

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: P474492

Luminaire Tested: **24CZ2-90VHE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474492  
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-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: 7494.8 lumens  
Efficiency: N/A  
Efficacy: 116.9 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

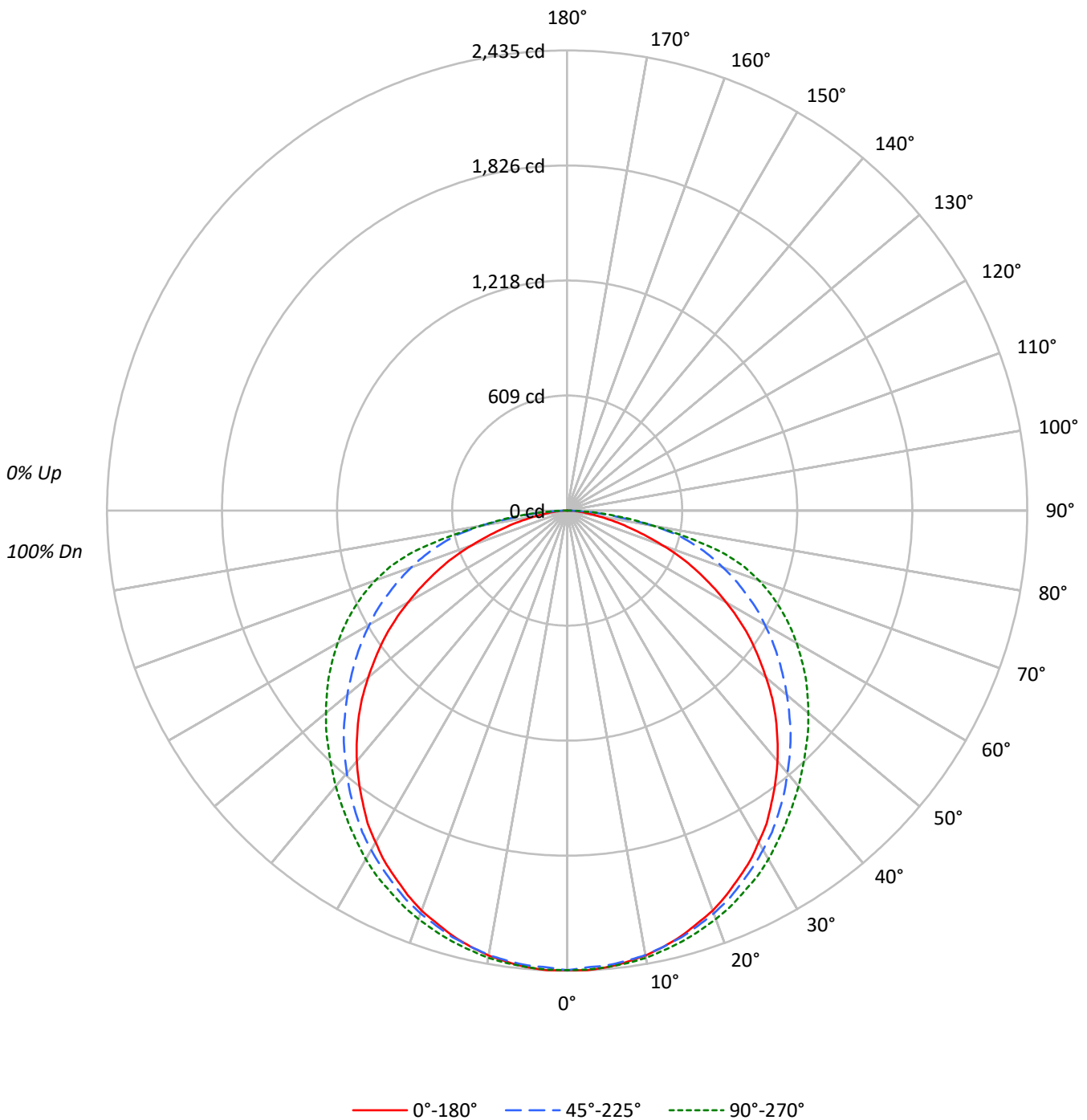
Input Watts (W): 64.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	3272	3272	3272
5°	3276	3263	3276
10°	3266	3262	3283
15°	3247	3256	3287
20°	3226	3248	3293
25°	3186	3233	3298
30°	3149	3222	3310
35°	3098	3205	3314
40°	3042	3186	3345
45°	2973	3182	3397
50°	2877	3179	3488
55°	2775	3202	3614
60°	2617	3250	3774
65°	2418	3327	3986
70°	2111	3443	4247
75°	1712	3621	4388
80°	1265	3551	3551
85°	969	2615	2953



