

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: P311660

Luminaire Tested: **24FCZ2-60HE-UNV-L82765-S-CA08-W2A-U-2700K**

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: P311660
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-CA08-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 2700K 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: 5317.0 lumens
Efficiency: N/A
Efficacy: 111.7 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

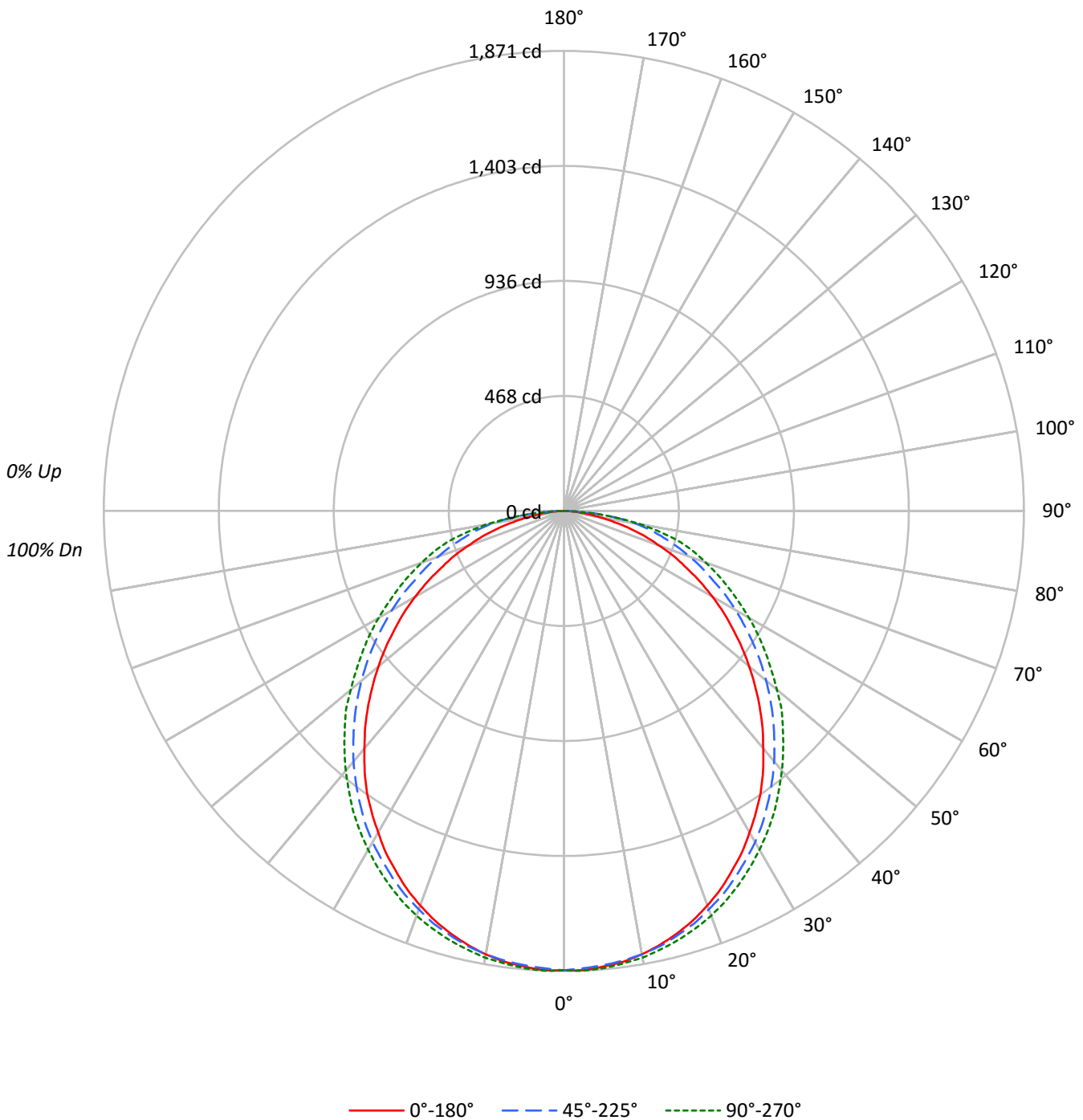
Input Watts (W): 47.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2513	2513	2513
5°	2511	2505	2521
10°	2501	2501	2520
15°	2477	2489	2515
20°	2445	2469	2508
25°	2400	2445	2492
30°	2346	2417	2472
35°	2294	2377	2452
40°	2216	2337	2423
45°	2144	2291	2397
50°	2061	2248	2368
55°	1969	2207	2345
60°	1877	2172	2341
65°	1758	2135	2355
70°	1628	2146	2419
75°	1458	2186	2555
80°	1178	2316	2500
85°	886	2033	1982



