

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: P311378

Luminaire Tested: **24FCZ2-40HE-UNV-L82765-S-CP187-W2A-U-5500K**

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: P311378
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: 24FCZ2-40HE-UNV-L82765-S-CP187-W2A-U-5500K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (336) 5500K 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: 3807.0 lumens
Efficiency: N/A
Efficacy: 121.6 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

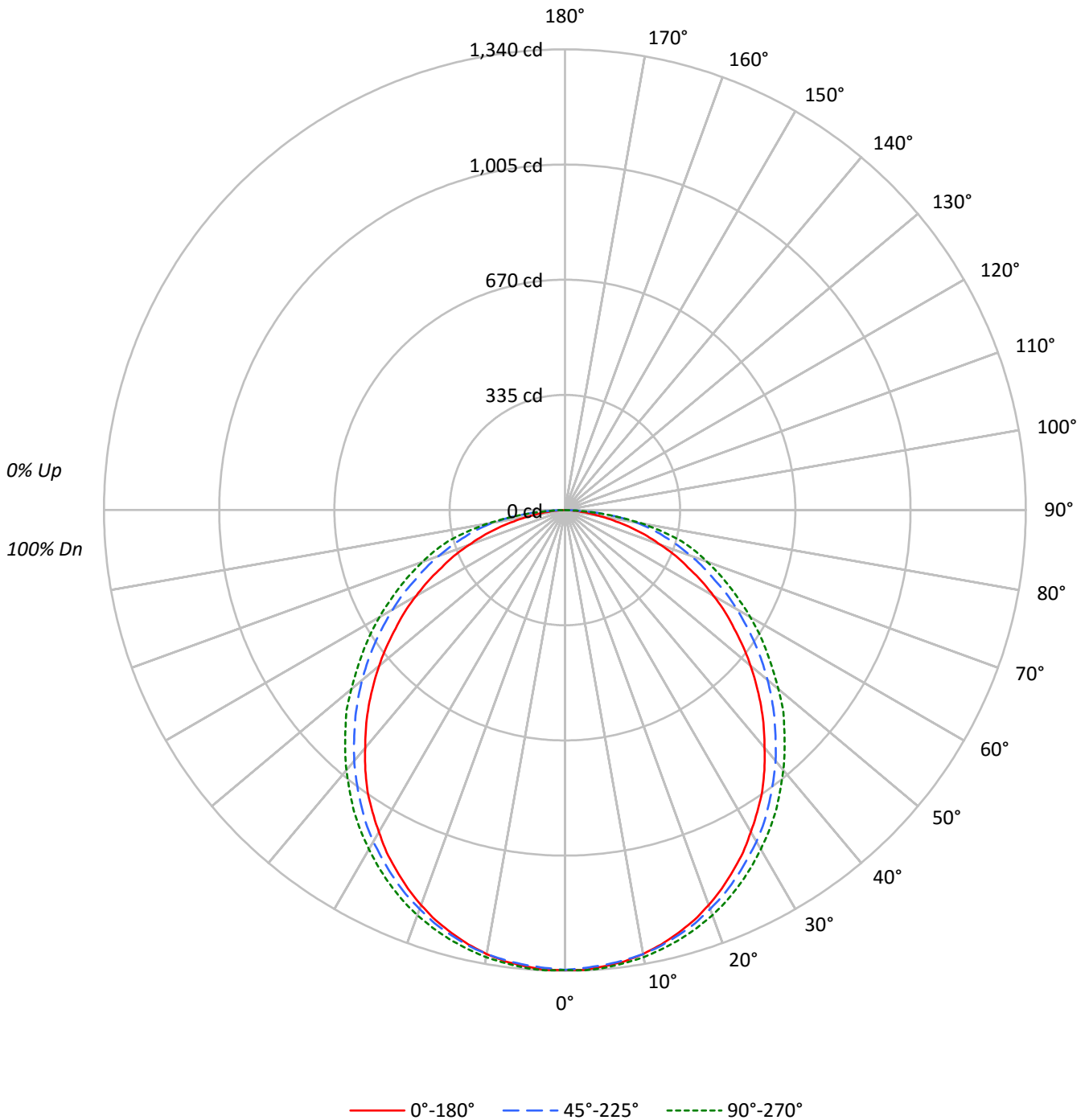
Input Watts (W): 31.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1799	1799	1799
5°	1798	1793	1805
10°	1791	1791	1804
15°	1774	1782	1801
20°	1750	1768	1796
25°	1718	1750	1784
30°	1680	1730	1770
35°	1643	1702	1756
40°	1587	1674	1735
45°	1535	1641	1717
50°	1476	1610	1696
55°	1410	1580	1679
60°	1344	1555	1676
65°	1259	1528	1686
70°	1166	1537	1732
75°	1043	1565	1829
80°	843	1658	1790
85°	634	1456	1419