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	230.4	3.1
10°-20°	661.5	8.8
20°-30°	1007.1	13.4
30°-40°	1222.8	16.3
40°-50°	1291.9	17.2
50°-60°	1219.0	16.3
60°-70°	1013.6	13.5
70°-80°	666.8	8.9
80°-90°	181.8	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°	1898.9	25.3
0°-40°	3121.7	41.7
0°-60°	5632.6	75.2
0°-90°	7494.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7494.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2432	2432	2432	2432	2432	
5°	2426	2426	2416	2426	2426	230
15°	2331	2334	2338	2360	2360	657
25°	2146	2159	2178	2215	2221	990
35°	1886	1908	1952	2002	2018	1180
45°	1562	1594	1672	1754	1785	1203
55°	1183	1233	1365	1494	1541	1054
65°	759	847	1045	1199	1252	751
75°	329	480	697	825	844	355
85°	63	138	169	188	191	77
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2431.7	2431.7	2431.7	2431.7	2431.7
2.5°	2434.9	2431.7	2419.1	2431.7	2431.7
5°	2425.6	2425.6	2415.9	2425.6	2425.6
7.5°	2409.8	2409.8	2403.3	2415.9	2415.9
10°	2390.8	2390.8	2387.9	2403.3	2403.3
12.5°	2362.8	2365.7	2362.8	2381.4	2381.4
15°	2331.2	2334.4	2337.6	2359.5	2359.5
17.5°	2290.6	2296.7	2303.2	2328.0	2331.2
20°	2252.9	2255.8	2268.4	2296.7	2300.0
22.5°	2202.7	2212.0	2227.8	2255.8	2265.5
25°	2146.0	2158.6	2177.6	2215.3	2221.4
27.5°	2092.9	2102.2	2127.4	2168.3	2180.8
30°	2026.9	2042.7	2073.9	2114.8	2130.6
32.5°	1964.1	1979.9	2017.5	2061.3	2073.9
35°	1885.8	1907.7	1951.5	2001.8	2017.5
37.5°	1810.5	1832.4	1885.8	1942.2	1961.2
40°	1731.9	1757.0	1813.7	1879.4	1904.5
42.5°	1647.2	1681.7	1744.5	1816.6	1844.9
45°	1562.5	1594.1	1672.3	1753.8	1785.4
47.5°	1471.7	1509.4	1594.1	1691.3	1729.0
50°	1374.4	1421.5	1518.7	1625.3	1666.2
52.5°	1277.2	1330.3	1440.1	1559.3	1603.4
55°	1182.8	1233.1	1364.8	1493.6	1540.6
57.5°	1079.5	1142.3	1286.5	1424.4	1471.7
60°	972.5	1041.8	1207.9	1352.2	1402.5
62.5°	865.9	944.5	1132.6	1277.2	1330.3
65°	759.4	847.3	1045.0	1198.6	1252.1
67.5°	655.7	752.9	963.2	1117.1	1170.3
70°	536.5	658.9	875.3	1026.0	1079.5
72.5°	426.7	568.1	790.6	932.0	979.0
75°	329.4	480.2	696.6	825.0	844.0
77.5°	241.5	392.2	599.3	643.1	646.3
80°	163.3	313.7	458.3	451.8	458.3
82.5°	106.6	235.4	288.5	323.3	326.2
85°	62.8	138.2	169.4	188.4	191.3
87.5°	31.2	47.0	59.6	62.8	68.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)