

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: P310760

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-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: P310760  
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-2700K  
Description: 2'X4' TROFFER LED MODULE, RIBBED 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: 3762.0 lumens  
Efficiency: N/A  
Efficacy: 111.3 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

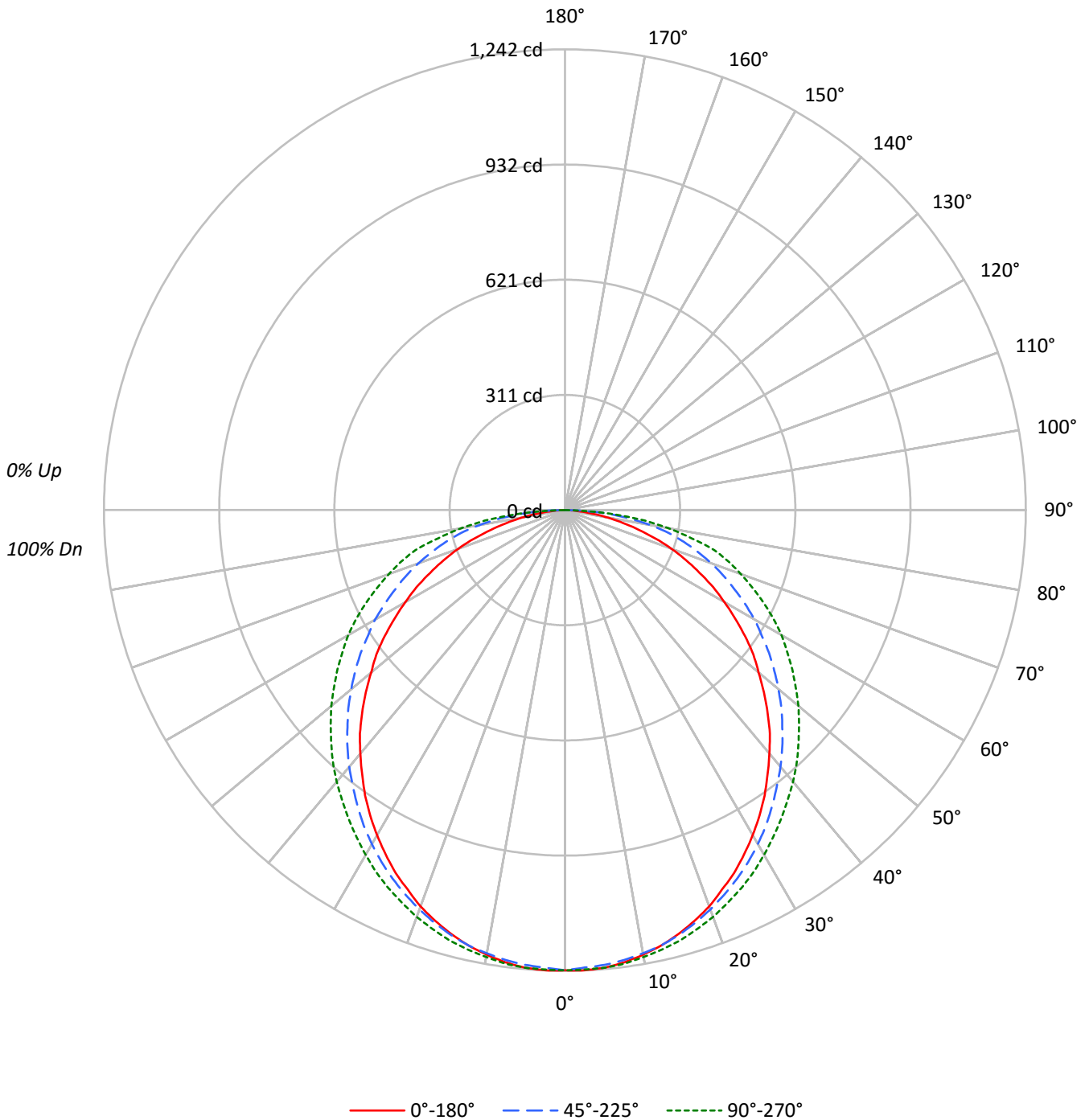
Input Watts (W): 33.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1669	1669	1669
5°	1672	1662	1672
10°	1663	1658	1671
15°	1648	1652	1673
20°	1628	1641	1671
25°	1603	1629	1670
30°	1573	1615	1668
35°	1542	1599	1669
40°	1506	1587	1679
45°	1470	1577	1693
50°	1427	1573	1719
55°	1391	1575	1754
60°	1337	1589	1814
65°	1276	1606	1880
70°	1208	1655	1984
75°	1077	1726	2167
80°	919	1828	2214
85°	655	1811	2120



