

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: P310761

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-CA08-W2A-U-3000K**

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: P310761
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-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.08" ACRYLIC SHEET
Light Source: (336) 3000K 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: 3871.0 lumens
Efficiency: N/A
Efficacy: 115.2 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

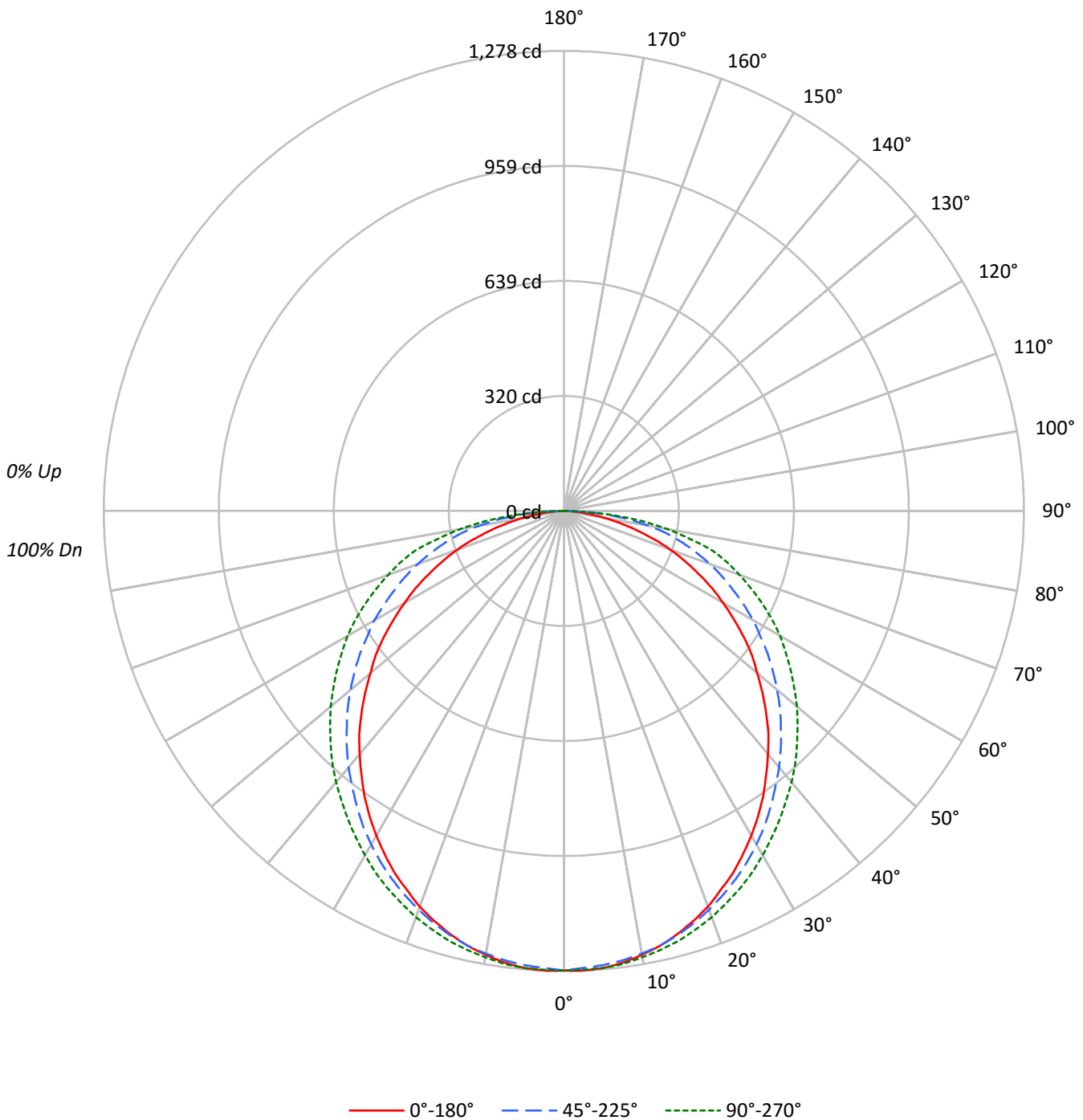
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	1718	1718	1718
5°	1721	1710	1721
10°	1711	1706	1720
15°	1696	1700	1721
20°	1675	1688	1719
25°	1649	1676	1718
30°	1618	1662	1716
35°	1586	1645	1717
40°	1550	1633	1728
45°	1513	1623	1742
50°	1468	1618	1769
55°	1431	1621	1805
60°	1376	1635	1866
65°	1313	1652	1934
70°	1243	1703	2041
75°	1108	1776	2230
80°	945	1881	2279
85°	675	1863	2181