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.6	3.3
10°-20°	361.8	9.5
20°-30°	543.8	14.3
30°-40°	647.8	17.0
40°-50°	663.0	17.4
50°-60°	596.9	15.7
60°-70°	468.8	12.3
70°-80°	304.2	8.0
80°-90°	94.1	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°	1032.2	27.1
0°-40°	1680.0	44.1
0°-60°	2939.9	77.2
0°-90°	3807.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3807.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1337	1337	1337	1337	1337	
5°	1331	1334	1328	1335	1336	127
15°	1273	1277	1279	1290	1293	359
25°	1157	1167	1179	1198	1202	533
35°	1000	1012	1036	1062	1069	624
45°	807	826	862	895	902	622
55°	601	628	674	709	716	539
65°	395	426	480	520	530	394
75°	201	239	301	342	352	212
85°	41	76	94	92	92	50
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1337.4	1337.4	1337.4	1337.4	1337.4
2.5°	1338.6	1338.6	1332.6	1338.6	1339.8
5°	1331.4	1333.8	1327.8	1335.0	1336.2
7.5°	1324.1	1324.1	1320.5	1327.8	1329.0
10°	1310.8	1312.0	1310.8	1319.3	1320.5
12.5°	1293.9	1296.3	1297.5	1306.0	1307.2
15°	1273.3	1277.0	1279.4	1290.3	1292.7
17.5°	1250.4	1254.0	1260.0	1272.1	1274.5
20°	1222.5	1227.4	1234.6	1250.4	1254.0
22.5°	1192.3	1197.2	1209.2	1223.8	1229.8
25°	1157.2	1166.9	1179.0	1198.4	1202.0
27.5°	1122.2	1130.6	1146.4	1166.9	1171.8
30°	1081.1	1094.4	1113.7	1134.3	1139.1
32.5°	1041.2	1054.5	1077.4	1099.2	1105.2
35°	1000.0	1012.1	1036.3	1061.7	1069.0
37.5°	952.9	968.6	995.2	1020.6	1027.9
40°	903.3	922.7	952.9	979.5	988.0
42.5°	856.1	876.7	906.9	936.0	945.6
45°	806.6	825.9	862.2	894.8	902.1
47.5°	755.8	777.5	816.2	848.9	861.0
50°	705.0	728.0	769.1	802.9	810.2
52.5°	654.2	678.4	721.9	758.2	761.8
55°	601.0	627.6	673.5	708.6	715.9
57.5°	552.6	575.6	625.2	661.5	669.9
60°	499.4	524.8	578.0	611.9	622.8
62.5°	448.6	475.2	530.9	564.7	574.4
65°	395.4	425.7	480.1	520.0	529.6
67.5°	349.5	378.5	436.5	475.2	484.9
70°	296.3	328.9	390.6	430.5	440.2
72.5°	250.3	284.2	345.8	384.5	399.1
75°	200.7	239.4	301.1	342.2	351.9
77.5°	152.4	197.1	260.0	291.4	291.4
80°	108.8	156.0	214.0	228.5	231.0
82.5°	71.3	117.3	158.4	157.2	157.2
85°	41.1	76.2	94.3	91.9	91.9
87.5°	15.7	31.4	33.9	33.9	32.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)