

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: P311284

Luminaire Tested: **24FCZ2-35HE-UNV-L82765-S-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: P311284
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: 24FCZ2-35HE-UNV-L82765-S-CP187-W2A-U-3500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 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: 3090.0 lumens
Efficiency: N/A
Efficacy: 118.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.27 / 1.35
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

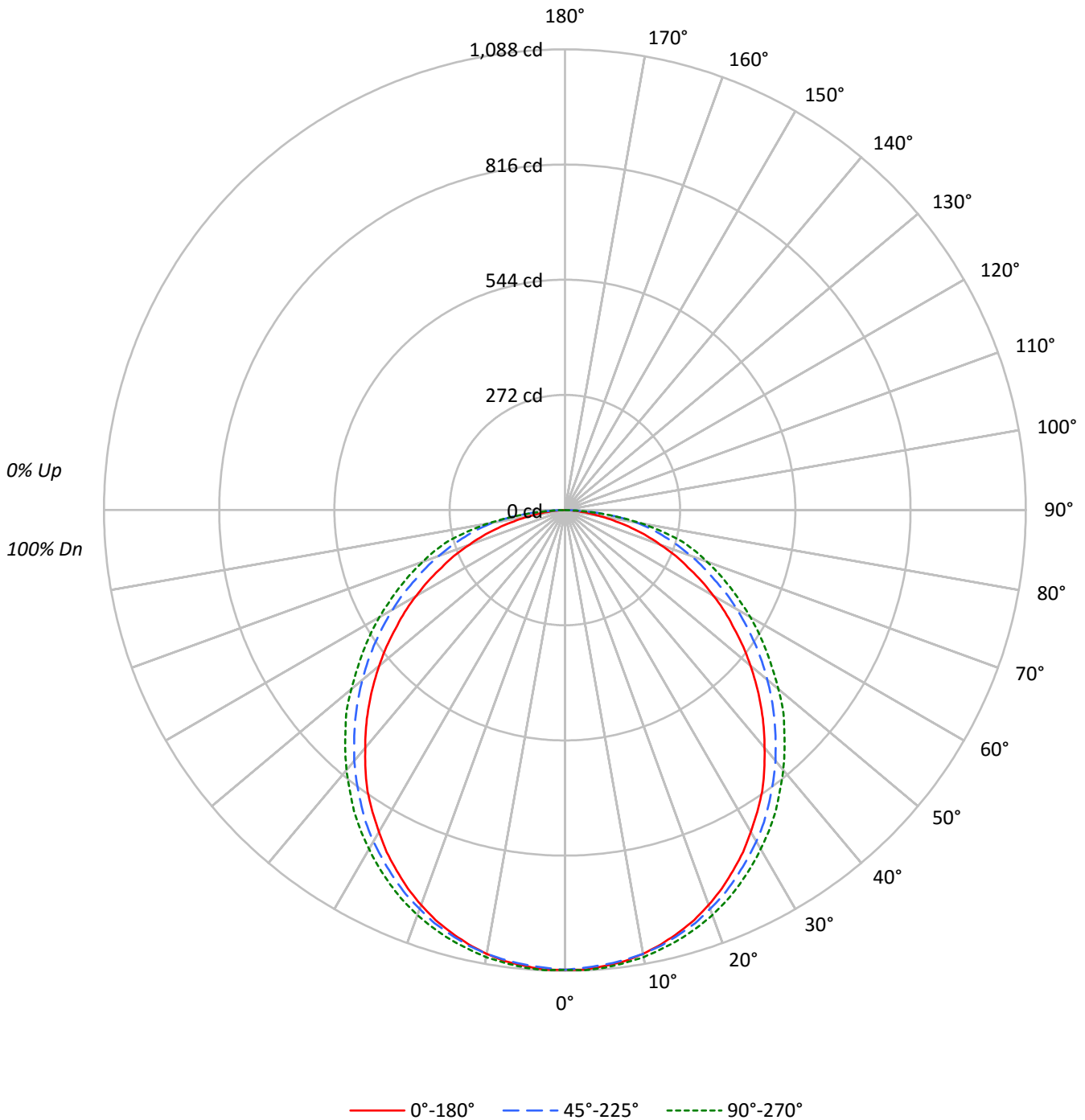
Input Watts (W): 26.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	99	95	106	101	97	93	97	93	90	93	90	88	89	87	85	83
2	98	90	83	77	96	88	81	76	84	79	74	81	76	72	78	74	71	69
3	89	79	70	64	87	77	69	63	74	67	62	71	66	61	69	64	60	58
4	82	70	61	54	80	68	60	54	66	59	53	63	57	52	61	56	51	49
5	75	62	53	46	73	61	53	46	59	51	46	57	50	45	55	49	45	42
6	70	56	47	40	68	55	47	40	53	46	40	52	45	40	50	44	39	37
7	64	51	42	36	63	50	42	36	48	41	35	47	40	35	46	39	35	33
8	60	46	38	32	58	46	37	32	44	37	32	43	36	31	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1461	1461	1461
5°	1459	1456	1465
10°	1454	1454	1464
15°	1440	1446	1461
20°	1421	1435	1457
25°	1394	1421	1448
30°	1363	1404	1436
35°	1333	1382	1425
40°	1288	1358	1408
45°	1246	1332	1393
50°	1198	1307	1376
55°	1144	1282	1363
60°	1091	1263	1360
65°	1022	1241	1369
70°	946	1247	1406
75°	847	1271	1485
80°	684	1346	1453
85°	516	1183	1152



