

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: P310988

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-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: P310988
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-CA08-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 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: 5505.0 lumens
Efficiency: N/A
Efficacy: 114.2 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

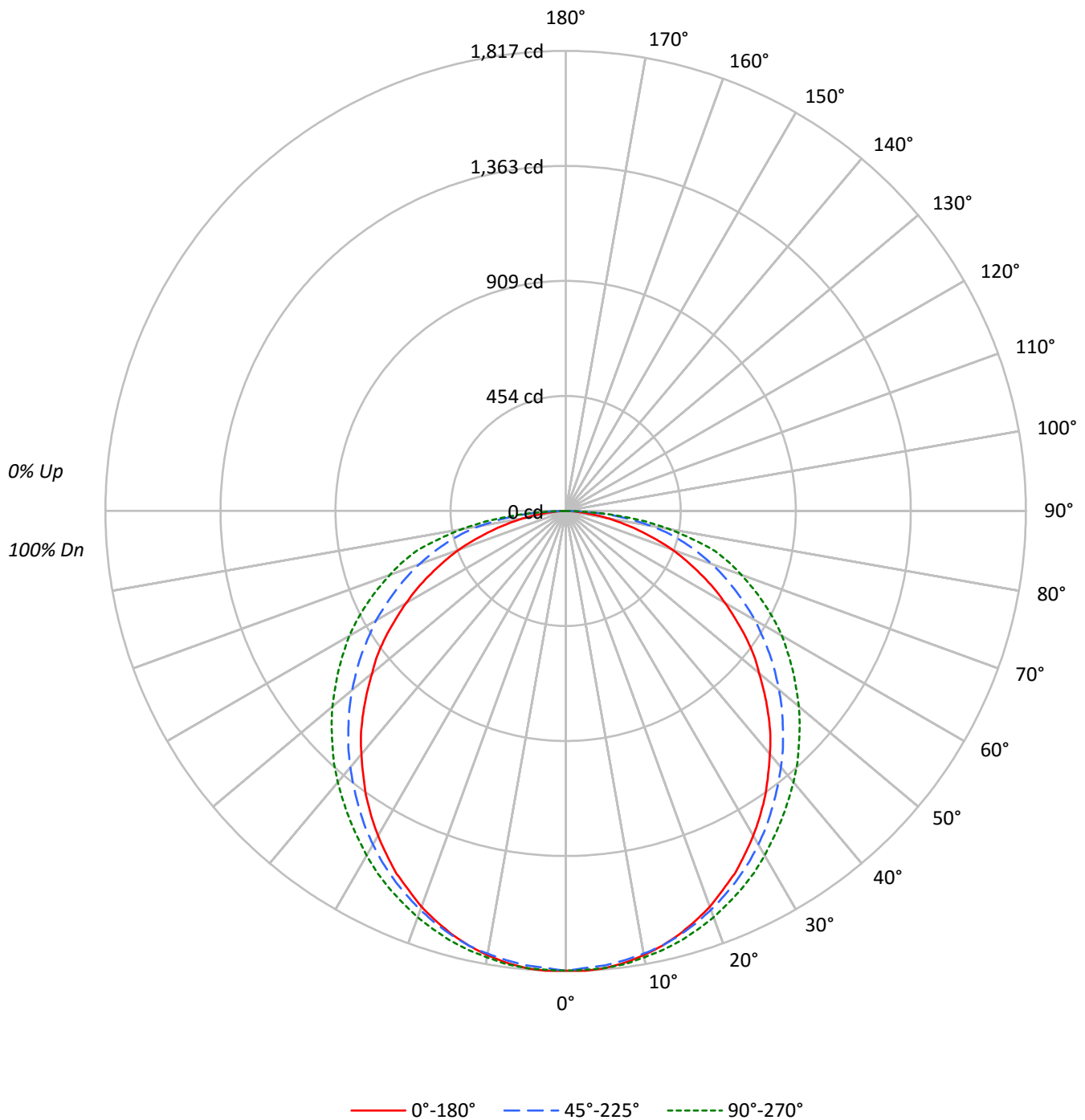
Input Watts (W): 48.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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°	2443	2443	2443
5°	2447	2432	2447
10°	2433	2425	2445
15°	2412	2417	2448
20°	2382	2401	2445
25°	2345	2383	2443
30°	2301	2364	2440
35°	2256	2340	2442
40°	2204	2323	2457
45°	2151	2308	2478
50°	2087	2301	2516
55°	2035	2305	2566
60°	1956	2325	2654
65°	1867	2349	2750
70°	1768	2421	2903
75°	1576	2525	3171
80°	1344	2675	3241
85°	959	2651	3101



