

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: P311397

Luminaire Tested: **24FCZ2-40-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: P311397
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: 24FCZ2-40-UNV-L82765-S-CA08-W2A-U-5700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.08" ACRYLIC SHEET
Light Source: (168) 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: 4054.0 lumens
Efficiency: N/A
Efficacy: 120.7 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

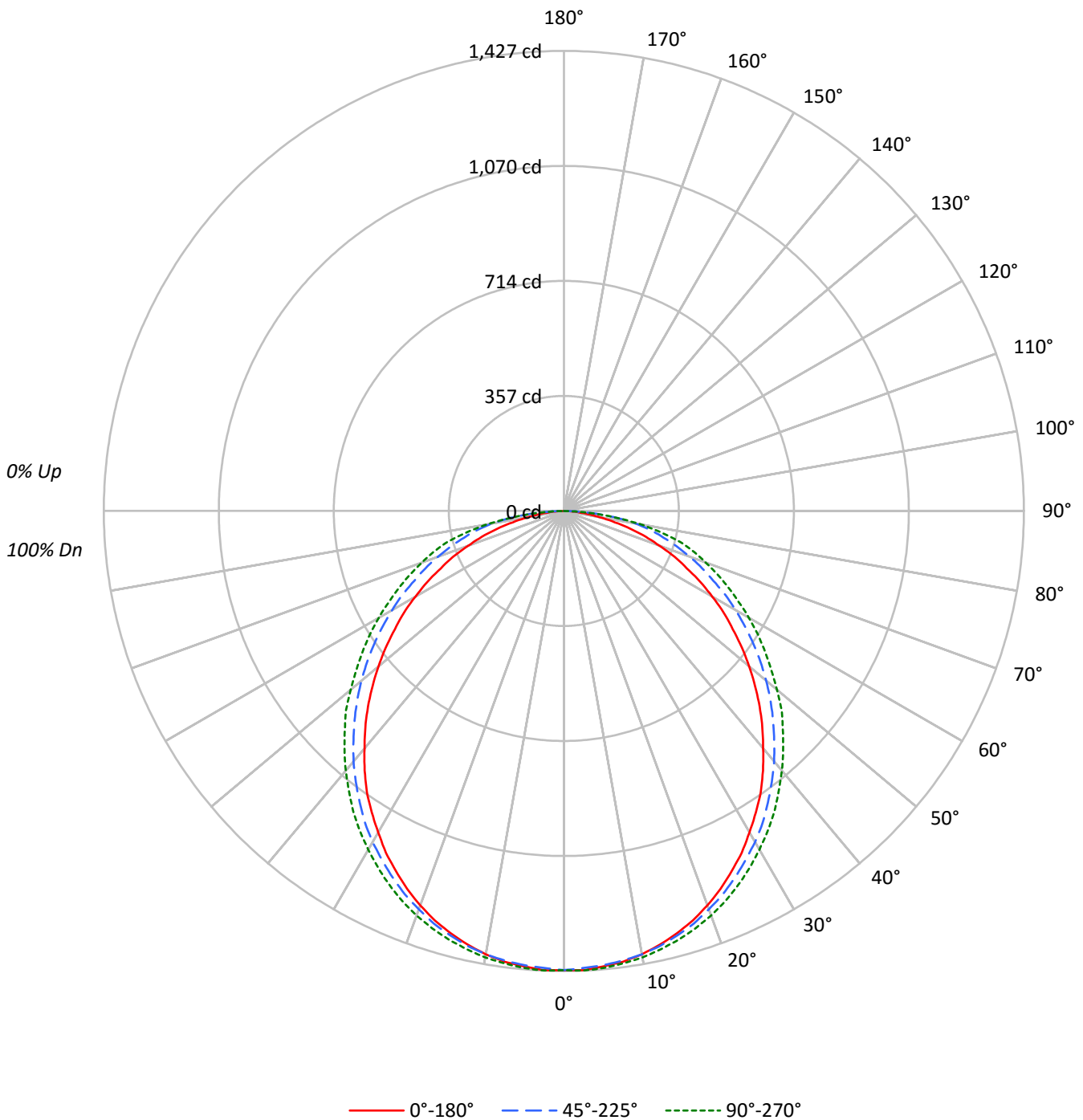
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1916	1916	1916
5°	1915	1910	1922
10°	1907	1907	1921
15°	1889	1898	1918
20°	1864	1882	1912
25°	1829	1864	1900
30°	1789	1843	1885
35°	1749	1813	1870
40°	1689	1782	1848
45°	1634	1747	1828
50°	1571	1714	1806
55°	1501	1682	1788
60°	1431	1656	1785
65°	1341	1628	1796
70°	1241	1636	1844
75°	1111	1667	1948
80°	898	1766	1906
85°	676	1550	1511



