

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: P311442

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-5700K**

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: P311442
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: 24FCZ2-45HE-UNV-L82765-S-CA08-W2A-U-5700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 5700K 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: 4492.0 lumens
Efficiency: N/A
Efficacy: 129.5 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

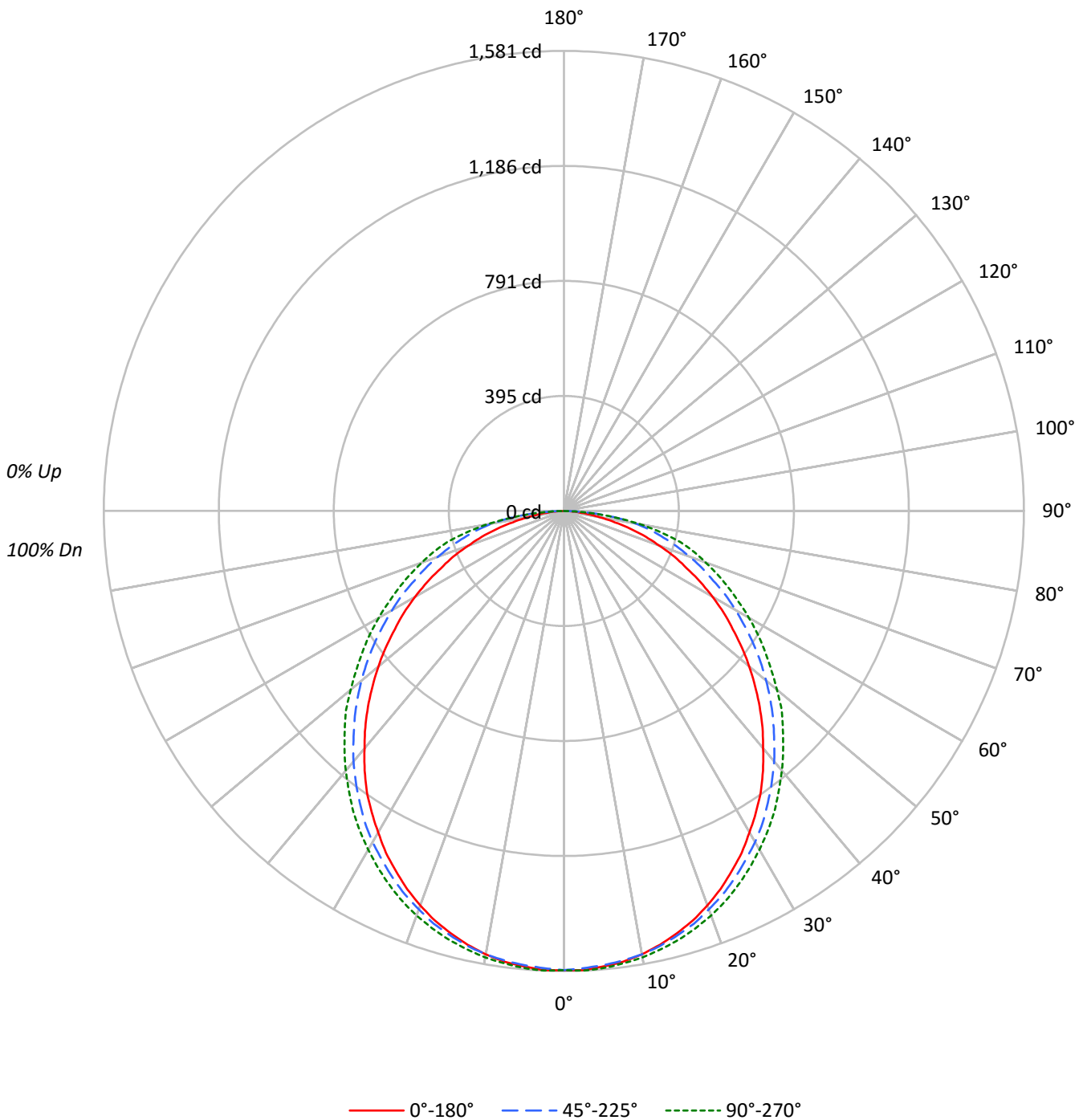
Input Watts (W): 34.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	2123	2123	2123
5°	2122	2116	2129
10°	2113	2113	2129
15°	2093	2103	2125
20°	2065	2086	2119
25°	2027	2065	2106
30°	1982	2042	2088
35°	1938	2008	2072
40°	1872	1975	2047
45°	1811	1936	2025
50°	1741	1900	2001
55°	1663	1864	1981
60°	1586	1835	1977
65°	1486	1803	1989
70°	1375	1813	2043
75°	1232	1847	2158
80°	995	1956	2111
85°	749	1718	1673



