

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: P390935

Luminaire Tested: **24CZ2-110VHE-HRP-UNV-L930-CD2-U**

Issue Date: 2/28/2020

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: P390935  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1808-918-19)  
Test Lab: INNOVATIONS CENTER(G3)  
Issue Date: 2/28/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-110VHE-HRP-UNV-L930-CD2-U  
Description: 2x4 CRUZE LED TROFFER WITH 3000K, 90 LEDS, AND HRP LENS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.    Condition    Description

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7772.5 lumens  
Efficiency: N/A  
Efficacy: 100.4 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.3 / 1.41  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

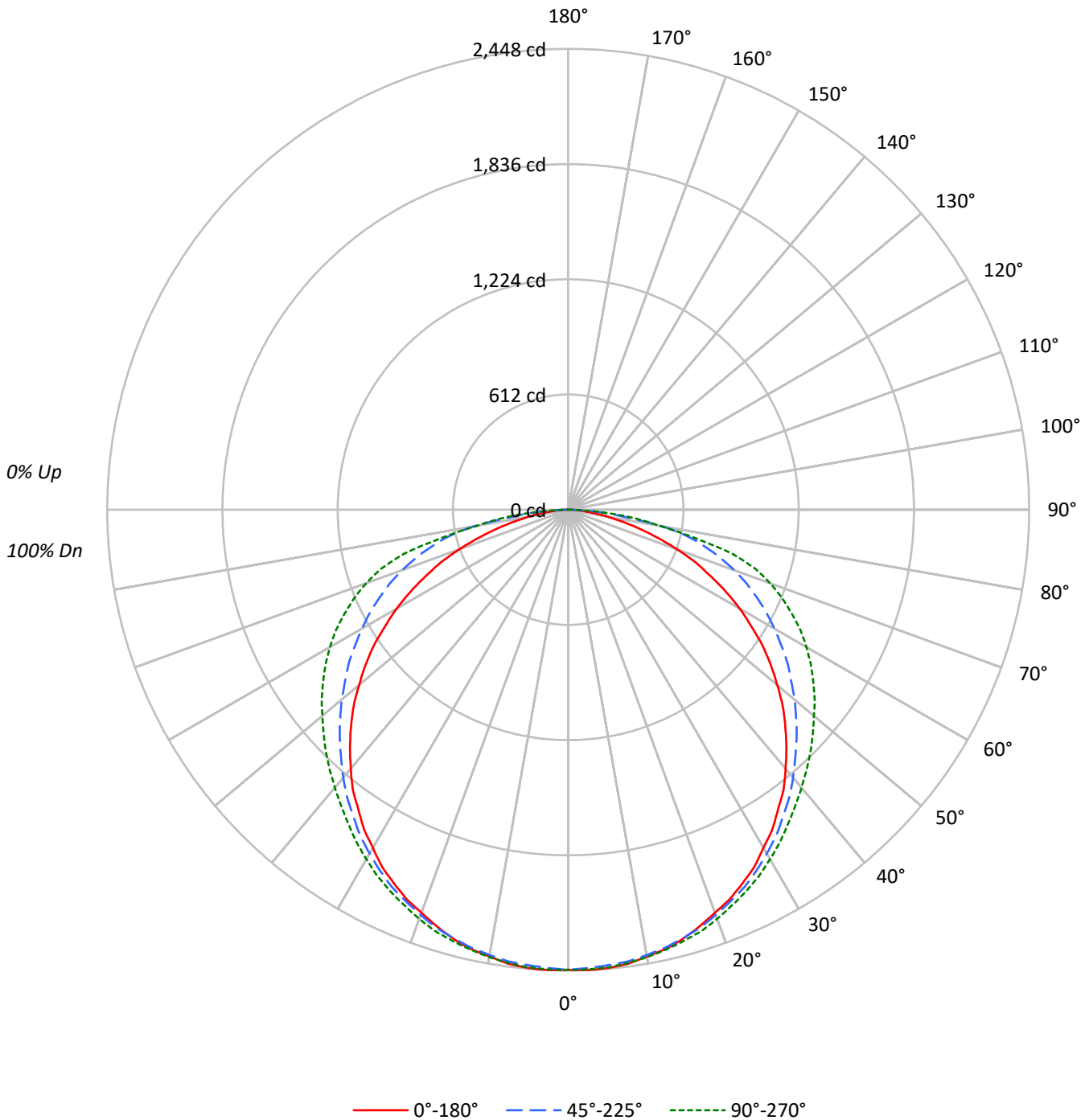
Input Watts (W): 77.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	100	96	92	96	93	89		92	89	87		88	86	84	82
2	97	89	81	75	95	87	80	74	83	77	72		80	75	71		77	73	69	67
3	88	77	68	62	86	76	67	61	72	66	60		70	64	59		67	62	58	56
4	81	68	59	52	78	67	58	51	64	57	51		62	55	50		59	54	49	47
5	74	60	51	44	72	59	51	44	57	49	43		55	48	43		53	47	42	40
6	68	54	45	38	66	53	45	38	51	44	38		50	43	37		48	42	37	35
7	63	49	40	34	61	48	40	34	47	39	33		45	38	33		44	38	33	31
8	59	45	36	30	57	44	36	30	43	35	30		41	34	29		40	34	29	27
9	55	41	33	27	53	40	32	27	39	32	27		38	31	26		37	31	26	24
10	51	38	30	24	50	37	29	24	36	29	24		35	29	24		34	28	24	22

