

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: P474398

Luminaire Tested: **24CZ2-120VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474398  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-120VHE-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: 9364.0 lumens  
Efficiency: N/A  
Efficacy: 111.2 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

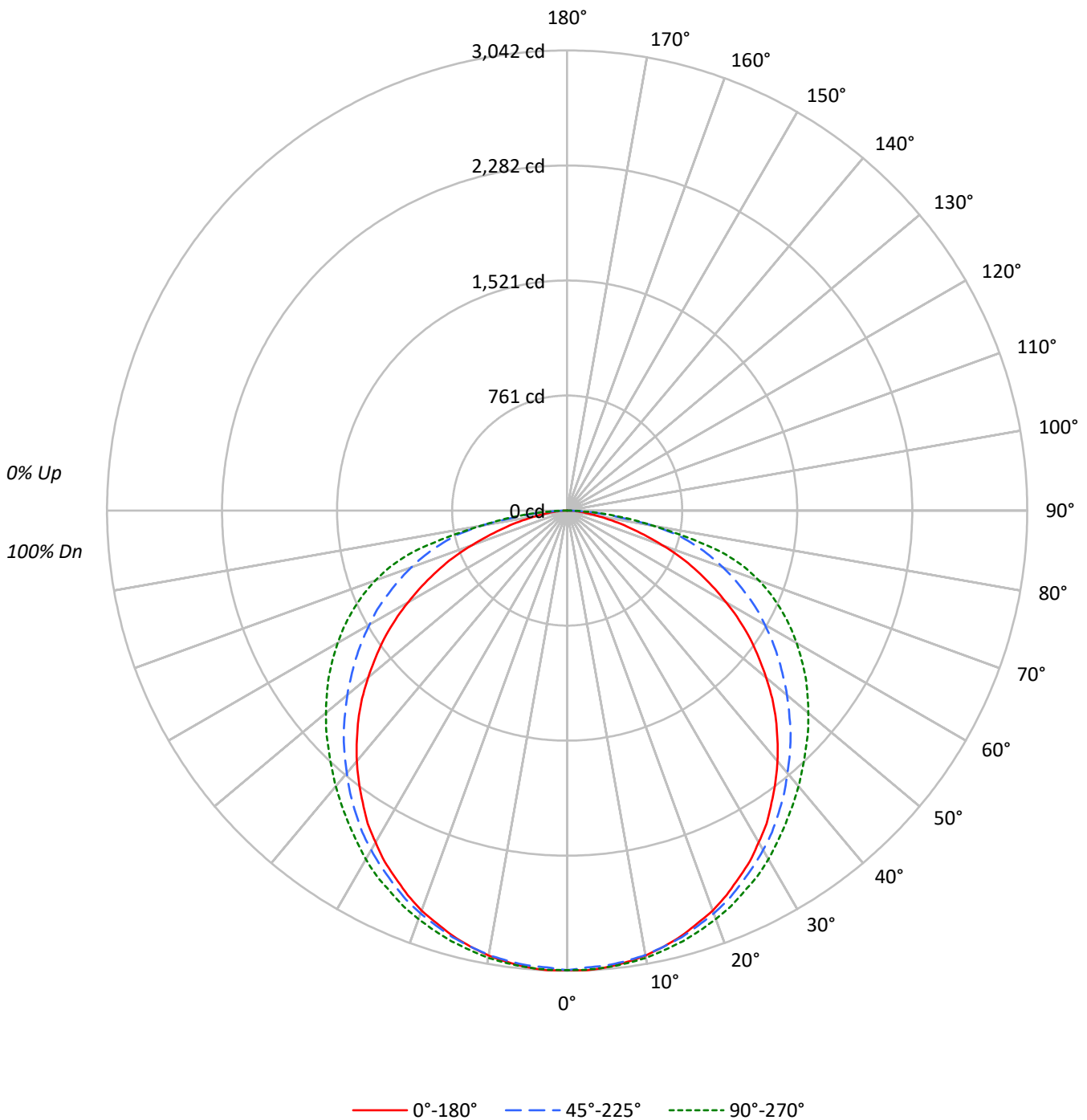
Input Watts (W): 84.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4088	4088	4088
5°	4093	4077	4093
10°	4081	4076	4102
15°	4057	4068	4106
20°	4030	4058	4115
25°	3980	4039	4120
30°	3934	4026	4136
35°	3870	4005	4140
40°	3801	3980	4179
45°	3715	3976	4244
50°	3594	3972	4357
55°	3467	4000	4515
60°	3270	4061	4715
65°	3020	4157	4980
70°	2637	4302	5306
75°	2140	4524	5482
80°	1581	4436	4436
85°	1212	3267	3690



