1964.5	1964.5	1964.5
2.5°	1966.3	1966.3	1957.4	1966.3	1968.1
5°	1955.6	1959.2	1950.3	1961.0	1962.7
7.5°	1945.0	1945.0	1939.6	1950.3	1952.1
10°	1925.4	1927.2	1925.4	1937.9	1939.6
12.5°	1900.6	1904.1	1905.9	1918.3	1920.1
15°	1870.4	1875.7	1879.2	1895.2	1898.8
17.5°	1836.6	1841.9	1850.8	1868.6	1872.1
20°	1795.8	1802.9	1813.5	1836.6	1841.9
22.5°	1751.4	1758.5	1776.2	1797.5	1806.4
25°	1699.8	1714.1	1731.8	1760.2	1765.6
27.5°	1648.3	1660.8	1683.9	1714.1	1721.2
30°	1587.9	1607.5	1635.9	1666.1	1673.2
32.5°	1529.3	1548.9	1582.6	1614.6	1623.5
35°	1468.9	1486.7	1522.2	1559.5	1570.2
37.5°	1399.7	1422.8	1461.8	1499.1	1509.8
40°	1326.8	1355.3	1399.7	1438.7	1451.2
42.5°	1257.6	1287.8	1332.2	1374.8	1389.0
45°	1184.7	1213.2	1266.4	1314.4	1325.1
47.5°	1110.1	1142.1	1199.0	1246.9	1264.7
50°	1035.5	1069.3	1129.7	1179.4	1190.1
52.5°	960.9	996.5	1060.4	1113.7	1119.0
55°	882.8	921.9	989.4	1040.9	1051.5
57.5°	811.7	845.5	918.3	971.6	984.0
60°	733.6	770.9	849.0	898.8	914.8
62.5°	659.0	698.1	779.8	829.5	843.7
65°	580.8	625.2	705.2	763.8	778.0
67.5°	513.3	556.0	641.2	698.1	712.3
70°	435.2	483.1	573.7	632.3	646.5
72.5°	367.7	417.4	508.0	564.8	586.2
75°	294.9	351.7	442.3	502.7	516.9
77.5°	223.8	289.5	381.9	428.1	428.1
80°	159.9	229.1	314.4	335.7	339.3
82.5°	104.8	172.3	232.7	230.9	230.9
85°	60.4	111.9	138.5	135.0	135.0
87.5°	23.1	46.2	49.7	49.7	48.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)