

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: P313383

Luminaire Tested: **24FCZ2-70HE-UNV-L83050-HRP-CP187-W2A-U-4500K**

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: P313383
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-20)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 24FCZ2-70HE-UNV-L83050-HRP-CP187-W2A-U-4500K
Description: 2'X4' TROFFER LED MODULE, HIGH EFFICIENCY RND PERF. LENS, 0.187" POLYCARB SHEET
Light Source: (336) 4500K 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: 4967.0 lumens
Efficiency: N/A
Efficacy: 82.1 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.3 / 1.4
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')
CIE Type: Direct

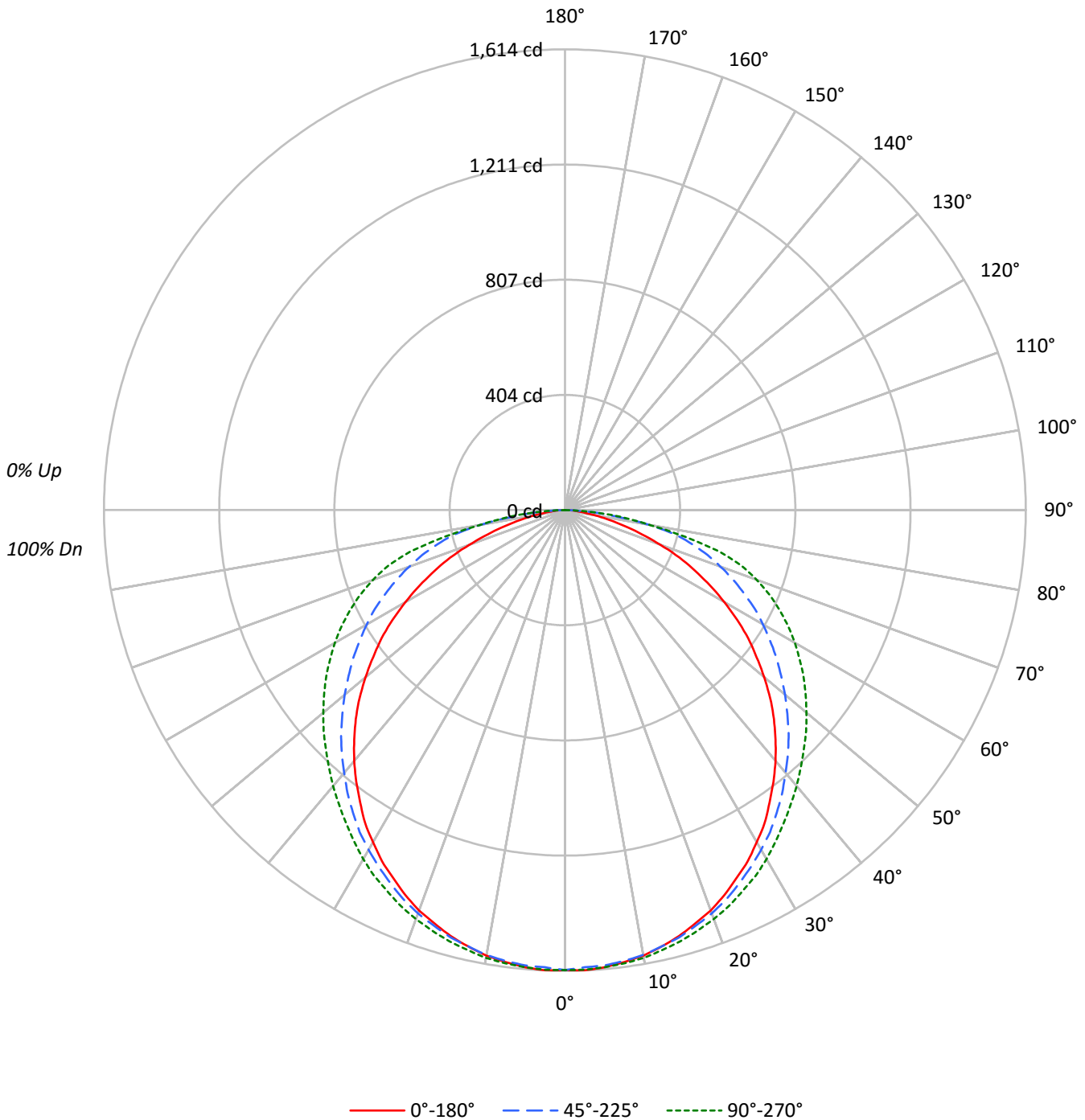
Input Watts (W): 60.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				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	98	94	105	101	96	93	96	93	90	92	90	87	89	86	84	82
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	68	63	58	56
4	81	68	59	52	79	67	59	52	65	57	51	62	56	50	60	54	50	48
5	74	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	36
7	63	50	41	34	62	49	40	34	47	39	34	46	39	34	44	38	33	31
8	59	45	36	30	57	44	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	24	35	29	24	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2168	2168	2168
5°	2171	2162	2171
10°	2165	2162	2176
15°	2152	2158	2178
20°	2138	2153	2182
25°	2112	2142	2186
30°	2087	2135	2194
35°	2053	2124	2196
40°	2016	2111	2217
45°	1970	2109	2251
50°	1906	2107	2311
55°	1839	2122	2395
60°	1735	2154	2501
65°	1602	2204	2642
70°	1399	2282	2814
75°	1135	2400	2908
80°	838	2352	2352
85°	642	1734	1958



