

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: P313960

Luminaire Tested: **24FCZ2-45HE-UNV-L83050-CP250-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: P313960
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-L83050-CP250-W2A-U-3000K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.250" 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: 3596.0 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.29 / 1.38
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

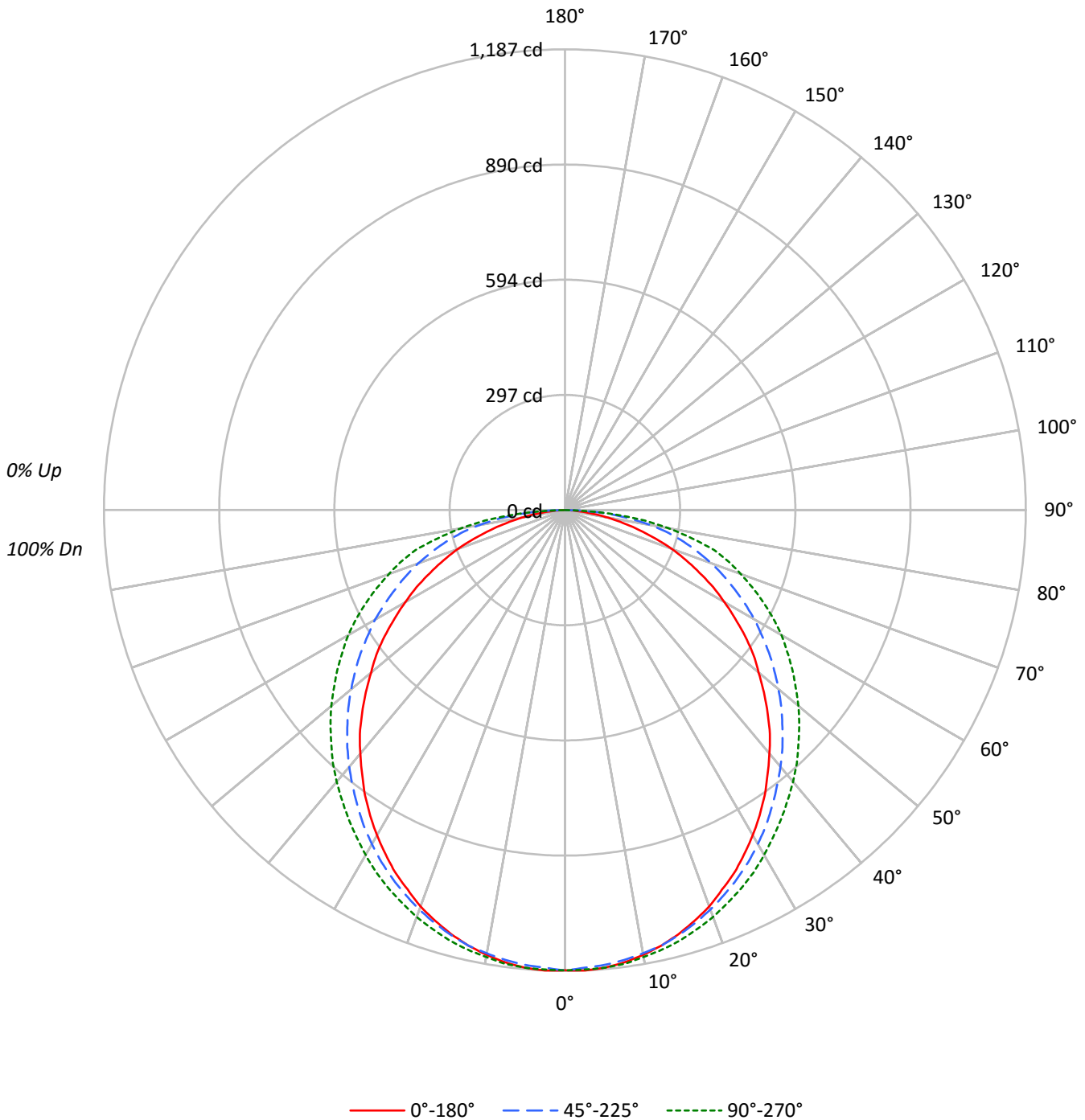
Input Watts (W): 33.7
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1596	1596	1596
5°	1598	1589	1598
10°	1589	1584	1597
15°	1575	1579	1599
20°	1556	1568	1597
25°	1532	1557	1596
30°	1503	1544	1594
35°	1474	1529	1595
40°	1440	1517	1605
45°	1405	1507	1619
50°	1364	1503	1643
55°	1329	1506	1677
60°	1278	1519	1734
65°	1219	1535	1797
70°	1155	1582	1896
75°	1030	1650	2072
80°	878	1747	2117
85°	627	1732	2025