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3289	3289	3289
5°	3301	3280	3296
10°	3292	3281	3297
15°	3287	3281	3303
20°	3262	3279	3312
25°	3251	3285	3320
30°	3222	3276	3330
35°	3191	3268	3344
40°	3155	3264	3386
45°	3103	3264	3463
50°	3034	3284	3567
55°	2957	3337	3726
60°	2832	3403	3932
65°	2651	3523	4173
70°	2412	3685	4489
75°	2044	3888	4690
80°	1613	3913	3794
85°	1190	2976	3333



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	231.9	3.0
10°-20°	667.3	8.6
20°-30°	1020.4	13.1
30°-40°	1247.4	16.0
40°-50°	1329.5	17.1
50°-60°	1271.2	16.4
60°-70°	1076.9	13.9
70°-80°	723.7	9.3
80°-90°	204.2	2.6
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°	1919.6	24.7
0°-40°	3167.0	40.7
0°-60°	5767.7	74.2
0°-90°	7772.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7772.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2444	2444	2444	2444	2444	
5°	2444	2440	2429	2440	2440	232
15°	2359	2359	2356	2375	2371	665
25°	2190	2198	2213	2232	2236	1009
35°	1943	1958	1989	2028	2036	1217
45°	1631	1658	1716	1789	1820	1258
55°	1261	1307	1423	1534	1588	1123
65°	833	918	1106	1253	1311	827
75°	393	536	748	875	902	421
85°	77	158	193	208	216	95
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2444.2	2444.2	2444.2	2444.2	2444.2
2.5°	2448.1	2448.1	2436.5	2444.2	2444.2
5°	2444.2	2440.4	2428.8	2440.4	2440.4
7.5°	2432.7	2428.8	2421.1	2432.7	2428.8
10°	2409.5	2409.5	2401.8	2413.4	2413.4
12.5°	2390.3	2386.4	2382.5	2398.0	2394.1
15°	2359.4	2359.4	2355.6	2374.8	2371.0
17.5°	2320.9	2324.7	2328.6	2344.0	2347.8
20°	2278.5	2286.2	2290.0	2313.2	2313.2
22.5°	2239.9	2243.8	2251.5	2274.6	2274.6
25°	2189.8	2197.5	2212.9	2232.2	2236.0
27.5°	2139.7	2143.5	2162.8	2189.8	2193.6
30°	2074.1	2085.7	2108.8	2139.7	2143.5
32.5°	2016.3	2027.9	2054.8	2085.7	2093.4
35°	1943.0	1958.5	1989.3	2027.9	2035.6
37.5°	1877.5	1889.1	1927.6	1970.0	1981.6
40°	1796.5	1819.7	1858.2	1908.3	1927.6
42.5°	1715.6	1738.7	1785.0	1850.5	1873.7
45°	1630.8	1657.8	1715.6	1788.8	1819.7
47.5°	1546.0	1576.8	1642.3	1727.2	1761.8
50°	1449.6	1488.1	1569.1	1665.5	1704.0
52.5°	1357.0	1403.3	1492.0	1599.9	1650.0
55°	1260.7	1306.9	1422.6	1534.4	1588.4
57.5°	1152.7	1214.4	1341.6	1468.9	1526.7
60°	1052.5	1110.3	1264.5	1403.3	1461.1
62.5°	944.5	1021.6	1187.4	1333.9	1391.7
65°	832.7	917.5	1106.5	1253.0	1310.8
67.5°	732.5	825.0	1025.5	1172.0	1229.8
70°	613.0	728.6	936.8	1083.3	1141.2
72.5°	501.2	628.4	844.3	986.9	1040.9
75°	393.2	535.9	747.9	875.1	902.1
77.5°	293.0	443.4	647.7	701.7	682.4
80°	208.2	354.7	505.0	478.1	489.6
82.5°	134.9	269.9	312.3	354.7	366.2
85°	77.1	158.1	192.8	208.2	215.9
87.5°	34.7	57.8	77.1	77.1	73.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)