

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: P311374

Luminaire Tested: **24FCZ2-40HE-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: P311374
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-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: 3576.0 lumens
Efficiency: N/A
Efficacy: 117.2 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

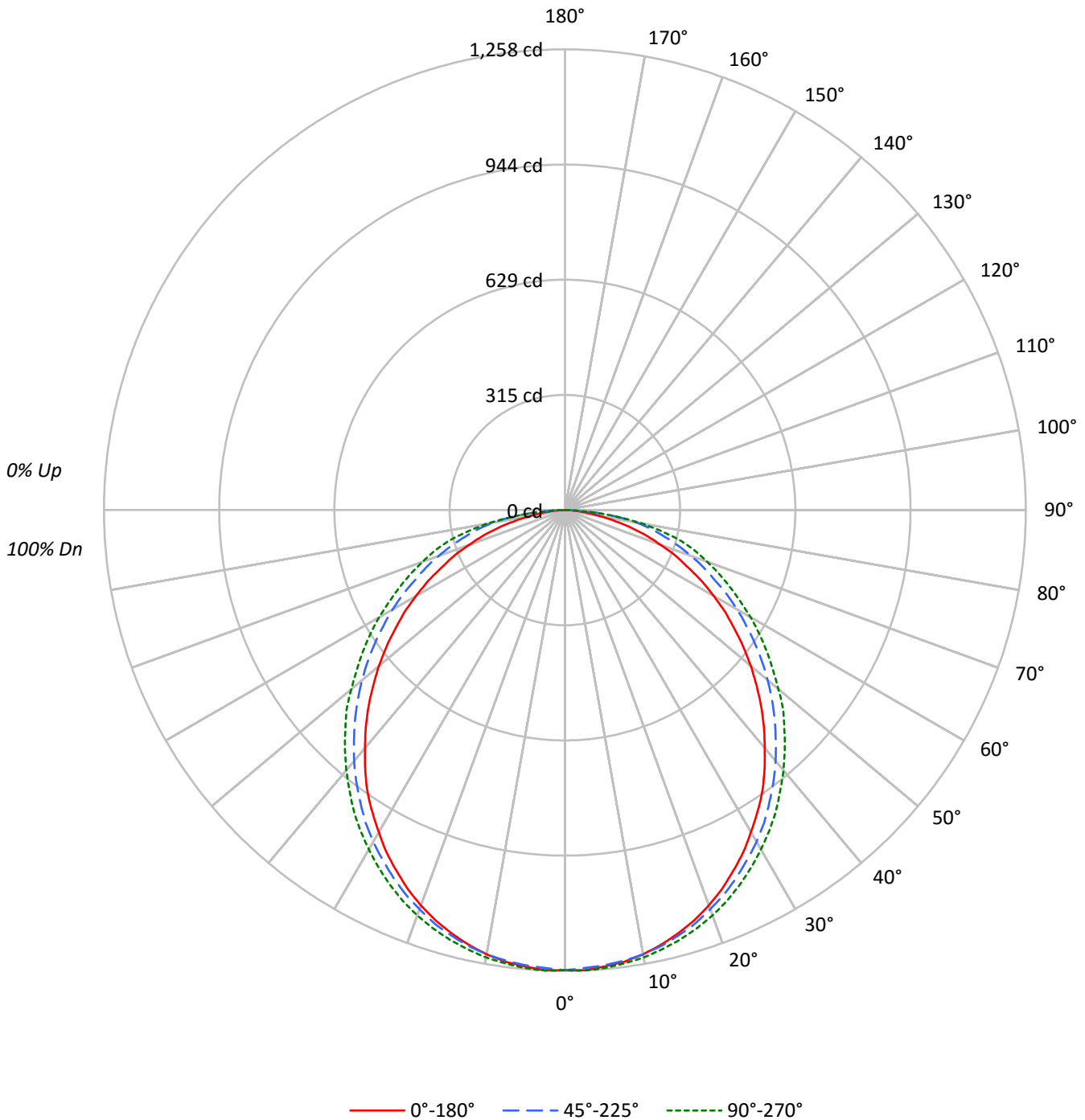
Input Watts (W): 30.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	1690	1690	1690
5°	1689	1685	1695
10°	1682	1682	1695
15°	1666	1674	1691
20°	1644	1661	1687
25°	1614	1644	1676
30°	1578	1625	1662
35°	1543	1599	1649
40°	1490	1572	1630
45°	1442	1541	1612
50°	1386	1512	1593
55°	1324	1484	1577
60°	1262	1461	1574
65°	1182	1436	1584
70°	1095	1443	1627
75°	980	1470	1718
80°	792	1557	1681
85°	596	1368	1332



