

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: METALUX

Report Number: P474496

Luminaire Tested: **24CZ2-110VHE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

Test Information

Test Method: LM-79-08
Report Number: P474496
Test Lab: INNOVATION CENTER(G3)
Issue Date: 01/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 24CZ2-110VHE-HRP-UNV-L840-CD1-U
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP
INSERT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9112.8 lumens
Efficiency: N/A
Efficacy: 118.3 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

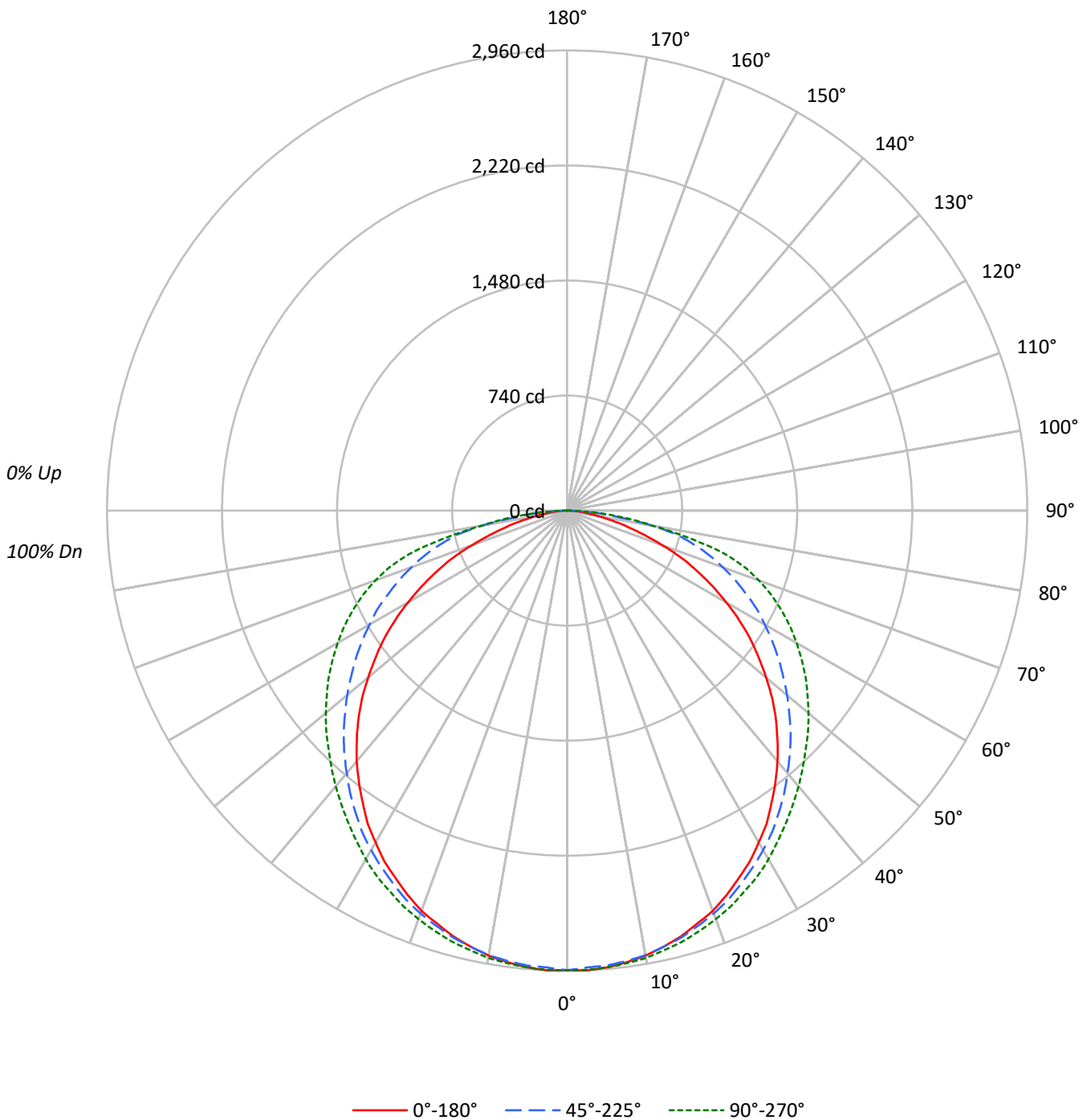
Input Watts (W): 77
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	3978	3978	3978
5°	3983	3967	3983
10°	3972	3967	3992
15°	3948	3959	3996
20°	3922	3949	4004
25°	3874	3931	4010
30°	3829	3918	4025
35°	3766	3897	4029
40°	3699	3873	4067
45°	3615	3869	4131
50°	3498	3865	4241
55°	3374	3893	4394
60°	3182	3952	4589
65°	2940	4045	4847
70°	2566	4187	5163
75°	2083	4403	5335
80°	1538	4317	4317
85°	1179	3180	3591



