

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: P310788

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-CP187-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: P310788
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-CP187-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB 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: 3622.0 lumens
Efficiency: N/A
Efficacy: 107.8 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

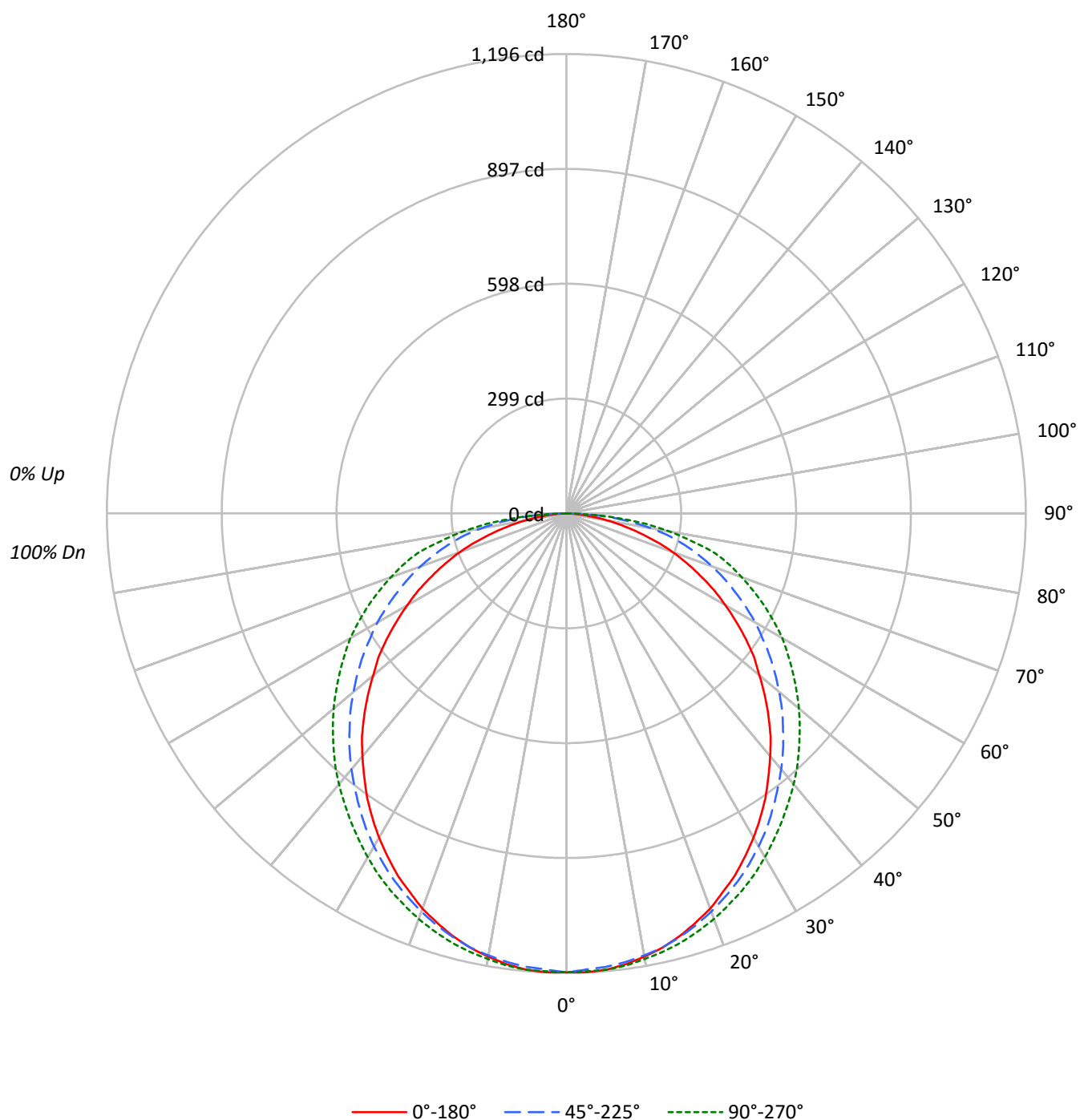
Input Watts (W): 33.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
RW	70	50	30	10	70	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		100
1	108	103	98	94	105	100	96	92	96	92	89		92	89	87		82
2	98	89	81	75	95	87	80	74	83	78	73		80	75	71		67
3	89	77	69	62	86	76	68	61	73	66	60		70	64	59		56
4	81	68	59	52	79	67	58	52	64	57	51		62	56	50		47
5	74	61	52	45	72	60	51	44	58	50	44		56	49	43		41
6	69	55	46	39	67	54	45	39	52	44	38		50	43	38		36
7	64	50	41	34	62	49	40	34	47	39	34		46	39	34		31
8	59	45	37	31	57	45	36	30	43	36	30		42	35	30		28
9	55	41	33	27	54	41	33	27	40	32	27		39	32	27		25
10	52	38	30	25	50	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1607	1607	1607
5°	1610	1600	1610
10°	1601	1596	1609
15°	1587	1590	1610
20°	1568	1580	1609
25°	1543	1568	1607
30°	1514	1555	1606
35°	1484	1540	1607
40°	1450	1528	1617
45°	1415	1518	1630
50°	1373	1514	1655
55°	1339	1517	1688
60°	1287	1530	1746
65°	1228	1546	1810
70°	1163	1593	1910
75°	1037	1662	2087
80°	885	1760	2132
85°	631	1744	2041