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.7	3.1
10°-20°	438.4	8.8
20°-30°	667.4	13.4
30°-40°	810.4	16.3
40°-50°	856.2	17.2
50°-60°	807.9	16.3
60°-70°	671.7	13.5
70°-80°	441.9	8.9
80°-90°	120.5	2.4
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°	1258.5	25.3
0°-40°	2068.8	41.7
0°-60°	3732.9	75.2
0°-90°	4967.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4967.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1612	1612	1612	1612	1612	
5°	1607	1607	1601	1607	1607	153
15°	1545	1547	1549	1564	1564	436
25°	1422	1431	1443	1468	1472	656
35°	1250	1264	1293	1327	1337	782
45°	1036	1056	1108	1162	1183	797
55°	784	817	904	990	1021	698
65°	503	561	692	794	830	497
75°	218	318	462	547	559	235
85°	42	92	112	125	127	51
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1611.5	1611.5	1611.5	1611.5	1611.5
2.5°	1613.6	1611.5	1603.2	1611.5	1611.5
5°	1607.4	1607.4	1601.1	1607.4	1607.4
7.5°	1597.0	1597.0	1592.8	1601.1	1601.1
10°	1584.5	1584.5	1582.4	1592.8	1592.8
12.5°	1565.8	1567.9	1565.8	1578.3	1578.3
15°	1545.0	1547.1	1549.2	1563.7	1563.7
17.5°	1518.0	1522.1	1526.3	1542.9	1545.0
20°	1493.0	1495.1	1503.4	1522.1	1524.2
22.5°	1459.7	1466.0	1476.4	1495.1	1501.3
25°	1422.3	1430.6	1443.1	1468.1	1472.2
27.5°	1387.0	1393.2	1409.8	1436.9	1445.2
30°	1343.3	1353.7	1374.5	1401.5	1411.9
32.5°	1301.7	1312.1	1337.1	1366.2	1374.5
35°	1249.7	1264.3	1293.4	1326.7	1337.1
37.5°	1199.8	1214.4	1249.7	1287.2	1299.6
40°	1147.8	1164.5	1201.9	1245.6	1262.2
42.5°	1091.7	1114.6	1156.2	1204.0	1222.7
45°	1035.5	1056.3	1108.3	1162.4	1183.2
47.5°	975.2	1000.2	1056.3	1120.8	1145.8
50°	910.8	942.0	1006.4	1077.1	1104.2
52.5°	846.3	881.7	954.5	1033.5	1062.6
55°	783.9	817.2	904.5	989.8	1021.0
57.5°	715.3	756.9	852.6	944.1	975.2
60°	644.6	690.4	800.6	896.2	929.5
62.5°	573.9	625.9	750.7	846.3	881.7
65°	503.2	561.4	692.4	794.3	829.7
67.5°	434.6	499.1	638.4	740.3	775.6
70°	355.6	436.7	580.2	680.0	715.3
72.5°	282.8	376.4	524.0	617.6	648.8
75°	218.3	318.2	461.6	546.9	559.4
77.5°	160.1	259.9	397.2	426.3	428.4
80°	108.1	207.9	303.6	299.4	303.6
82.5°	70.7	156.0	191.3	214.2	216.3
85°	41.6	91.5	112.3	124.8	126.8
87.5°	20.8	31.2	39.5	41.6	45.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)