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	149.4	3.3
10°-20°	426.9	9.5
20°-30°	641.7	14.3
30°-40°	764.4	17.0
40°-50°	782.3	17.4
50°-60°	704.3	15.7
60°-70°	553.1	12.3
70°-80°	359.0	8.0
80°-90°	111.0	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°	1218.0	27.1
0°-40°	1982.3	44.1
0°-60°	3468.9	77.2
0°-90°	4492.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4492.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1578	1578	1578	1578	1578	
5°	1571	1574	1567	1575	1577	149
15°	1502	1507	1510	1522	1525	424
25°	1366	1377	1391	1414	1418	629
35°	1180	1194	1223	1253	1261	736
45°	952	974	1017	1056	1064	734
55°	709	740	795	836	845	636
65°	467	502	566	614	625	464
75°	237	282	355	404	415	251
85°	48	90	111	108	108	59
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1578.1	1578.1	1578.1	1578.1	1578.1
2.5°	1579.5	1579.5	1572.4	1579.5	1580.9
5°	1570.9	1573.8	1566.7	1575.2	1576.6
7.5°	1562.4	1562.4	1558.1	1566.7	1568.1
10°	1546.7	1548.1	1546.7	1556.7	1558.1
12.5°	1526.7	1529.6	1531.0	1541.0	1542.4
15°	1502.4	1506.7	1509.6	1522.4	1525.3
17.5°	1475.3	1479.6	1486.8	1501.0	1503.9
20°	1442.5	1448.2	1456.8	1475.3	1479.6
22.5°	1406.8	1412.6	1426.8	1443.9	1451.1
25°	1365.5	1376.9	1391.2	1414.0	1418.3
27.5°	1324.1	1334.1	1352.6	1376.9	1382.6
30°	1275.6	1291.3	1314.1	1338.4	1344.1
32.5°	1228.5	1244.2	1271.3	1297.0	1304.1
35°	1180.0	1194.3	1222.8	1252.8	1261.3
37.5°	1124.3	1142.9	1174.3	1204.2	1212.8
40°	1065.8	1088.7	1124.3	1155.7	1165.7
42.5°	1010.2	1034.4	1070.1	1104.4	1115.8
45°	951.7	974.5	1017.3	1055.9	1064.4
47.5°	891.8	917.4	963.1	1001.6	1015.9
50°	831.8	858.9	907.5	947.4	956.0
52.5°	771.9	800.4	851.8	894.6	898.9
55°	709.1	740.5	794.7	836.1	844.7
57.5°	652.1	679.2	737.7	780.5	790.5
60°	589.3	619.2	682.0	722.0	734.8
62.5°	529.4	560.7	626.4	666.3	677.7
65°	466.6	502.2	566.4	613.5	624.9
67.5°	412.4	446.6	515.1	560.7	572.2
70°	349.6	388.1	460.9	507.9	519.4
72.5°	295.4	335.3	408.1	453.7	470.9
75°	236.9	282.5	355.3	403.8	415.2
77.5°	179.8	232.6	306.8	343.9	343.9
80°	128.4	184.1	252.5	269.7	272.5
82.5°	84.2	138.4	186.9	185.5	185.5
85°	48.5	89.9	111.3	108.4	108.4
87.5°	18.5	37.1	40.0	40.0	38.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)