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.8	3.1
10°-20°	345.5	8.9
20°-30°	521.8	13.5
30°-40°	628.9	16.2
40°-50°	660.2	17.1
50°-60°	617.7	16.0
60°-70°	510.1	13.2
70°-80°	347.6	9.0
80°-90°	118.5	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°	988.1	25.5
0°-40°	1616.9	41.8
0°-60°	2894.8	74.8
0°-90°	3871.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3871.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1277	1277	1277	1277	1277	
5°	1274	1273	1266	1274	1274	121
15°	1218	1219	1220	1233	1236	343
25°	1111	1116	1129	1151	1157	511
35°	966	976	1002	1035	1045	604
45°	795	812	853	899	916	613
55°	610	634	691	748	769	545
65°	412	447	519	584	608	409
75°	213	262	342	406	429	227
85°	44	86	121	136	141	55
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1276.6	1276.6	1276.6	1276.6	1276.6
2.5°	1277.9	1276.6	1270.2	1276.6	1275.3
5°	1274.1	1272.8	1266.3	1274.1	1274.1
7.5°	1265.1	1265.1	1258.6	1267.6	1268.9
10°	1252.2	1252.2	1248.4	1258.6	1258.6
12.5°	1236.8	1236.8	1236.8	1247.1	1248.4
15°	1217.5	1218.8	1220.1	1233.0	1235.5
17.5°	1194.4	1197.0	1200.8	1216.3	1218.8
20°	1170.0	1172.6	1179.0	1197.0	1200.8
22.5°	1139.2	1145.6	1154.6	1175.2	1179.0
25°	1110.9	1116.1	1128.9	1150.8	1157.2
27.5°	1076.3	1084.0	1100.7	1123.8	1132.8
30°	1041.6	1049.3	1069.8	1096.8	1104.5
32.5°	1004.3	1015.9	1037.7	1066.0	1075.0
35°	965.8	976.1	1001.8	1035.2	1045.4
37.5°	923.4	937.6	965.8	1001.8	1014.6
40°	882.3	897.7	929.9	968.4	983.8
42.5°	841.2	856.6	892.6	936.3	951.7
45°	795.0	811.7	852.8	899.0	915.7
47.5°	748.8	769.3	814.3	863.1	881.0
50°	701.2	724.4	773.2	824.5	845.1
52.5°	658.9	680.7	732.1	787.3	806.6
55°	610.1	634.5	691.0	747.5	769.3
57.5°	560.0	586.9	647.3	708.9	730.8
60°	511.2	540.7	607.5	669.1	693.5
62.5°	463.6	493.2	562.5	626.8	651.2
65°	412.3	446.9	518.9	584.4	607.5
67.5°	363.5	400.7	476.5	540.7	563.8
70°	315.9	351.9	432.8	495.8	518.9
72.5°	264.6	305.7	386.6	452.1	476.5
75°	213.2	262.0	341.6	405.8	429.0
77.5°	165.7	215.8	295.4	348.1	359.6
80°	122.0	173.4	242.7	280.0	294.1
82.5°	78.3	129.7	184.9	211.9	223.5
85°	43.7	86.0	120.7	136.1	141.3
87.5°	18.0	37.2	48.8	55.2	55.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)