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.8	3.1
10°-20°	491.3	8.9
20°-30°	742.0	13.5
30°-40°	894.3	16.2
40°-50°	938.9	17.1
50°-60°	878.4	16.0
60°-70°	725.4	13.2
70°-80°	494.3	9.0
80°-90°	168.6	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°	1405.1	25.5
0°-40°	2299.5	41.8
0°-60°	4116.7	74.8
0°-90°	5505.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5505.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1816	1816	1816	1816	1816	
5°	1812	1810	1801	1812	1812	172
15°	1732	1733	1735	1753	1757	488
25°	1580	1587	1606	1636	1646	727
35°	1374	1388	1425	1472	1487	858
45°	1131	1154	1213	1278	1302	872
55°	868	902	983	1063	1094	774
65°	586	636	738	831	864	582
75°	303	373	486	577	610	323
85°	62	122	172	194	201	78
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1815.5	1815.5	1815.5	1815.5	1815.5
2.5°	1817.3	1815.5	1806.4	1815.5	1813.7
5°	1811.8	1810.0	1800.9	1811.8	1811.8
7.5°	1799.1	1799.1	1789.9	1802.7	1804.5
10°	1780.8	1780.8	1775.3	1789.9	1789.9
12.5°	1758.9	1758.9	1758.9	1773.5	1775.3
15°	1731.5	1733.3	1735.1	1753.4	1757.1
17.5°	1698.6	1702.3	1707.7	1729.7	1733.3
20°	1663.9	1667.6	1676.7	1702.3	1707.7
22.5°	1620.1	1629.2	1642.0	1671.2	1676.7
25°	1579.9	1587.2	1605.5	1636.5	1645.6
27.5°	1530.6	1541.5	1565.3	1598.2	1610.9
30°	1481.3	1492.2	1521.4	1559.8	1570.8
32.5°	1428.3	1444.7	1475.8	1516.0	1528.7
35°	1373.5	1388.1	1424.6	1472.1	1486.7
37.5°	1313.2	1333.3	1373.5	1424.6	1442.9
40°	1254.8	1276.7	1322.4	1377.2	1399.1
42.5°	1196.3	1218.2	1269.4	1331.5	1353.4
45°	1130.6	1154.3	1212.8	1278.5	1302.3
47.5°	1064.8	1094.0	1158.0	1227.4	1253.0
50°	997.2	1030.1	1099.5	1172.6	1201.8
52.5°	937.0	968.0	1041.1	1119.6	1147.0
55°	867.6	902.3	982.6	1063.0	1094.0
57.5°	796.3	834.7	920.5	1008.2	1039.3
60°	726.9	768.9	863.9	951.6	986.3
62.5°	659.4	701.4	800.0	891.3	926.0
65°	586.3	635.6	737.9	831.0	863.9
67.5°	516.9	569.9	677.6	768.9	801.8
70°	449.3	500.5	615.5	705.0	737.9
72.5°	376.3	434.7	549.8	642.9	677.6
75°	303.2	372.6	485.8	577.2	610.0
77.5°	235.6	306.8	420.1	495.0	511.4
80°	173.5	246.6	345.2	398.2	418.3
82.5°	111.4	184.5	263.0	301.4	317.8
85°	62.1	122.4	171.7	193.6	200.9
87.5°	25.6	53.0	69.4	78.5	78.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)