

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: P311462

Luminaire Tested: **24FCZ2-45HE-UNV-L82765-S-CP187-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: P311462
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: 24FCZ2-45HE-UNV-L82765-S-CP187-W2A-U-2700K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB 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: 3699.0 lumens
Efficiency: N/A
Efficacy: 109.4 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

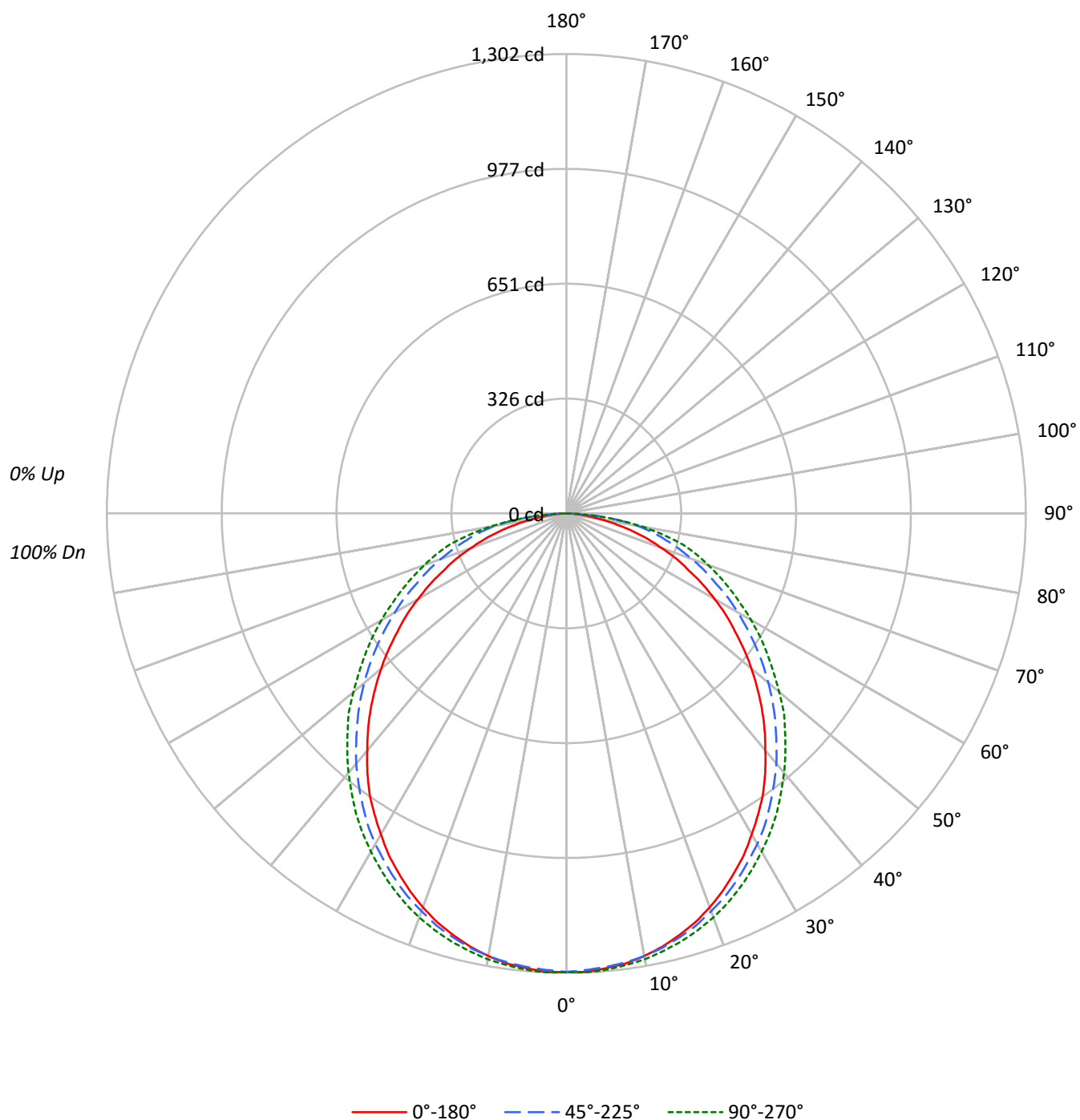
Input Watts (W): 33.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90		93	90	88		83
2	98	90	83	77	96	88	81	76	84	79	74		81	76	72		69
3	89	79	70	64	87	77	69	63	74	67	62		71	66	61		58
4	82	70	61	54	80	68	60	54	66	59	53		63	57	52		49
5	75	62	53	46	73	61	53	46	59	51	46		57	50	45		42
6	70	56	47	40	68	55	47	40	53	46	40		52	45	40		37
7	64	51	42	36	63	50	42	36	48	41	35		47	40	35		33
8	60	46	38	32	58	46	37	32	44	37	32		43	36	31		29
9	56	43	34	29	55	42	34	29	41	34	28		40	33	28		26
10	53	39	31	26	51	39	31	26	38	31	26		37	30	26		24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1748	1748	1748
5°	1747	1742	1754
10°	1740	1740	1753
15°	1723	1732	1750
20°	1701	1718	1745
25°	1669	1701	1734
30°	1632	1681	1720
35°	1596	1654	1706
40°	1542	1626	1686
45°	1491	1594	1668
50°	1434	1564	1648
55°	1370	1535	1632
60°	1306	1511	1628
65°	1223	1485	1638
70°	1133	1493	1683
75°	1014	1521	1777
80°	819	1612	1739
85°	616	1414	1379



