

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: P310313

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-RDP-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: P310313
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)
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-RDP-CA08-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS WITH INSERT, 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: 3702.0 lumens
Efficiency: N/A
Efficacy: 76.8 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

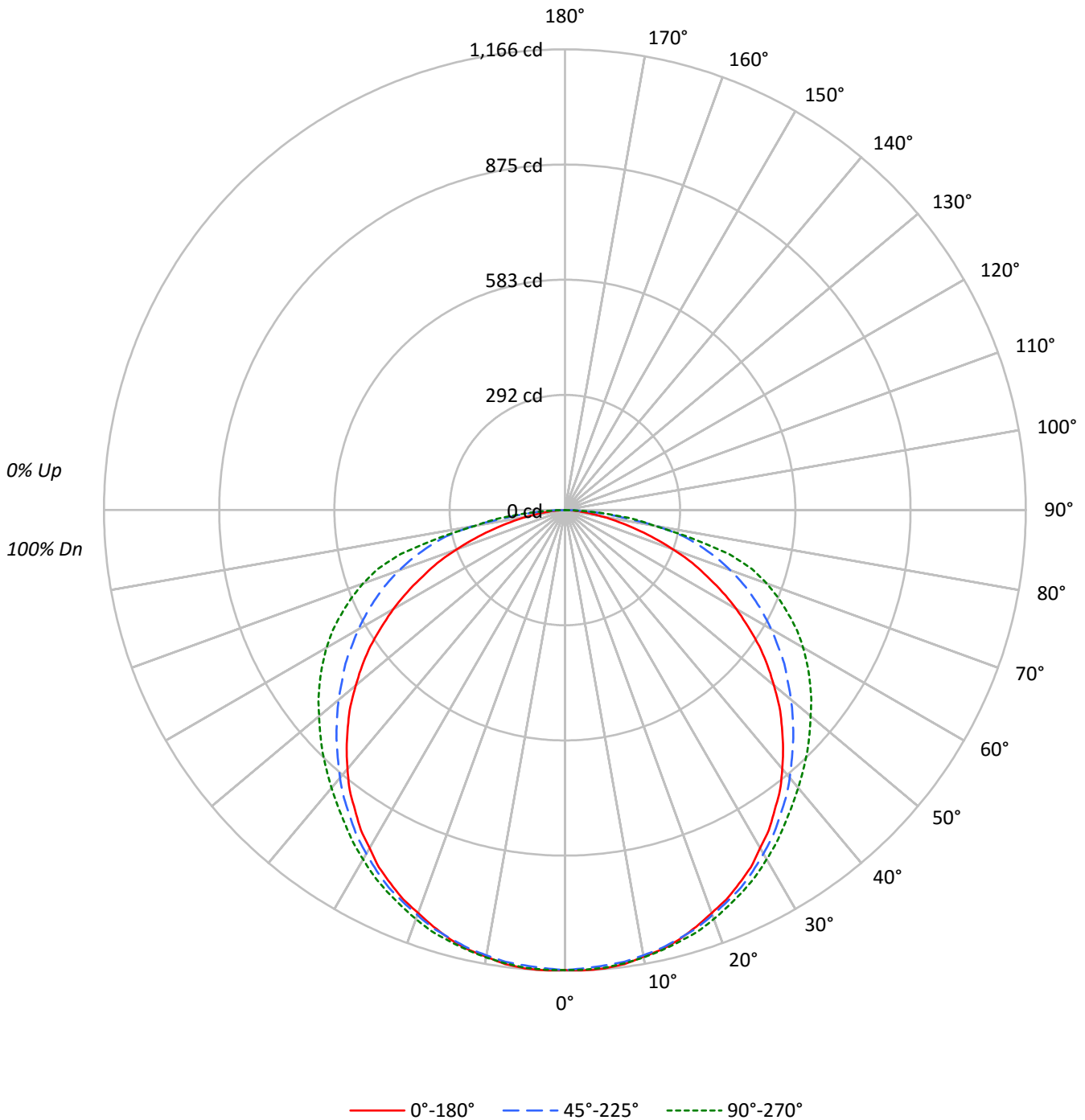
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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	93	89	92	89	87	88	86	84	82
2	97	89	81	75	95	87	80	74	83	77	72	80	75	71	77	73	69	67
3	88	77	68	62	86	76	68	61	72	66	60	70	64	59	67	62	58	56
4	81	68	59	52	78	67	58	51	64	57	51	62	55	50	59	54	49	47
5	74	60	51	44	72	59	51	44	57	49	43	55	48	43	53	47	42	40
6	68	54	45	38	66	53	45	38	51	44	38	50	43	37	48	42	37	35
7	63	49	40	34	61	48	40	34	47	39	33	45	38	33	44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30	41	34	29	40	34	29	27
9	55	41	33	27	53	40	32	27	39	32	27	38	31	26	37	31	26	24
10	51	38	30	24	50	37	29	24	36	29	24	35	29	24	34	28	24	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1566	1566	1566
5°	1572	1562	1570
10°	1568	1563	1570
15°	1565	1563	1573
20°	1554	1562	1577
25°	1548	1565	1581
30°	1535	1560	1586
35°	1520	1556	1592
40°	1503	1555	1613
45°	1478	1555	1649
50°	1445	1564	1699
55°	1408	1590	1775
60°	1349	1621	1873
65°	1263	1678	1988
70°	1149	1755	2138
75°	974	1852	2234
80°	769	1863	1807
85°	567	1417	1587



