

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: P310763

Luminaire Tested: **24FCZ2-45HE-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: P310763
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: 24FCZ2-45HE-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: 4093.0 lumens
Efficiency: N/A
Efficacy: 119.7 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

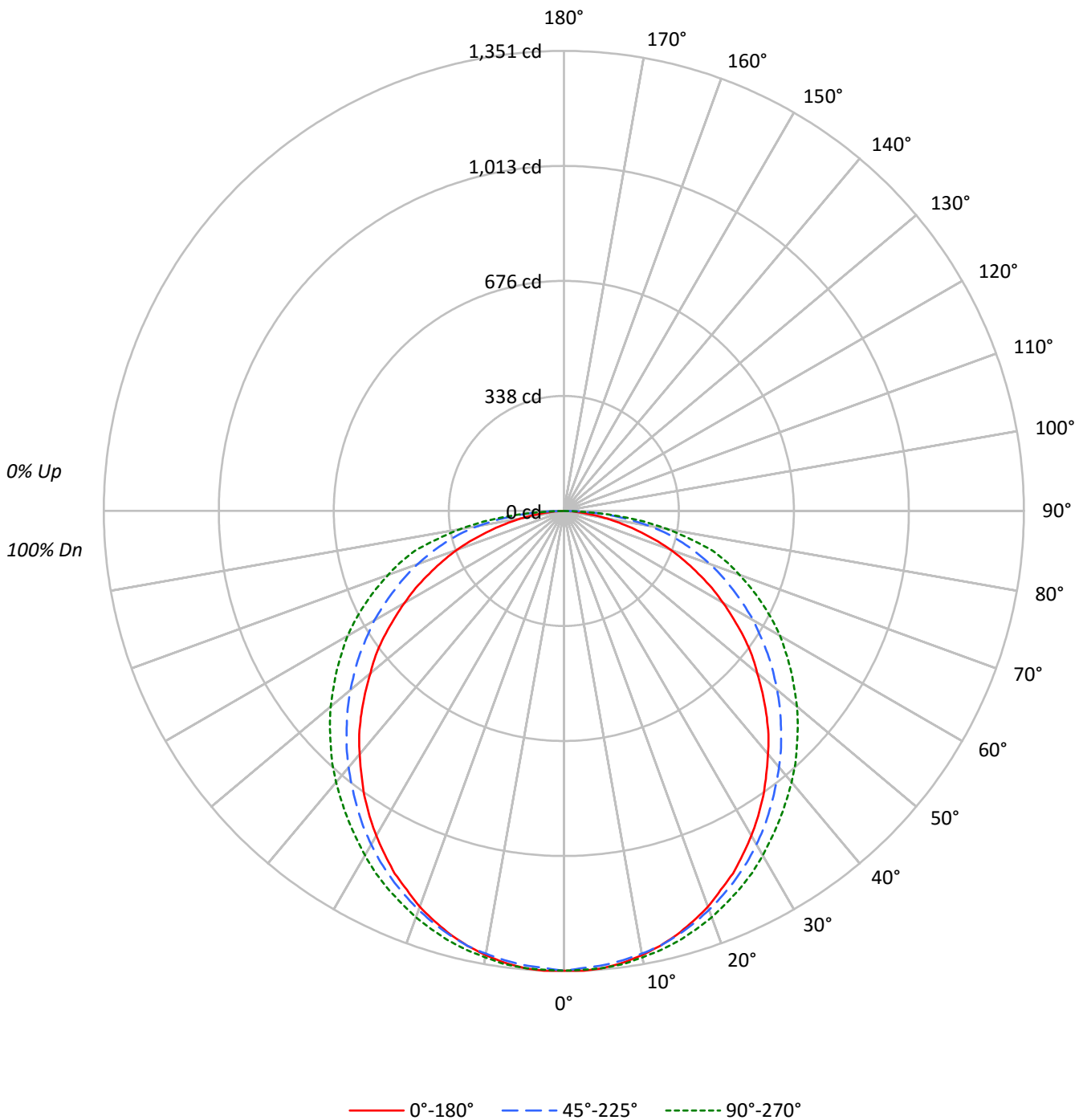
Input Watts (W): 34.2
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	98	94	105	100	96	92	96	92	89	92	89	87	88	86	84	82
2	98	89	81	75	95	87	80	74	83	78	73	80	75	71	77	73	69	67
3	89	77	69	62	86	76	68	61	73	66	60	70	64	59	67	62	58	56
4	81	68	59	52	79	67	58	52	64	57	51	62	56	50	60	54	50	47
5	74	61	52	45	72	60	51	44	58	50	44	56	49	43	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	64	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	37	31	57	45	36	30	43	36	30	42	35	30	41	34	30	28
9	55	41	33	27	54	41	33	27	40	32	27	39	32	27	38	31	27	25
10	52	38	30	25	50	38	30	25	37	30	25	36	29	25	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1816	1816	1816
5°	1819	1808	1819
10°	1809	1803	1818
15°	1793	1797	1820
20°	1771	1785	1818
25°	1744	1772	1816
30°	1711	1757	1814
35°	1677	1740	1816
40°	1639	1727	1827
45°	1600	1716	1842
50°	1552	1711	1870
55°	1513	1714	1908
60°	1454	1728	1973
65°	1388	1747	2045
70°	1314	1800	2158
75°	1172	1878	2358
80°	1000	1989	2410
85°	713	1971	2306