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.0	3.1
10°-20°	323.2	8.9
20°-30°	488.2	13.5
30°-40°	588.4	16.2
40°-50°	617.7	17.1
50°-60°	577.9	16.0
60°-70°	477.3	13.2
70°-80°	325.2	9.0
80°-90°	110.9	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°	924.5	25.5
0°-40°	1512.9	41.8
0°-60°	2708.6	74.8
0°-90°	3622.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3622.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1194	1194	1194	1194	1194	
5°	1192	1191	1185	1192	1192	113
15°	1139	1140	1142	1154	1156	321
25°	1040	1044	1056	1077	1083	478
35°	904	913	937	969	978	565
45°	744	760	798	841	857	574
55°	571	594	646	699	720	509
65°	386	418	486	547	568	383
75°	200	245	320	380	401	213
85°	41	80	113	127	132	51
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1194.5	1194.5	1194.5	1194.5	1194.5
2.5°	1195.7	1194.5	1188.5	1194.5	1193.3
5°	1192.1	1190.9	1184.9	1192.1	1192.1
7.5°	1183.7	1183.7	1177.7	1186.1	1187.3
10°	1171.7	1171.7	1168.1	1177.7	1177.7
12.5°	1157.3	1157.3	1157.3	1166.9	1168.1
15°	1139.2	1140.4	1141.6	1153.6	1156.0
17.5°	1117.6	1120.0	1123.6	1138.0	1140.4
20°	1094.8	1097.2	1103.2	1120.0	1123.6
22.5°	1065.9	1071.9	1080.3	1099.6	1103.2
25°	1039.5	1044.3	1056.3	1076.7	1082.7
27.5°	1007.0	1014.2	1029.9	1051.5	1059.9
30°	974.6	981.8	1001.0	1026.3	1033.5
32.5°	939.7	950.6	971.0	997.4	1005.8
35°	903.7	913.3	937.3	968.6	978.2
37.5°	864.0	877.3	903.7	937.3	949.4
40°	825.6	840.0	870.0	906.1	920.5
42.5°	787.1	801.5	835.2	876.0	890.5
45°	743.9	759.5	797.9	841.2	856.8
47.5°	700.6	719.8	761.9	807.6	824.4
50°	656.1	677.8	723.4	771.5	790.7
52.5°	616.5	636.9	685.0	736.7	754.7
55°	570.8	593.6	646.5	699.4	719.8
57.5°	523.9	549.2	605.7	663.3	683.8
60°	478.3	505.9	568.4	626.1	648.9
62.5°	433.8	461.5	526.4	586.4	609.3
65°	385.8	418.2	485.5	546.8	568.4
67.5°	340.1	374.9	445.8	505.9	527.6
70°	295.6	329.3	405.0	463.9	485.5
72.5°	247.6	286.0	361.7	423.0	445.8
75°	199.5	245.1	319.7	379.7	401.4
77.5°	155.0	201.9	276.4	325.7	336.5
80°	114.2	162.2	227.1	262.0	275.2
82.5°	73.3	121.4	173.0	198.3	209.1
85°	40.9	80.5	113.0	127.4	132.2
87.5°	16.8	34.8	45.7	51.7	51.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)