

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: P474472

Luminaire Tested: **24CZ2-45HE-HRP-UNV-L840-CD1-U**

Issue Date: 01/28/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P474472  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 01/28/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24CZ2-45HE-HRP-UNV-L840-CD1-U  
Description: 2'X4' TROFFER LED MODULE, 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: 3889.8 lumens  
Efficiency: N/A  
Efficacy: 110.2 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

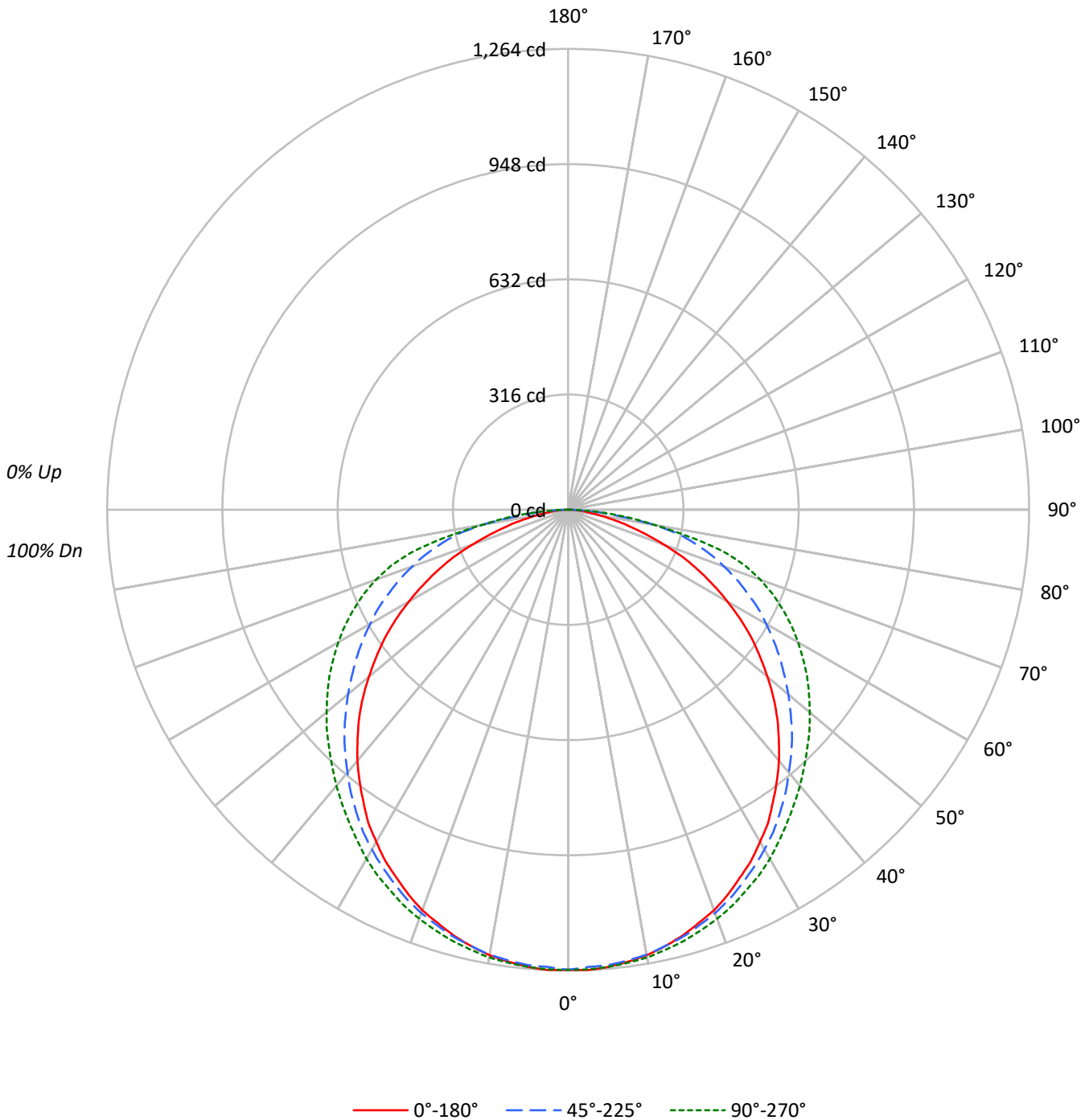
Input Watts (W): 35.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	1698	1698	1698
5°	1700	1693	1700
10°	1695	1693	1704
15°	1685	1690	1706
20°	1674	1686	1709
25°	1654	1678	1712
30°	1634	1672	1718
35°	1608	1664	1720
40°	1579	1653	1736
45°	1543	1651	1763
50°	1493	1650	1810
55°	1440	1662	1876
60°	1358	1687	1959
65°	1255	1727	2069
70°	1095	1787	2204
75°	889	1879	2277
80°	656	1843	1843
85°	503	1357	1533