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	176.8	3.3
10°-20°	505.3	9.5
20°-30°	759.6	14.3
30°-40°	904.7	17.0
40°-50°	926.0	17.4
50°-60°	833.6	15.7
60°-70°	654.7	12.3
70°-80°	424.9	8.0
80°-90°	131.4	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°	1441.7	27.1
0°-40°	2346.4	44.1
0°-60°	4106.0	77.2
0°-90°	5317.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5317.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1868	1868	1868	1868	1868	
5°	1860	1863	1854	1864	1866	177
15°	1778	1784	1787	1802	1805	501
25°	1616	1630	1647	1674	1679	745
35°	1397	1414	1447	1483	1493	871
45°	1126	1154	1204	1250	1260	868
55°	839	876	941	990	1000	753
65°	552	594	670	726	740	550
75°	280	334	420	478	492	297
85°	57	106	132	128	128	69
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1867.9	1867.9	1867.9	1867.9	1867.9
2.5°	1869.6	1869.6	1861.1	1869.6	1871.3
5°	1859.5	1862.8	1854.4	1864.5	1866.2
7.5°	1849.3	1849.3	1844.3	1854.4	1856.1
10°	1830.7	1832.4	1830.7	1842.6	1844.3
12.5°	1807.1	1810.5	1812.2	1824.0	1825.7
15°	1778.4	1783.5	1786.8	1802.0	1805.4
17.5°	1746.3	1751.4	1759.8	1776.7	1780.1
20°	1707.5	1714.2	1724.3	1746.3	1751.4
22.5°	1665.2	1672.0	1688.9	1709.1	1717.6
25°	1616.3	1629.8	1646.7	1673.7	1678.7
27.5°	1567.3	1579.1	1601.1	1629.8	1636.5
30°	1509.9	1528.4	1555.5	1584.2	1590.9
32.5°	1454.1	1472.7	1504.8	1535.2	1543.6
35°	1396.7	1413.6	1447.4	1482.8	1493.0
37.5°	1330.8	1352.8	1389.9	1425.4	1435.5
40°	1261.6	1288.6	1330.8	1368.0	1379.8
42.5°	1195.7	1224.4	1266.7	1307.2	1320.7
45°	1126.5	1153.5	1204.2	1249.8	1259.9
47.5°	1055.5	1085.9	1140.0	1185.6	1202.5
50°	984.6	1016.7	1074.1	1121.4	1131.5
52.5°	913.7	947.5	1008.3	1058.9	1064.0
55°	839.4	876.5	940.7	989.7	999.8
57.5°	771.8	803.9	873.1	923.8	935.6
60°	697.5	733.0	807.3	854.6	869.8
62.5°	626.6	663.7	741.4	788.7	802.2
65°	552.3	594.5	670.5	726.2	739.7
67.5°	488.1	528.6	609.7	663.7	677.2
70°	413.8	459.4	545.5	601.2	614.8
72.5°	349.6	396.9	483.0	537.1	557.3
75°	280.4	334.4	420.5	478.0	491.5
77.5°	212.8	275.3	363.1	407.0	407.0
80°	152.0	217.9	298.9	319.2	322.6
82.5°	99.6	163.8	221.2	219.6	219.6
85°	57.4	106.4	131.7	128.4	128.4
87.5°	22.0	43.9	47.3	47.3	45.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)