

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: P474392

Luminaire Tested: **24CZ2-90VHE-HRP-UNV-L830-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474392  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-90VHE-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: 7097.6 lumens  
Efficiency: N/A  
Efficacy: 110.7 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

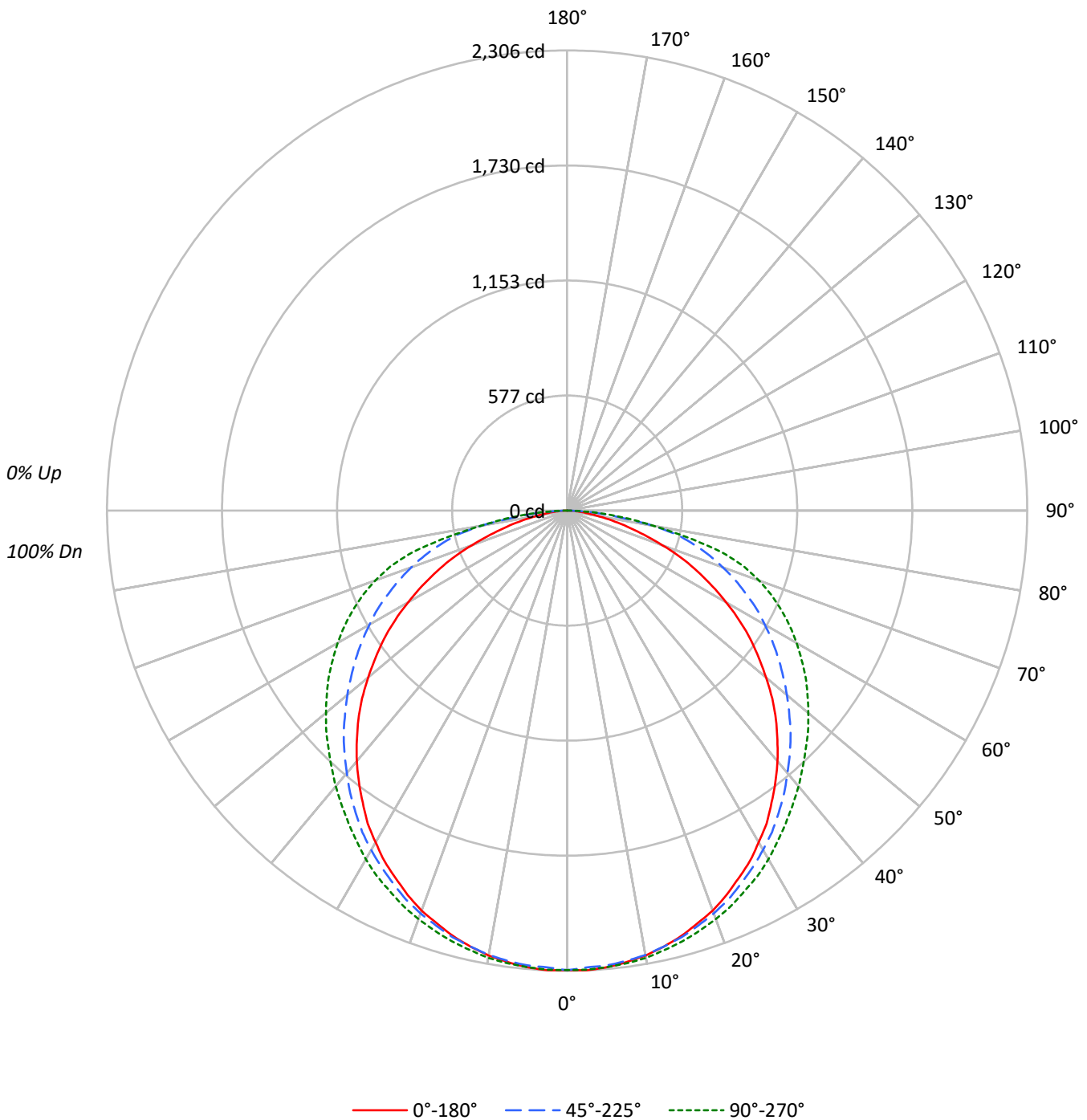
Input Watts (W): 64.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	3098	3098	3098
5°	3102	3090	3102
10°	3093	3089	3110
15°	3075	3084	3113
20°	3055	3076	3119
25°	3017	3062	3123
30°	2982	3051	3135
35°	2933	3036	3138
40°	2881	3017	3168
45°	2816	3013	3217
50°	2725	3010	3303
55°	2628	3032	3423
60°	2478	3078	3574
65°	2289	3151	3775
70°	1999	3261	4022
75°	1622	3429	4155
80°	1198	3363	3363
85°	919	2476	2797