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.8	3.3
10°-20°	385.3	9.5
20°-30°	579.1	14.3
30°-40°	689.8	17.0
40°-50°	706.0	17.4
50°-60°	635.6	15.7
60°-70°	499.2	12.3
70°-80°	324.0	8.0
80°-90°	100.2	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°	1099.2	27.1
0°-40°	1789.0	44.1
0°-60°	3130.7	77.2
0°-90°	4054.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4054.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1424	1424	1424	1424	1424	
5°	1418	1420	1414	1422	1423	135
15°	1356	1360	1362	1374	1377	382
25°	1232	1243	1256	1276	1280	568
35°	1065	1078	1104	1131	1138	664
45°	859	880	918	953	961	662
55°	640	668	717	755	762	574
65°	421	453	511	554	564	419
75°	214	255	321	364	375	226
85°	44	81	100	98	98	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1424.2	1424.2	1424.2	1424.2	1424.2
2.5°	1425.5	1425.5	1419.0	1425.5	1426.8
5°	1417.8	1420.3	1413.9	1421.6	1422.9
7.5°	1410.0	1410.0	1406.2	1413.9	1415.2
10°	1395.9	1397.2	1395.9	1404.9	1406.2
12.5°	1377.8	1380.4	1381.7	1390.7	1392.0
15°	1355.9	1359.8	1362.4	1374.0	1376.6
17.5°	1331.5	1335.3	1341.8	1354.7	1357.2
20°	1301.9	1307.0	1314.7	1331.5	1335.3
22.5°	1269.7	1274.8	1287.7	1303.2	1309.6
25°	1232.3	1242.6	1255.5	1276.1	1280.0
27.5°	1195.0	1204.0	1220.7	1242.6	1247.8
30°	1151.2	1165.4	1186.0	1207.9	1213.0
32.5°	1108.7	1122.9	1147.3	1170.5	1177.0
35°	1064.9	1077.8	1103.6	1130.6	1138.3
37.5°	1014.7	1031.4	1059.8	1086.8	1094.5
40°	961.9	982.5	1014.7	1043.0	1052.1
42.5°	911.7	933.6	965.8	996.7	1007.0
45°	858.9	879.5	918.1	952.9	960.6
47.5°	804.8	828.0	869.2	904.0	916.8
50°	750.7	775.2	819.0	855.0	862.8
52.5°	696.6	722.4	768.8	807.4	811.3
55°	640.0	668.3	717.2	754.6	762.3
57.5°	588.5	612.9	665.7	704.4	713.4
60°	531.8	558.9	615.5	651.6	663.2
62.5°	477.7	506.1	565.3	601.4	611.7
65°	421.1	453.3	511.2	553.7	564.0
67.5°	372.1	403.1	464.9	506.1	516.4
70°	315.5	350.3	415.9	458.4	468.7
72.5°	266.6	302.6	368.3	409.5	424.9
75°	213.8	255.0	320.6	364.4	374.7
77.5°	162.3	209.9	276.9	310.3	310.3
80°	115.9	166.1	227.9	243.4	246.0
82.5°	76.0	124.9	168.7	167.4	167.4
85°	43.8	81.1	100.4	97.9	97.9
87.5°	16.7	33.5	36.1	36.1	34.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)