

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: P310834

Luminaire Tested: **24FCZ2-45-UNV-L82765-CP187-W2A-U-3500K**

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: P310834
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: 24FCZ2-45-UNV-L82765-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, RIBBED LENS, 0.187" POLYCARB SHEET
Light Source: (168) 3500K 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: 3786.0 lumens
Efficiency: N/A
Efficacy: 100.2 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

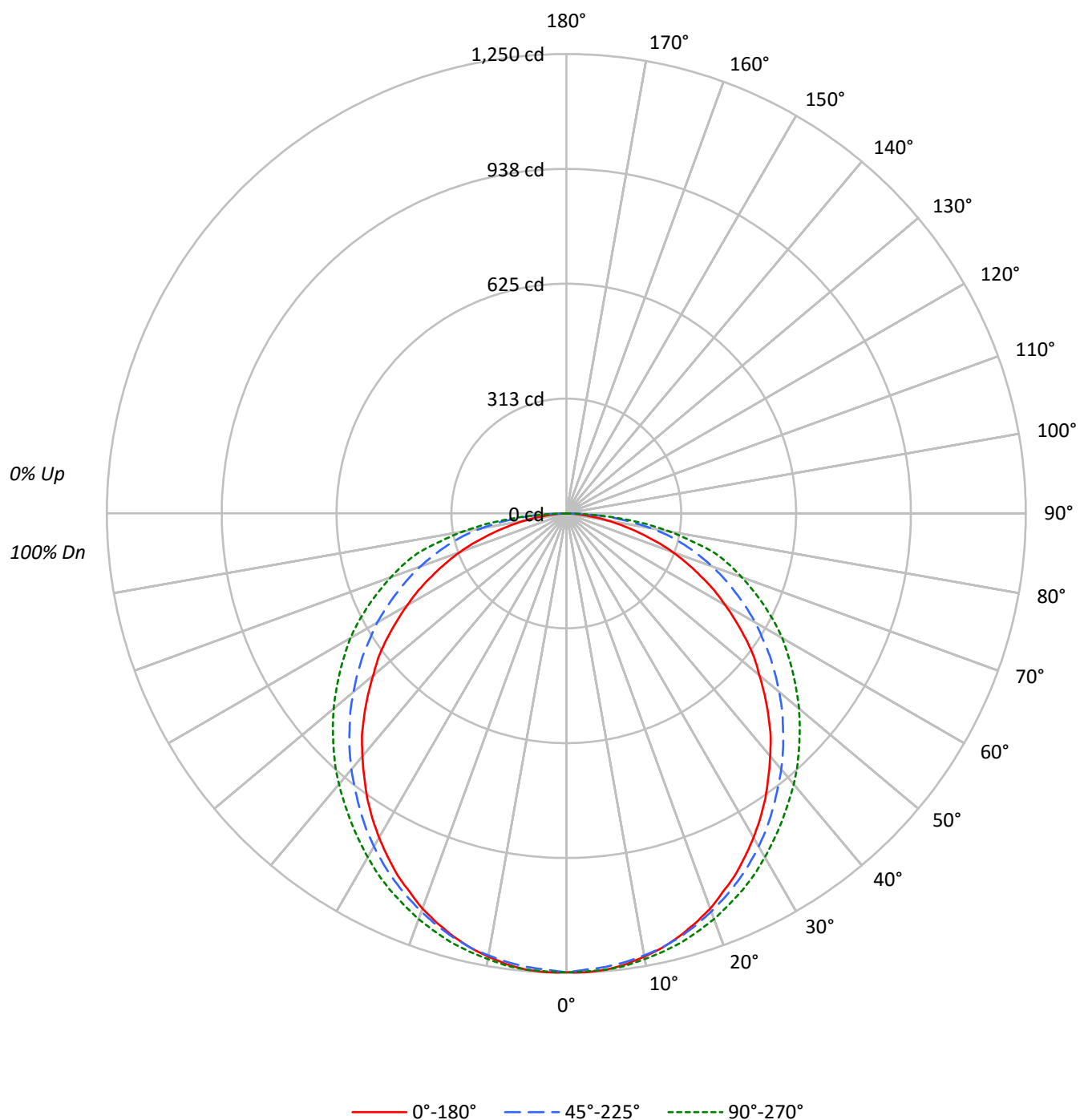
Input Watts (W): 37.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	50	30	10
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°	1680	1680	1680
5°	1683	1673	1683
10°	1673	1668	1682
15°	1659	1662	1683
20°	1638	1651	1682
25°	1613	1639	1680
30°	1583	1626	1678
35°	1552	1609	1679
40°	1516	1597	1690
45°	1479	1587	1704
50°	1436	1583	1730
55°	1400	1585	1765
60°	1345	1599	1825
65°	1284	1616	1891
70°	1216	1665	1996
75°	1084	1737	2181
80°	924	1839	2229
85°	659	1823	2133



