

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: P311420

Luminaire Tested: **24FCZ2-40-UNV-L82765-S-CP187-W2A-U-4000K**

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: P311420
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: 24FCZ2-40-UNV-L82765-S-CP187-W2A-U-4000K
Description: 2'X4' TROFFER LED MODULE, SMOOTH LENS, 0.187" POLYCARB SHEET
Light Source: (168) 4000K 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: 3632.0 lumens
Efficiency: N/A
Efficacy: 109.7 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

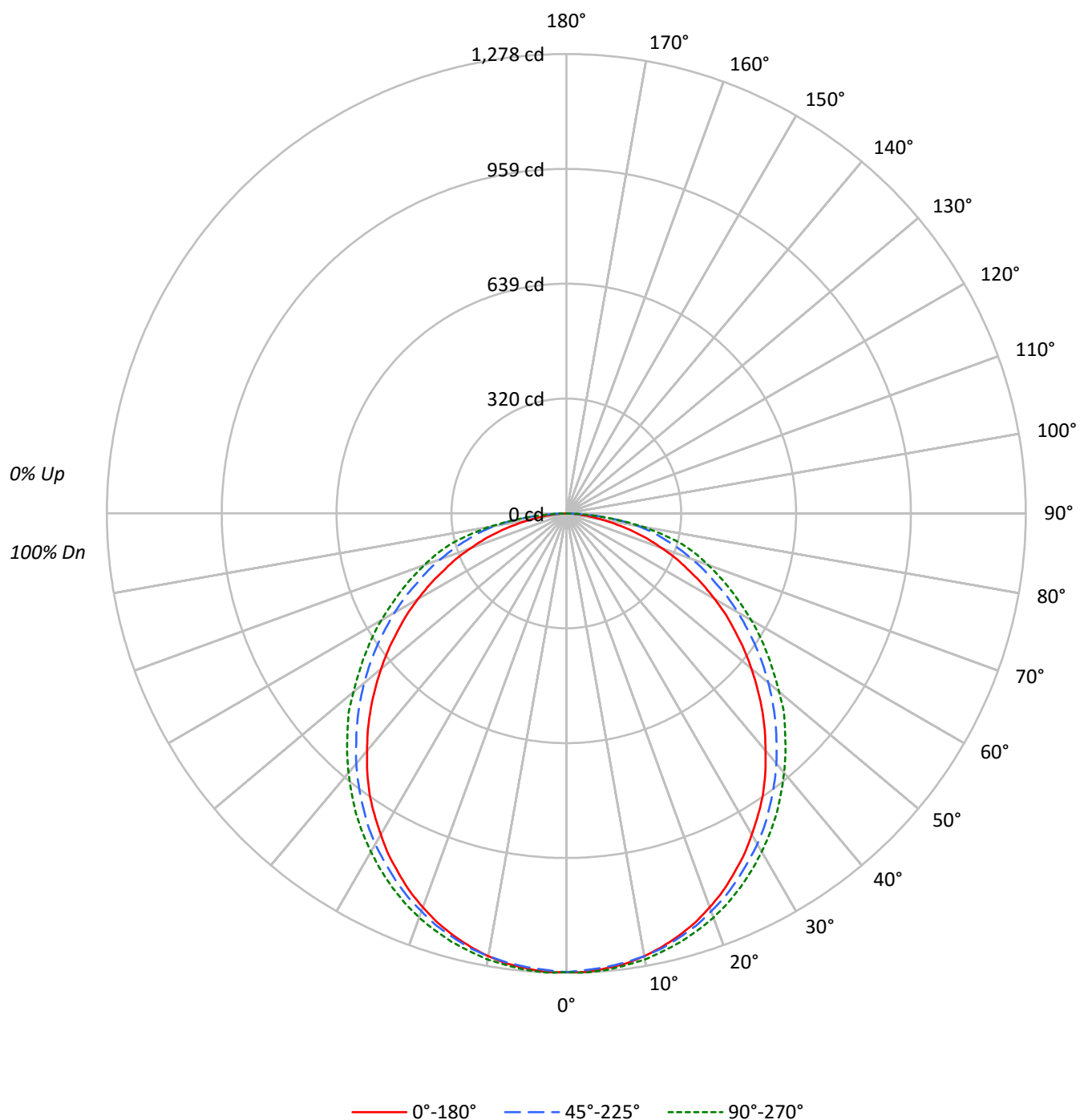
Input Watts (W): 33.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1717	1717	1717
5°	1716	1711	1722
10°	1709	1709	1721
15°	1692	1700	1718
20°	1670	1687	1713
25°	1639	1670	1702
30°	1602	1651	1688
35°	1567	1624	1675
40°	1514	1597	1655
45°	1464	1565	1638
50°	1408	1536	1618
55°	1345	1507	1602
60°	1282	1484	1599
65°	1201	1458	1609
70°	1112	1466	1652
75°	996	1494	1745
80°	804	1582	1707
85°	605	1389	1354



