

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: METALUX

Report Number: P601067

Luminaire Tested: UHBS-24-MV-L840-U-CDL-277V

Issue Date: 8/28/2023

Test Information

Test Method: LM-79-2019
Report Number: P601067
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ()
Test Lab: INNOVATION CENTER
Issue Date: 8/28/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: METALUX
Catalog Number: UHBS-24-MV-L840-U-CDL-277V
Description: UHB Round Select with Clear Reflector with Lens Cover at 277V 24000 LUMEN SETTING AND 4000K
Light Source: -
Ballast/Driver: Electrical Driver

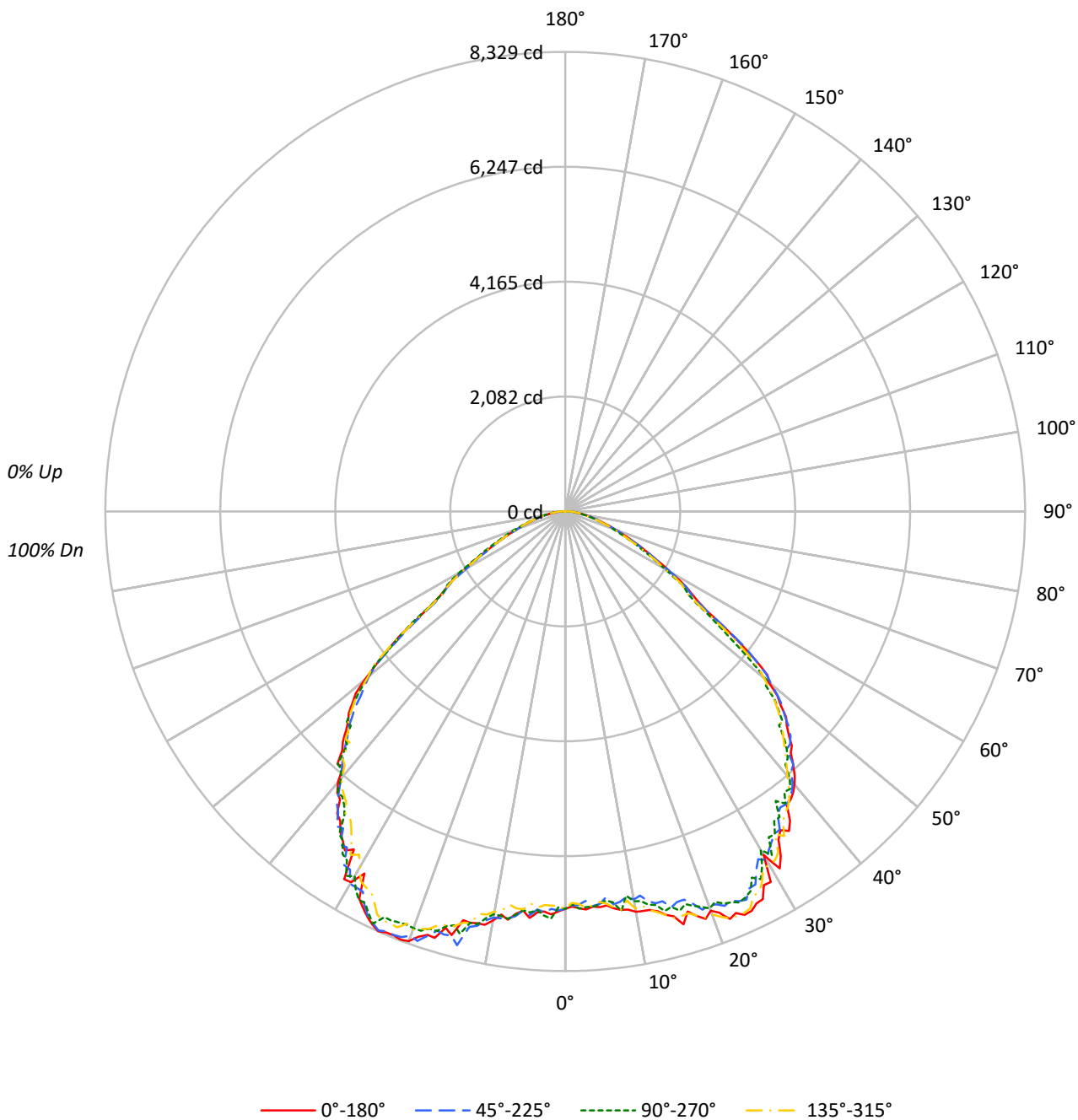
Summary

Lumens per Lamp: 20336 (1 lamp)
Luminaire Lumens: 20336.0 lumens
Efficiency: 100.0%
Efficacy: 135.2 lumens/watt
Spacing Criteria (0/90/45): 1.47 / 1.44 / 1.47
Luminous Opening: Circular (Dia: 1.33' x H: 0')
CIE Type: Direct

Input Watts (W): 150.4
Input Voltage (V): 277
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: 24 FT

TEST NUMBER: P601067
CATALOG NUMBER: UHBS-24-MV-L840-U-CDL-277V

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	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	100	100	100	100	100		
	1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87		
	2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75		
	3	93	84	76	71	91	82	75	70	79	73	69	77	72	68	74	70	66	64	64	64	64	64	64		
	4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56	56	56	56	56	56		
	5	79	67	59	53	77	66	58	53	64	57	52	62	56	51	60	55	51	49	49	49	49	49	49		
	6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43	43	43	43	43	43		
	7	68	55	47	41	66	55	47	41	53	46	41	52	45	40	50	45	40	38	38	38	38	38	38		
	8	63	51	42	37	62	50	42	37	49	42	37	47	41	36	46	40	36	34	34	34	34	34	34		
	9	59	46	39	33	58	46	38	33	45	38	33	44	37	33	43	37	33	31	31	31	31	31	31		