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.2	3.1
10°-20°	337.9	8.9
20°-30°	510.3	13.5
30°-40°	615.1	16.2
40°-50°	645.7	17.1
50°-60°	604.1	16.0
60°-70°	498.9	13.2
70°-80°	339.9	9.0
80°-90°	115.9	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°	966.4	25.5
0°-40°	1581.4	41.8
0°-60°	2831.2	74.8
0°-90°	3786.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3786.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1249	1249	1249	1249	1249	
5°	1246	1245	1238	1246	1246	118
15°	1191	1192	1193	1206	1208	336
25°	1086	1092	1104	1126	1132	500
35°	945	955	980	1012	1022	590
45°	778	794	834	879	896	600
55°	597	620	676	731	752	533
65°	403	437	508	572	594	400
75°	208	256	334	397	420	222
85°	43	84	118	133	138	53
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1248.6	1248.6	1248.6	1248.6	1248.6
2.5°	1249.8	1248.6	1242.3	1248.6	1247.3
5°	1246.1	1244.8	1238.5	1246.1	1246.1
7.5°	1237.3	1237.3	1231.0	1239.8	1241.1
10°	1224.7	1224.7	1221.0	1231.0	1231.0
12.5°	1209.6	1209.6	1209.6	1219.7	1221.0
15°	1190.8	1192.1	1193.3	1205.9	1208.4
17.5°	1168.2	1170.7	1174.5	1189.6	1192.1
20°	1144.3	1146.8	1153.1	1170.7	1174.5
22.5°	1114.2	1120.5	1129.3	1149.4	1153.1
25°	1086.5	1091.6	1104.1	1125.5	1131.8
27.5°	1052.6	1060.2	1076.5	1099.1	1107.9
30°	1018.7	1026.3	1046.4	1072.7	1080.3
32.5°	982.3	993.6	1015.0	1042.6	1051.4
35°	944.6	954.7	979.8	1012.4	1022.5
37.5°	903.2	917.0	944.6	979.8	992.3
40°	863.0	878.0	909.4	947.1	962.2
42.5°	822.8	837.8	873.0	915.7	930.8
45°	777.5	793.9	834.1	879.3	895.6
47.5°	732.3	752.4	796.4	844.1	861.7
50°	685.8	708.5	756.2	806.4	826.5
52.5°	644.4	665.7	716.0	770.0	788.8
55°	596.7	620.5	675.8	731.1	752.4
57.5°	547.7	574.0	633.1	693.4	714.7
60°	499.9	528.8	594.1	654.4	678.3
62.5°	453.5	482.4	550.2	613.0	636.9
65°	403.2	437.1	507.5	571.5	594.1
67.5°	355.5	391.9	466.0	528.8	551.4
70°	309.0	344.2	423.3	484.9	507.5
72.5°	258.8	299.0	378.1	442.2	466.0
75°	208.5	256.2	334.1	396.9	419.5
77.5°	162.0	211.0	288.9	340.4	351.7
80°	119.3	169.6	237.4	273.8	287.7
82.5°	76.6	126.9	180.9	207.3	218.6
85°	42.7	84.2	118.1	133.1	138.2
87.5°	17.6	36.4	47.7	54.0	54.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)