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	287.8	3.1
10°-20°	826.5	8.8
20°-30°	1258.2	13.4
30°-40°	1527.7	16.3
40°-50°	1614.1	17.2
50°-60°	1523.1	16.3
60°-70°	1266.4	13.5
70°-80°	833.1	8.9
80°-90°	227.1	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°	2372.5	25.3
0°-40°	3900.2	41.7
0°-60°	7037.3	75.2
0°-90°	9364.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9364.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3038	3038	3038	3038	3038	
5°	3030	3030	3018	3030	3030	288
15°	2913	2917	2921	2948	2948	821
25°	2681	2697	2721	2768	2775	1237
35°	2356	2384	2438	2501	2521	1475
45°	1952	1992	2089	2191	2231	1503
55°	1478	1541	1705	1866	1925	1316
65°	949	1059	1306	1498	1564	938
75°	412	600	870	1031	1055	443
85°	78	173	212	235	239	96
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3038.1	3038.1	3038.1	3038.1	3038.1
2.5°	3042.1	3038.1	3022.4	3038.1	3038.1
5°	3030.5	3030.5	3018.4	3030.5	3030.5
7.5°	3010.8	3010.8	3002.7	3018.4	3018.4
10°	2987.0	2987.0	2983.4	3002.7	3002.7
12.5°	2952.0	2955.6	2952.0	2975.4	2975.4
15°	2912.6	2916.6	2920.6	2948.0	2948.0
17.5°	2861.9	2869.5	2877.6	2908.6	2912.6
20°	2814.8	2818.4	2834.1	2869.5	2873.6
22.5°	2752.1	2763.7	2783.4	2818.4	2830.5
25°	2681.2	2696.9	2720.7	2767.7	2775.4
27.5°	2614.9	2626.5	2657.9	2709.0	2724.7
30°	2532.4	2552.1	2591.1	2642.2	2661.9
32.5°	2453.9	2473.6	2520.7	2575.4	2591.1
35°	2356.1	2383.5	2438.2	2501.0	2520.7
37.5°	2262.0	2289.4	2356.1	2426.6	2450.3
40°	2163.8	2195.2	2266.0	2348.1	2379.5
42.5°	2058.0	2101.1	2179.5	2269.6	2305.0
45°	1952.2	1991.6	2089.4	2191.2	2230.6
47.5°	1838.7	1885.8	1991.6	2113.1	2160.2
50°	1717.2	1776.0	1897.5	2030.6	2081.7
52.5°	1595.7	1662.1	1799.3	1948.2	2003.3
55°	1477.8	1540.6	1705.1	1866.1	1924.8
57.5°	1348.7	1427.1	1607.4	1779.6	1838.7
60°	1215.1	1301.6	1509.2	1689.5	1752.2
62.5°	1081.9	1180.1	1415.1	1595.7	1662.1
65°	948.7	1058.6	1305.6	1497.5	1564.3
67.5°	819.2	940.7	1203.4	1395.7	1462.1
70°	670.3	823.2	1093.6	1281.9	1348.7
72.5°	533.1	709.7	987.8	1164.4	1223.1
75°	411.6	599.9	870.3	1030.8	1054.6
77.5°	301.8	490.1	748.8	803.5	807.5
80°	204.0	391.9	572.5	564.5	572.5
82.5°	133.2	294.1	360.5	404.0	407.6
85°	78.5	172.6	211.6	235.4	239.0
87.5°	39.0	58.7	74.4	78.5	86.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)