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	112.2	3.1
10°-20°	320.9	8.9
20°-30°	484.7	13.5
30°-40°	584.2	16.2
40°-50°	613.3	17.1
50°-60°	573.8	16.0
60°-70°	473.8	13.2
70°-80°	322.9	9.0
80°-90°	110.1	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°	917.9	25.5
0°-40°	1502.1	41.8
0°-60°	2689.2	74.8
0°-90°	3596.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3596.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1186	1186	1186	1186	1186	
5°	1184	1182	1176	1184	1184	112
15°	1131	1132	1133	1145	1148	319
25°	1032	1037	1049	1069	1075	475
35°	897	907	931	962	971	561
45°	738	754	792	835	851	570
55°	567	589	642	694	715	506
65°	383	415	482	543	564	380
75°	198	243	317	377	398	211
85°	41	80	112	126	131	51
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1185.9	1185.9	1185.9	1185.9	1185.9
2.5°	1187.1	1185.9	1180.0	1185.9	1184.7
5°	1183.5	1182.4	1176.4	1183.5	1183.5
7.5°	1175.2	1175.2	1169.2	1177.6	1178.8
10°	1163.3	1163.3	1159.7	1169.2	1169.2
12.5°	1148.9	1148.9	1148.9	1158.5	1159.7
15°	1131.0	1132.2	1133.4	1145.4	1147.8
17.5°	1109.6	1112.0	1115.5	1129.9	1132.2
20°	1086.9	1089.3	1095.3	1112.0	1115.5
22.5°	1058.3	1064.2	1072.6	1091.7	1095.3
25°	1032.0	1036.8	1048.7	1069.0	1075.0
27.5°	999.8	1007.0	1022.5	1044.0	1052.3
30°	967.6	974.8	993.8	1018.9	1026.1
32.5°	933.0	943.7	964.0	990.3	998.6
35°	897.2	906.7	930.6	961.6	971.2
37.5°	857.8	871.0	897.2	930.6	942.5
40°	819.7	834.0	863.8	899.6	913.9
42.5°	781.5	795.8	829.2	869.8	884.1
45°	738.5	754.0	792.2	835.2	850.7
47.5°	695.6	714.7	756.4	801.8	818.5
50°	651.4	672.9	718.2	766.0	785.1
52.5°	612.1	632.3	680.1	731.4	749.3
55°	566.7	589.4	641.9	694.4	714.7
57.5°	520.2	545.2	601.3	658.6	678.9
60°	474.8	502.3	564.3	621.6	644.3
62.5°	430.7	458.1	522.6	582.2	604.9
65°	383.0	415.2	482.0	542.9	564.3
67.5°	337.6	372.2	442.6	502.3	523.8
70°	293.5	326.9	402.1	460.5	482.0
72.5°	245.8	284.0	359.1	420.0	442.6
75°	198.1	243.4	317.4	377.0	398.5
77.5°	153.9	200.4	274.4	323.3	334.1
80°	113.3	161.1	225.5	260.1	273.2
82.5°	72.8	120.5	171.8	196.9	207.6
85°	40.6	79.9	112.2	126.5	131.2
87.5°	16.7	34.6	45.3	51.3	51.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)