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	117.4	3.1
10°-20°	335.7	8.9
20°-30°	507.1	13.5
30°-40°	611.2	16.2
40°-50°	641.6	17.1
50°-60°	600.3	16.0
60°-70°	495.7	13.2
70°-80°	337.8	9.0
80°-90°	115.2	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°	960.3	25.5
0°-40°	1571.4	41.8
0°-60°	2813.3	74.8
0°-90°	3762.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3762.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1241	1241	1241	1241	1241	
5°	1238	1237	1231	1238	1238	117
15°	1183	1184	1186	1198	1201	334
25°	1080	1085	1097	1118	1125	497
35°	939	949	974	1006	1016	587
45°	773	789	829	874	890	596
55°	593	617	672	726	748	529
65°	401	434	504	568	590	397
75°	207	255	332	394	417	221
85°	42	84	117	132	137	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1240.7	1240.7	1240.7	1240.7	1240.7
2.5°	1241.9	1240.7	1234.4	1240.7	1239.4
5°	1238.2	1236.9	1230.7	1238.2	1238.2
7.5°	1229.4	1229.4	1223.2	1231.9	1233.2
10°	1217.0	1217.0	1213.2	1223.2	1223.2
12.5°	1202.0	1202.0	1202.0	1212.0	1213.2
15°	1183.3	1184.5	1185.8	1198.2	1200.7
17.5°	1160.8	1163.3	1167.0	1182.0	1184.5
20°	1137.1	1139.6	1145.8	1163.3	1167.0
22.5°	1107.1	1113.4	1122.1	1142.1	1145.8
25°	1079.7	1084.7	1097.1	1118.4	1124.6
27.5°	1046.0	1053.5	1069.7	1092.1	1100.9
30°	1012.3	1019.7	1039.7	1065.9	1073.4
32.5°	976.1	987.3	1008.5	1036.0	1044.7
35°	938.6	948.6	973.6	1006.0	1016.0
37.5°	897.4	911.2	938.6	973.6	986.0
40°	857.5	872.5	903.7	941.1	956.1
42.5°	817.5	832.5	867.5	909.9	924.9
45°	772.6	788.8	828.8	873.7	889.9
47.5°	727.7	747.7	791.3	838.8	856.2
50°	681.5	704.0	751.4	801.3	821.3
52.5°	640.3	661.5	711.5	765.1	783.8
55°	592.9	616.6	671.5	726.4	747.7
57.5°	544.2	570.4	629.1	689.0	710.2
60°	496.8	525.5	590.4	650.3	674.0
62.5°	450.6	479.3	546.7	609.1	632.8
65°	400.7	434.4	504.3	567.9	590.4
67.5°	353.2	389.4	463.1	525.5	547.9
70°	307.0	342.0	420.6	481.8	504.3
72.5°	257.1	297.1	375.7	439.4	463.1
75°	207.2	254.6	332.0	394.4	416.9
77.5°	161.0	209.7	287.1	338.3	349.5
80°	118.6	168.5	235.9	272.1	285.8
82.5°	76.1	126.1	179.7	205.9	217.2
85°	42.4	83.6	117.3	132.3	137.3
87.5°	17.5	36.2	47.4	53.7	53.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)