

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: P311681

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CP125-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: P311681
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-CP125-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.125" POLYCARB 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: 5651.0 lumens
Efficiency: N/A
Efficacy: 117.2 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

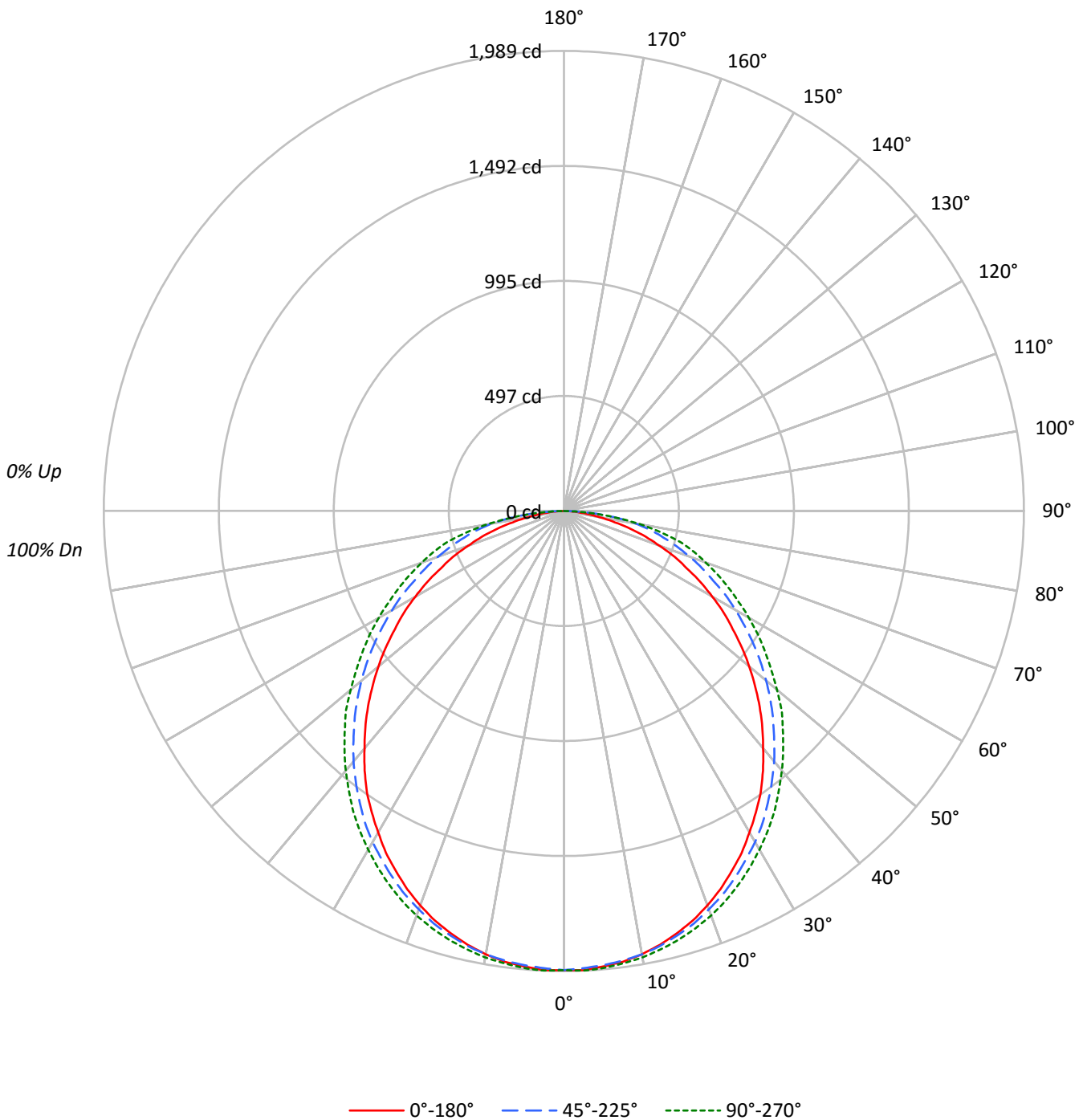
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2671	2671	2671
5°	2669	2662	2679
10°	2658	2658	2678
15°	2633	2645	2673
20°	2598	2624	2665
25°	2550	2598	2649
30°	2493	2568	2627
35°	2438	2527	2606
40°	2355	2484	2576
45°	2278	2435	2548
50°	2191	2390	2517
55°	2093	2345	2493
60°	1995	2309	2488
65°	1869	2269	2503
70°	1730	2281	2570
75°	1549	2323	2715
80°	1251	2462	2656
85°	942	2161	2106