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.6	3.1
10°-20°	343.3	8.8
20°-30°	522.7	13.4
30°-40°	634.6	16.3
40°-50°	670.5	17.2
50°-60°	632.7	16.3
60°-70°	526.1	13.5
70°-80°	346.1	8.9
80°-90°	94.3	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°	985.5	25.3
0°-40°	1620.2	41.7
0°-60°	2923.3	75.2
0°-90°	3889.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3889.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1262	1262	1262	1262	1262	
5°	1259	1259	1254	1259	1259	120
15°	1210	1212	1213	1225	1225	341
25°	1114	1120	1130	1150	1153	514
35°	979	990	1013	1039	1047	613
45°	811	827	868	910	927	625
55°	614	640	708	775	800	547
65°	394	440	542	622	650	390
75°	171	249	362	428	438	184
85°	33	72	88	98	99	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1262.0	1262.0	1262.0	1262.0	1262.0
2.5°	1263.7	1262.0	1255.5	1262.0	1262.0
5°	1258.9	1258.9	1253.8	1258.9	1258.9
7.5°	1250.7	1250.7	1247.3	1253.8	1253.8
10°	1240.8	1240.8	1239.3	1247.3	1247.3
12.5°	1226.3	1227.8	1226.3	1236.0	1236.0
15°	1209.9	1211.6	1213.2	1224.6	1224.6
17.5°	1188.8	1192.0	1195.4	1208.2	1209.9
20°	1169.3	1170.8	1177.3	1192.0	1193.7
22.5°	1143.2	1148.1	1156.2	1170.8	1175.8
25°	1113.8	1120.3	1130.2	1149.7	1152.9
27.5°	1086.2	1091.1	1104.1	1125.3	1131.8
30°	1051.9	1060.1	1076.4	1097.6	1105.8
32.5°	1019.4	1027.5	1047.1	1069.8	1076.4
35°	978.7	990.1	1012.8	1038.9	1047.1
37.5°	939.6	951.0	978.7	1008.0	1017.9
40°	898.9	911.9	941.3	975.4	988.4
42.5°	854.9	872.8	905.4	942.8	957.5
45°	810.9	827.3	867.9	910.2	926.6
47.5°	763.8	783.4	827.3	877.8	897.3
50°	713.3	737.7	788.2	843.5	864.8
52.5°	662.9	690.4	747.4	809.3	832.2
55°	613.9	640.0	708.3	775.2	799.6
57.5°	560.2	592.8	667.7	739.2	763.8
60°	504.7	540.7	626.9	701.8	727.9
62.5°	449.4	490.2	587.8	662.9	690.4
65°	394.1	439.7	542.4	622.1	649.8
67.5°	340.3	390.8	499.9	579.8	607.4
70°	278.4	342.0	454.3	532.5	560.2
72.5°	221.5	294.8	410.3	483.7	508.1
75°	171.0	249.2	361.5	428.2	438.1
77.5°	125.4	203.6	311.0	333.8	335.4
80°	84.7	162.8	237.8	234.5	237.8
82.5°	55.3	122.2	149.8	167.8	169.3
85°	32.6	71.7	87.9	97.8	99.3
87.5°	16.2	24.4	30.9	32.6	35.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)