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.9	3.3
10°-20°	339.8	9.5
20°-30°	510.8	14.3
30°-40°	608.5	17.0
40°-50°	622.8	17.4
50°-60°	560.7	15.7
60°-70°	440.3	12.3
70°-80°	285.8	8.0
80°-90°	88.4	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°	969.6	27.1
0°-40°	1578.1	44.1
0°-60°	2761.5	77.2
0°-90°	3576.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3576.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1256	1256	1256	1256	1256	
5°	1251	1253	1247	1254	1255	119
15°	1196	1200	1202	1212	1214	337
25°	1087	1096	1108	1126	1129	501
35°	939	951	973	997	1004	586
45°	758	776	810	840	847	584
55°	564	590	633	666	672	506
65°	371	400	451	488	498	370
75°	189	225	283	322	330	200
85°	39	72	89	86	86	47
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1256.3	1256.3	1256.3	1256.3	1256.3
2.5°	1257.4	1257.4	1251.7	1257.4	1258.5
5°	1250.6	1252.9	1247.2	1254.0	1255.1
7.5°	1243.8	1243.8	1240.4	1247.2	1248.3
10°	1231.3	1232.4	1231.3	1239.2	1240.4
12.5°	1215.4	1217.7	1218.8	1226.7	1227.9
15°	1196.1	1199.5	1201.8	1212.0	1214.2
17.5°	1174.5	1177.9	1183.6	1194.9	1197.2
20°	1148.4	1152.9	1159.7	1174.5	1177.9
22.5°	1120.0	1124.5	1135.9	1149.5	1155.2
25°	1087.0	1096.1	1107.5	1125.6	1129.1
27.5°	1054.1	1062.0	1076.8	1096.1	1100.7
30°	1015.5	1028.0	1046.1	1065.4	1070.0
32.5°	978.0	990.5	1012.1	1032.5	1038.2
35°	939.4	950.7	973.4	997.3	1004.1
37.5°	895.1	909.8	934.8	958.7	965.5
40°	848.5	866.7	895.1	920.1	928.0
42.5°	804.2	823.5	851.9	879.2	888.3
45°	757.6	775.8	809.9	840.5	847.4
47.5°	709.9	730.4	766.7	797.4	808.7
50°	662.2	683.8	722.4	754.2	761.0
52.5°	614.5	637.2	678.1	712.2	715.6
55°	564.5	589.5	632.7	665.6	672.4
57.5°	519.1	540.7	587.2	621.3	629.3
60°	469.1	493.0	542.9	574.8	585.0
62.5°	421.4	446.4	498.6	530.5	539.5
65°	371.4	399.8	450.9	488.4	497.5
67.5°	328.3	355.5	410.0	446.4	455.5
70°	278.3	309.0	366.9	404.4	413.5
72.5°	235.1	266.9	324.9	361.2	374.8
75°	188.6	224.9	282.8	321.5	330.5
77.5°	143.1	185.1	244.2	273.7	273.7
80°	102.2	146.5	201.0	214.7	217.0
82.5°	67.0	110.2	148.8	147.7	147.7
85°	38.6	71.6	88.6	86.3	86.3
87.5°	14.8	29.5	31.8	31.8	30.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)