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	110.4	3.0
10°-20°	317.8	8.6
20°-30°	486.0	13.1
30°-40°	594.2	16.0
40°-50°	633.2	17.1
50°-60°	605.5	16.4
60°-70°	512.9	13.9
70°-80°	344.7	9.3
80°-90°	97.2	2.6
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°	914.3	24.7
0°-40°	1508.4	40.7
0°-60°	2747.1	74.2
0°-90°	3702.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3702.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1164	1164	1164	1164	1164	
5°	1164	1162	1157	1162	1162	111
15°	1124	1124	1122	1131	1129	317
25°	1043	1047	1054	1063	1065	481
35°	926	933	948	966	970	580
45°	777	790	817	852	867	599
55°	600	622	678	731	756	535
65°	397	437	527	597	624	394
75°	187	255	356	417	430	201
85°	37	75	92	99	103	45
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1164.2	1164.2	1164.2	1164.2	1164.2
2.5°	1166.0	1166.0	1160.5	1164.2	1164.2
5°	1164.2	1162.3	1156.8	1162.3	1162.3
7.5°	1158.7	1156.8	1153.2	1158.7	1156.8
10°	1147.6	1147.6	1144.0	1149.5	1149.5
12.5°	1138.5	1136.6	1134.8	1142.1	1140.3
15°	1123.8	1123.8	1121.9	1131.1	1129.3
17.5°	1105.4	1107.2	1109.1	1116.4	1118.3
20°	1085.2	1088.9	1090.7	1101.7	1101.7
22.5°	1066.9	1068.7	1072.4	1083.4	1083.4
25°	1043.0	1046.7	1054.0	1063.2	1065.0
27.5°	1019.1	1020.9	1030.1	1043.0	1044.8
30°	987.9	993.4	1004.4	1019.1	1020.9
32.5°	960.4	965.9	978.7	993.4	997.1
35°	925.5	932.8	947.5	965.9	969.5
37.5°	894.2	899.8	918.1	938.3	943.8
40°	855.7	866.7	885.1	908.9	918.1
42.5°	817.1	828.1	850.2	881.4	892.4
45°	776.7	789.6	817.1	852.0	866.7
47.5°	736.3	751.0	782.2	822.6	839.2
50°	690.4	708.8	747.3	793.3	811.6
52.5°	646.4	668.4	710.6	762.0	785.9
55°	600.4	622.5	677.6	730.8	756.5
57.5°	549.0	578.4	639.0	699.6	727.1
60°	501.3	528.8	602.3	668.4	695.9
62.5°	449.9	486.6	565.6	635.3	662.9
65°	396.6	437.0	527.0	596.8	624.3
67.5°	348.9	393.0	488.4	558.2	585.8
70°	292.0	347.0	446.2	516.0	543.5
72.5°	238.7	299.3	402.1	470.1	495.8
75°	187.3	255.2	356.2	416.8	429.7
77.5°	139.6	211.2	308.5	334.2	325.0
80°	99.2	168.9	240.5	227.7	233.2
82.5°	64.3	128.5	148.7	168.9	174.4
85°	36.7	75.3	91.8	99.2	102.8
87.5°	16.5	27.5	36.7	36.7	34.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)