

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: P474396

Luminaire Tested: **24CZ2-110VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474396  
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-L830-CD1-U  
Description: 2'X4' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ HRP  
INSERT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8629.9 lumens  
Efficiency: N/A  
Efficacy: 112.1 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

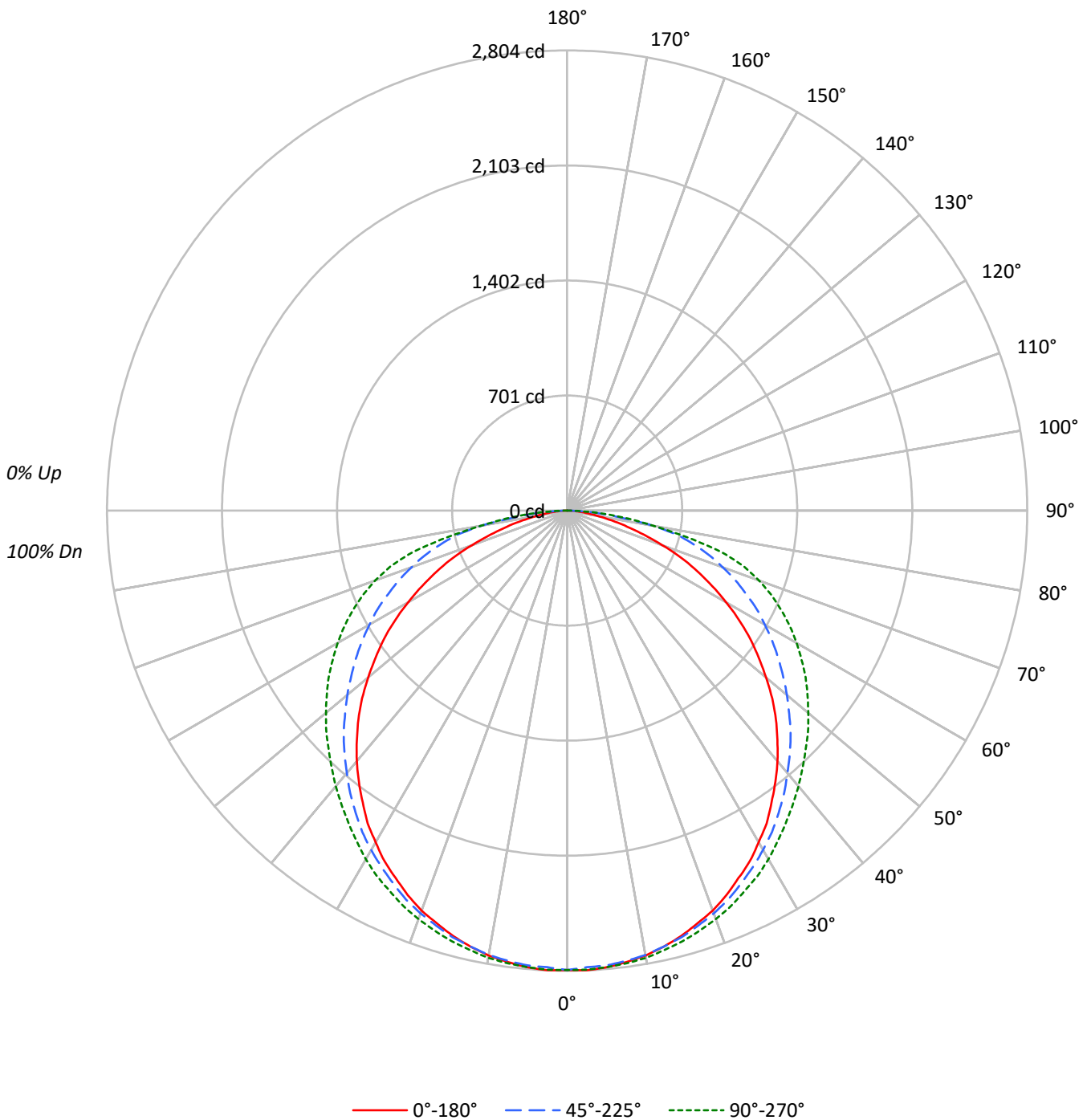
Input Watts (W): 77  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	3767	3767	3767
5°	3772	3757	3772
10°	3761	3756	3781
15°	3739	3749	3785
20°	3714	3740	3792
25°	3668	3722	3797
30°	3626	3710	3811
35°	3567	3691	3816
40°	3503	3668	3852
45°	3423	3664	3912
50°	3313	3660	4016
55°	3195	3686	4161
60°	3013	3743	4346
65°	2784	3831	4590
70°	2430	3965	4890
75°	1972	4170	5052
80°	1457	4089	4089
85°	1116	3010	3401