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	127.7	3.1
10°-20°	365.3	8.9
20°-30°	551.7	13.5
30°-40°	664.9	16.2
40°-50°	698.1	17.1
50°-60°	653.1	16.0
60°-70°	539.3	13.2
70°-80°	367.5	9.0
80°-90°	125.3	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°	1044.7	25.5
0°-40°	1709.7	41.8
0°-60°	3060.8	74.8
0°-90°	4093.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4093.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1350	1350	1350	1350	1350	
5°	1347	1346	1339	1347	1347	128
15°	1287	1289	1290	1304	1306	363
25°	1175	1180	1194	1217	1224	540
35°	1021	1032	1059	1094	1105	638
45°	841	858	902	951	968	648
55°	645	671	731	790	813	576
65°	436	473	549	618	642	432
75°	225	277	361	429	454	240
85°	46	91	128	144	149	58
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1349.8	1349.8	1349.8	1349.8	1349.8
2.5°	1351.2	1349.8	1343.0	1349.8	1348.5
5°	1347.1	1345.8	1339.0	1347.1	1347.1
7.5°	1337.6	1337.6	1330.8	1340.3	1341.7
10°	1324.0	1324.0	1320.0	1330.8	1330.8
12.5°	1307.7	1307.7	1307.7	1318.6	1320.0
15°	1287.4	1288.7	1290.1	1303.7	1306.4
17.5°	1262.9	1265.6	1269.7	1286.0	1288.7
20°	1237.1	1239.8	1246.6	1265.6	1269.7
22.5°	1204.5	1211.3	1220.8	1242.6	1246.6
25°	1174.7	1180.1	1193.7	1216.8	1223.5
27.5°	1138.0	1146.1	1163.8	1188.2	1197.7
30°	1101.3	1109.5	1131.2	1159.7	1167.9
32.5°	1061.9	1074.2	1097.3	1127.1	1136.6
35°	1021.2	1032.1	1059.2	1094.5	1105.4
37.5°	976.4	991.3	1021.2	1059.2	1072.8
40°	932.9	949.2	983.2	1023.9	1040.2
42.5°	889.5	905.8	943.8	990.0	1006.3
45°	840.6	858.2	901.7	950.6	968.2
47.5°	791.7	813.4	861.0	912.6	931.6
50°	741.5	765.9	817.5	871.8	893.6
52.5°	696.6	719.7	774.1	832.4	852.8
55°	645.0	670.8	730.6	790.3	813.4
57.5°	592.1	620.6	684.4	749.6	772.7
60°	540.5	571.7	642.3	707.5	733.3
62.5°	490.2	521.5	594.8	662.7	688.5
65°	435.9	472.6	548.6	617.9	642.3
67.5°	384.3	423.7	503.8	571.7	596.2
70°	334.1	372.1	457.6	524.2	548.6
72.5°	279.7	323.2	408.8	478.0	503.8
75°	225.4	277.0	361.2	429.1	453.6
77.5°	175.2	228.1	312.3	368.0	380.2
80°	129.0	183.3	256.7	296.0	311.0
82.5°	82.8	137.2	195.5	224.1	236.3
85°	46.2	91.0	127.7	143.9	149.4
87.5°	19.0	39.4	51.6	58.4	58.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)