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.8	3.3
10°-20°	345.2	9.5
20°-30°	518.8	14.3
30°-40°	618.0	17.0
40°-50°	632.5	17.4
50°-60°	569.4	15.7
60°-70°	447.2	12.3
70°-80°	290.2	8.0
80°-90°	89.8	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°	984.8	27.1
0°-40°	1602.8	44.1
0°-60°	2804.8	77.2
0°-90°	3632.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3632.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1276	1276	1276	1276	1276	
5°	1270	1272	1267	1274	1275	121
15°	1215	1218	1221	1231	1233	343
25°	1104	1113	1125	1143	1147	509
35°	954	966	989	1013	1020	595
45°	770	788	823	854	861	593
55°	573	599	643	676	683	514
65°	377	406	458	496	505	376
75°	192	228	287	326	336	203
85°	39	73	90	88	88	47
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1275.9	1275.9	1275.9	1275.9	1275.9
2.5°	1277.1	1277.1	1271.3	1277.1	1278.3
5°	1270.2	1272.5	1266.7	1273.6	1274.8
7.5°	1263.3	1263.3	1259.8	1266.7	1267.9
10°	1250.6	1251.7	1250.6	1258.6	1259.8
12.5°	1234.4	1236.7	1237.9	1246.0	1247.1
15°	1214.8	1218.3	1220.6	1231.0	1233.3
17.5°	1192.9	1196.3	1202.1	1213.6	1216.0
20°	1166.3	1171.0	1177.9	1192.9	1196.3
22.5°	1137.5	1142.1	1153.7	1167.5	1173.3
25°	1104.1	1113.3	1124.8	1143.3	1146.7
27.5°	1070.6	1078.7	1093.7	1113.3	1117.9
30°	1031.4	1044.1	1062.5	1082.1	1086.7
32.5°	993.3	1006.0	1027.9	1048.7	1054.4
35°	954.1	965.6	988.7	1012.9	1019.8
37.5°	909.1	924.1	949.5	973.7	980.6
40°	861.8	880.2	909.1	934.5	942.5
42.5°	816.8	836.4	865.2	892.9	902.2
45°	769.5	787.9	822.6	853.7	860.6
47.5°	721.0	741.8	778.7	809.9	821.4
50°	672.6	694.5	733.7	766.0	773.0
52.5°	624.1	647.2	688.7	723.3	726.8
55°	573.4	598.7	642.6	676.0	683.0
57.5°	527.2	549.1	596.4	631.1	639.1
60°	476.5	500.7	551.4	583.8	594.1
62.5°	428.0	453.4	506.5	538.8	548.0
65°	377.2	406.1	458.0	496.1	505.3
67.5°	333.4	361.1	416.5	453.4	462.6
70°	282.6	313.8	372.6	410.7	419.9
72.5°	238.8	271.1	329.9	366.9	380.7
75°	191.5	228.4	287.3	326.5	335.7
77.5°	145.4	188.0	248.0	278.0	278.0
80°	103.8	148.8	204.2	218.0	220.3
82.5°	68.1	111.9	151.1	150.0	150.0
85°	39.2	72.7	90.0	87.7	87.7
87.5°	15.0	30.0	32.3	32.3	31.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)