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.8	3.3
10°-20°	293.6	9.5
20°-30°	441.4	14.3
30°-40°	525.8	17.0
40°-50°	538.1	17.4
50°-60°	484.5	15.7
60°-70°	380.5	12.3
70°-80°	246.9	8.0
80°-90°	76.4	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°	837.8	27.1
0°-40°	1363.6	44.1
0°-60°	2386.2	77.2
0°-90°	3090.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3090.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1086	1086	1086	1086	1086	
5°	1081	1083	1078	1084	1085	103
15°	1034	1036	1038	1047	1049	291
25°	939	947	957	973	976	433
35°	812	822	841	862	868	506
45°	655	670	700	726	732	505
55°	488	509	547	575	581	437
65°	321	346	390	422	430	319
75°	163	194	244	278	286	172
85°	33	62	77	75	75	40
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1085.5	1085.5	1085.5	1085.5	1085.5
2.5°	1086.5	1086.5	1081.6	1086.5	1087.5
5°	1080.6	1082.6	1077.7	1083.6	1084.6
7.5°	1074.7	1074.7	1071.8	1077.7	1078.7
10°	1063.9	1064.9	1063.9	1070.8	1071.8
12.5°	1050.2	1052.2	1053.1	1060.0	1061.0
15°	1033.5	1036.5	1038.4	1047.3	1049.2
17.5°	1014.9	1017.8	1022.7	1032.5	1034.5
20°	992.3	996.2	1002.1	1014.9	1017.8
22.5°	967.8	971.7	981.5	993.3	998.2
25°	939.3	947.1	957.0	972.7	975.6
27.5°	910.8	917.7	930.5	947.1	951.1
30°	877.5	888.3	904.0	920.6	924.6
32.5°	845.1	855.9	874.5	892.2	897.1
35°	811.7	821.5	841.1	861.8	867.6
37.5°	773.4	786.2	807.8	828.4	834.3
40°	733.2	748.9	773.4	795.0	801.9
42.5°	694.9	711.6	736.1	759.7	767.5
45°	654.7	670.4	699.8	726.3	732.2
47.5°	613.4	631.1	662.5	689.0	698.8
50°	572.2	590.9	624.2	651.7	657.6
52.5°	531.0	550.6	586.0	615.4	618.3
55°	487.8	509.4	546.7	575.2	581.0
57.5°	448.5	467.2	507.4	536.9	543.8
60°	405.4	426.0	469.2	496.6	505.5
62.5°	364.1	385.7	430.9	458.4	466.2
65°	320.9	345.5	389.7	422.0	429.9
67.5°	283.7	307.2	354.3	385.7	393.6
70°	240.5	267.0	317.0	349.4	357.3
72.5°	203.2	230.7	280.7	312.1	323.9
75°	162.9	194.3	244.4	277.8	285.6
77.5°	123.7	160.0	211.0	236.5	236.5
80°	88.3	126.6	173.7	185.5	187.5
82.5°	57.9	95.2	128.6	127.6	127.6
85°	33.4	61.8	76.6	74.6	74.6
87.5°	12.8	25.5	27.5	27.5	26.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)