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.1	3.1
10°-20°	626.4	8.8
20°-30°	953.7	13.4
30°-40°	1158.0	16.3
40°-50°	1223.4	17.2
50°-60°	1154.4	16.3
60°-70°	959.9	13.5
70°-80°	631.5	8.9
80°-90°	172.1	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°	1798.3	25.3
0°-40°	2956.3	41.7
0°-60°	5334.1	75.2
0°-90°	7097.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7097.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2303	2303	2303	2303	2303	
5°	2297	2297	2288	2297	2297	218
15°	2208	2211	2214	2234	2234	623
25°	2032	2044	2062	2098	2104	938
35°	1786	1807	1848	1896	1911	1118
45°	1480	1510	1584	1661	1691	1140
55°	1120	1168	1292	1414	1459	998
65°	719	802	990	1135	1186	711
75°	312	455	660	781	799	336
85°	60	131	160	178	181	73
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2302.8	2302.8	2302.8	2302.8	2302.8
2.5°	2305.9	2302.8	2290.9	2302.8	2302.8
5°	2297.0	2297.0	2287.9	2297.0	2297.0
7.5°	2282.1	2282.1	2276.0	2287.9	2287.9
10°	2264.1	2264.1	2261.3	2276.0	2276.0
12.5°	2237.5	2240.3	2237.5	2255.2	2255.2
15°	2207.7	2210.7	2213.8	2234.5	2234.5
17.5°	2169.2	2175.0	2181.1	2204.6	2207.7
20°	2133.6	2136.3	2148.2	2175.0	2178.1
22.5°	2086.0	2094.8	2109.8	2136.3	2145.4
25°	2032.3	2044.2	2062.2	2097.9	2103.7
27.5°	1982.0	1990.8	2014.6	2053.3	2065.2
30°	1919.5	1934.4	1964.0	2002.7	2017.7
32.5°	1860.0	1874.9	1910.6	1952.1	1964.0
35°	1785.9	1806.6	1848.1	1895.7	1910.6
37.5°	1714.5	1735.3	1785.9	1839.3	1857.3
40°	1640.1	1663.9	1717.6	1779.8	1803.6
42.5°	1559.9	1592.5	1652.0	1720.3	1747.2
45°	1479.7	1509.6	1583.7	1660.9	1690.7
47.5°	1393.7	1429.4	1509.6	1601.7	1637.4
50°	1301.6	1346.1	1438.2	1539.2	1577.9
52.5°	1209.5	1259.8	1363.8	1476.7	1518.4
55°	1120.1	1167.7	1292.5	1414.4	1459.0
57.5°	1022.3	1081.7	1218.3	1348.9	1393.7
60°	921.0	986.6	1143.9	1280.6	1328.1
62.5°	820.1	894.5	1072.6	1209.5	1259.8
65°	719.1	802.4	989.6	1135.1	1185.7
67.5°	620.9	713.0	912.2	1057.9	1108.3
70°	508.1	624.0	828.9	971.6	1022.3
72.5°	404.1	538.0	748.7	882.6	927.1
75°	312.0	454.7	659.6	781.3	799.3
77.5°	228.7	371.5	567.5	609.0	612.1
80°	154.6	297.0	434.0	427.9	434.0
82.5°	100.9	222.9	273.3	306.2	308.9
85°	59.5	130.8	160.4	178.4	181.2
87.5°	29.6	44.5	56.4	59.5	65.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)