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	280.1	3.1
10°-20°	804.3	8.8
20°-30°	1224.5	13.4
30°-40°	1486.8	16.3
40°-50°	1570.8	17.2
50°-60°	1482.2	16.3
60°-70°	1232.4	13.5
70°-80°	810.8	8.9
80°-90°	221.0	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°	2308.8	25.3
0°-40°	3795.6	41.7
0°-60°	6848.6	75.2
0°-90°	9112.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9112.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2957	2957	2957	2957	2957	
5°	2949	2949	2937	2949	2949	280
15°	2834	2838	2842	2869	2869	799
25°	2609	2625	2648	2694	2701	1204
35°	2293	2320	2373	2434	2453	1435
45°	1900	1938	2033	2132	2171	1463
55°	1438	1499	1659	1816	1873	1281
65°	923	1030	1271	1457	1522	913
75°	401	584	847	1003	1026	432
85°	76	168	206	229	233	93
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2956.6	2956.6	2956.6	2956.6	2956.6
2.5°	2960.5	2956.6	2941.4	2956.6	2956.6
5°	2949.2	2949.2	2937.4	2949.2	2949.2
7.5°	2930.0	2930.0	2922.2	2937.4	2937.4
10°	2906.9	2906.9	2903.4	2922.2	2922.2
12.5°	2872.8	2876.4	2872.8	2895.5	2895.5
15°	2834.5	2838.4	2842.3	2868.9	2868.9
17.5°	2785.1	2792.6	2800.4	2830.5	2834.5
20°	2739.3	2742.8	2758.1	2792.6	2796.5
22.5°	2678.2	2689.6	2708.8	2742.8	2754.6
25°	2609.3	2624.6	2647.7	2693.5	2700.9
27.5°	2544.7	2556.1	2586.6	2636.3	2651.6
30°	2464.4	2483.6	2521.6	2571.3	2590.5
32.5°	2388.1	2407.3	2453.1	2506.3	2521.6
35°	2292.9	2319.6	2372.8	2433.9	2453.1
37.5°	2201.3	2227.9	2292.9	2361.5	2384.6
40°	2105.8	2136.3	2205.2	2285.1	2315.7
42.5°	2002.8	2044.7	2121.1	2208.8	2243.2
45°	1899.8	1938.2	2033.3	2132.4	2170.8
47.5°	1789.4	1835.2	1938.2	2056.4	2102.3
50°	1671.2	1728.3	1846.6	1976.2	2025.9
52.5°	1552.9	1617.5	1751.0	1895.9	1949.6
55°	1438.2	1499.3	1659.4	1816.0	1873.2
57.5°	1312.5	1388.8	1564.3	1731.8	1789.4
60°	1182.5	1266.7	1468.7	1644.1	1705.2
62.5°	1052.9	1148.4	1377.1	1552.9	1617.5
65°	923.3	1030.2	1270.6	1457.4	1522.4
67.5°	797.2	915.5	1171.1	1358.3	1422.9
70°	652.3	801.1	1064.2	1247.5	1312.5
72.5°	518.8	690.7	961.3	1133.2	1190.3
75°	400.6	583.8	846.9	1003.2	1026.3
77.5°	293.7	476.9	728.7	781.9	785.9
80°	198.5	381.4	557.2	549.4	557.2
82.5°	129.6	286.2	350.8	393.1	396.6
85°	76.4	168.0	206.0	229.1	232.6
87.5°	38.0	57.2	72.4	76.4	83.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)