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.0	3.3
10°-20°	351.5	9.5
20°-30°	528.4	14.3
30°-40°	629.4	17.0
40°-50°	644.2	17.4
50°-60°	579.9	15.7
60°-70°	455.5	12.3
70°-80°	295.6	8.0
80°-90°	91.4	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°	1003.0	27.1
0°-40°	1632.4	44.1
0°-60°	2856.5	77.2
0°-90°	3699.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3699.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1300	1300	1300	1300	1300	
5°	1294	1296	1290	1297	1298	123
15°	1237	1241	1243	1254	1256	349
25°	1124	1134	1146	1164	1168	518
35°	972	983	1007	1032	1039	606
45°	784	802	838	870	876	604
55°	584	610	654	688	696	523
65°	384	414	466	505	515	382
75°	195	233	293	332	342	206
85°	40	74	92	89	89	48
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1299.5	1299.5	1299.5	1299.5	1299.5
2.5°	1300.7	1300.7	1294.8	1300.7	1301.8
5°	1293.6	1296.0	1290.1	1297.1	1298.3
7.5°	1286.6	1286.6	1283.0	1290.1	1291.3
10°	1273.6	1274.8	1273.6	1281.9	1283.0
12.5°	1257.2	1259.5	1260.7	1268.9	1270.1
15°	1237.2	1240.7	1243.1	1253.7	1256.0
17.5°	1214.9	1218.4	1224.3	1236.0	1238.4
20°	1187.9	1192.6	1199.6	1214.9	1218.4
22.5°	1158.5	1163.2	1174.9	1189.0	1194.9
25°	1124.4	1133.8	1145.6	1164.4	1167.9
27.5°	1090.3	1098.6	1113.8	1133.8	1138.5
30°	1050.4	1063.3	1082.1	1102.1	1106.8
32.5°	1011.6	1024.5	1046.9	1068.0	1073.9
35°	971.7	983.4	1006.9	1031.6	1038.6
37.5°	925.9	941.1	967.0	991.6	998.7
40°	877.7	896.5	925.9	951.7	959.9
42.5°	831.9	851.8	881.2	909.4	918.8
45°	783.7	802.5	837.7	869.5	876.5
47.5°	734.3	755.5	793.1	824.8	836.6
50°	685.0	707.3	747.3	780.2	787.2
52.5°	635.6	659.1	701.4	736.7	740.2
55°	583.9	609.8	654.4	688.5	695.6
57.5°	536.9	559.3	607.4	642.7	650.9
60°	485.2	509.9	561.6	594.5	605.1
62.5°	435.9	461.8	515.8	548.7	558.1
65°	384.2	413.6	466.5	505.2	514.6
67.5°	339.6	367.8	424.2	461.8	471.2
70°	287.9	319.6	379.5	418.3	427.7
72.5°	243.2	276.1	336.0	373.6	387.7
75°	195.0	232.6	292.6	332.5	341.9
77.5°	148.0	191.5	252.6	283.2	283.2
80°	105.7	151.6	208.0	222.1	224.4
82.5°	69.3	114.0	153.9	152.7	152.7
85°	39.9	74.0	91.6	89.3	89.3
87.5°	15.3	30.5	32.9	32.9	31.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)