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	265.2	3.1
10°-20°	761.7	8.8
20°-30°	1159.6	13.4
30°-40°	1408.0	16.3
40°-50°	1487.6	17.2
50°-60°	1403.6	16.3
60°-70°	1167.1	13.5
70°-80°	767.8	8.9
80°-90°	209.3	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°	2186.5	25.3
0°-40°	3594.5	41.7
0°-60°	6485.7	75.2
0°-90°	8629.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	8629.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2800	2800	2800	2800	2800	
5°	2793	2793	2782	2793	2793	265
15°	2684	2688	2692	2717	2717	757
25°	2471	2486	2507	2551	2558	1140
35°	2171	2197	2247	2305	2323	1359
45°	1799	1836	1926	2019	2056	1386
55°	1362	1420	1572	1720	1774	1213
65°	874	976	1203	1380	1442	864
75°	379	553	802	950	972	409
85°	72	159	195	217	220	88
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2799.9	2799.9	2799.9	2799.9	2799.9
2.5°	2803.7	2799.9	2785.5	2799.9	2799.9
5°	2792.9	2792.9	2781.8	2792.9	2792.9
7.5°	2774.7	2774.7	2767.3	2781.8	2781.8
10°	2752.9	2752.9	2749.5	2767.3	2767.3
12.5°	2720.6	2723.9	2720.6	2742.1	2742.1
15°	2684.3	2688.0	2691.7	2716.9	2716.9
17.5°	2637.5	2644.6	2652.0	2680.5	2684.3
20°	2594.2	2597.5	2612.0	2644.6	2648.3
22.5°	2536.3	2547.1	2565.2	2597.5	2608.6
25°	2471.0	2485.5	2507.4	2550.8	2557.8
27.5°	2409.9	2420.6	2449.5	2496.6	2511.1
30°	2333.8	2352.0	2388.0	2435.1	2453.2
32.5°	2261.5	2279.7	2323.1	2373.5	2388.0
35°	2171.4	2196.6	2247.1	2304.9	2323.1
37.5°	2084.7	2109.9	2171.4	2236.3	2258.2
40°	1994.2	2023.1	2088.4	2164.0	2192.9
42.5°	1896.7	1936.3	2008.7	2091.7	2124.3
45°	1799.1	1835.5	1925.6	2019.4	2055.7
47.5°	1694.6	1738.0	1835.5	1947.5	1990.9
50°	1582.6	1636.7	1748.7	1871.5	1918.5
52.5°	1470.6	1531.8	1658.2	1795.4	1846.2
55°	1362.0	1419.8	1571.5	1719.8	1773.9
57.5°	1242.9	1315.2	1481.4	1640.1	1694.6
60°	1119.8	1199.6	1390.9	1557.0	1614.9
62.5°	997.1	1087.6	1304.1	1470.6	1531.8
65°	874.4	975.6	1203.3	1380.1	1441.7
67.5°	755.0	866.9	1109.1	1286.3	1347.5
70°	617.8	758.7	1007.8	1181.4	1242.9
72.5°	491.3	654.1	910.3	1073.1	1127.2
75°	379.3	552.9	802.1	950.0	971.9
77.5°	278.1	451.6	690.1	740.5	744.2
80°	188.0	361.2	527.7	520.2	527.7
82.5°	122.7	271.1	332.2	372.3	375.6
85°	72.3	159.1	195.0	216.9	220.3
87.5°	36.0	54.1	68.6	72.3	79.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)