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.9	3.3
10°-20°	537.0	9.5
20°-30°	807.3	14.3
30°-40°	961.6	17.0
40°-50°	984.1	17.4
50°-60°	886.0	15.7
60°-70°	695.8	12.3
70°-80°	451.6	8.0
80°-90°	139.7	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°	1532.2	27.1
0°-40°	2493.8	44.1
0°-60°	4364.0	77.2
0°-90°	5651.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5651.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1985	1985	1985	1985	1985	
5°	1976	1980	1971	1982	1983	188
15°	1890	1896	1899	1915	1919	533
25°	1718	1732	1750	1779	1784	791
35°	1484	1502	1538	1576	1587	926
45°	1197	1226	1280	1328	1339	923
55°	892	932	1000	1052	1063	800
65°	587	632	713	772	786	584
75°	298	355	447	508	522	315
85°	61	113	140	136	136	74
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1985.2	1985.2	1985.2	1985.2	1985.2
2.5°	1987.0	1987.0	1978.1	1987.0	1988.8
5°	1976.3	1979.8	1970.9	1981.6	1983.4
7.5°	1965.5	1965.5	1960.1	1970.9	1972.7
10°	1945.7	1947.5	1945.7	1958.3	1960.1
12.5°	1920.6	1924.2	1926.0	1938.6	1940.4
15°	1890.1	1895.5	1899.1	1915.2	1918.8
17.5°	1856.0	1861.4	1870.4	1888.3	1891.9
20°	1814.7	1821.9	1832.7	1856.0	1861.4
22.5°	1769.8	1777.0	1795.0	1816.5	1825.5
25°	1717.8	1732.1	1750.1	1778.8	1784.2
27.5°	1665.7	1678.3	1701.6	1732.1	1739.3
30°	1604.7	1624.4	1653.2	1683.7	1690.9
32.5°	1545.5	1565.2	1599.3	1631.6	1640.6
35°	1484.4	1502.4	1538.3	1576.0	1586.8
37.5°	1414.4	1437.8	1477.3	1515.0	1525.7
40°	1340.8	1369.6	1414.4	1453.9	1466.5
42.5°	1270.8	1301.4	1346.2	1389.3	1403.7
45°	1197.2	1226.0	1279.8	1328.3	1339.0
47.5°	1121.9	1154.2	1211.6	1260.1	1278.0
50°	1046.5	1080.6	1141.6	1191.9	1202.6
52.5°	971.1	1007.0	1071.6	1125.4	1130.8
55°	892.1	931.6	999.8	1051.9	1062.6
57.5°	820.3	854.4	928.0	981.8	994.4
60°	741.3	779.0	858.0	908.3	924.4
62.5°	665.9	705.4	788.0	838.2	852.6
65°	587.0	631.8	712.6	771.8	786.2
67.5°	518.7	561.8	648.0	705.4	719.8
70°	439.8	488.2	579.8	639.0	653.4
72.5°	371.6	421.8	513.4	570.8	592.3
75°	298.0	355.4	446.9	508.0	522.3
77.5°	226.2	292.6	385.9	432.6	432.6
80°	161.5	231.6	317.7	339.2	342.8
82.5°	105.9	174.1	235.1	233.3	233.3
85°	61.0	113.1	140.0	136.4	136.4
87.5°	23.3	46.7	50.3	50.3	48.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)