	10	56	43	35	30	54	42	35	30	41	35	30	40	34	30	40	34	30	28	28	28	28	28	28		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	55799	55799	55799	55799
5°	55996	55565	57518	56726
10°	57958	56434	59205	58295
15°	60924	59509	63752	62269
20°	63501	63126	68317	66263
25°	68273	65994	70623	70446
30°	64292	63376	69410	68242
35°	66842	63987	67108	67471
40°	65350	64033	64730	63862
45°	62754	60026	61440	60151
50°	58040	57374	57021	56189
55°	42200	39265	39775	40283
60°	34316	32366	32686	34110
65°	27453	25653	25655	27056
70°	22234	20789	20669	22336
75°	18587	17359	17380	18781
80°	16491	15473	15041	16803
85°	17264	16295	16055	18046

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 30°
 Vertical Angle: 46°
 Luminance: 63649 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	691.8	3.4	3.4
10°-20°	2176.0	10.7	10.7
20°-30°	3629.2	17.8	17.8
30°-40°	4336.4	21.3	21.3
40°-50°	4307.5	21.2	21.2
50°-60°	2881.0	14.2	14.2
60°-70°	1440.7	7.1	7.1
70°-80°	647.1	3.2	3.2
80°-90°	226.4	1.1	1.1
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	6496.9	31.9	31.9
0°-40°	10833.3	53.3	53.3
0°-60°	18021.8	88.6	88.6
0°-90°	20336.0	100.0	100.0
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	20336.0	100.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7202	7202	7202	7202	7202	
5°	7200	7144	7396	7294	7200	692
15°	7596	7419	7948	7763	7596	2154
25°	7986	7720	8261	8240	7986	3617
35°	7067	6765	7095	7134	7067	4362
45°	5727	5478	5607	5490	5727	4410
55°	3124	2907	2945	2982	3124	3010
65°	1498	1399	1399	1476	1498	1504
75°	621	580	581	627	621	672
85°	194	183	181	203	194	232
90°	120	122	117	124	120	



TEST NUMBER: P601067
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CANDELA DISTRIBUTION (FULL):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	7201.9	7201.9	7201.9	7201.9	7201.9	7201.9	7201.9	7201.9	7201.9	7201.9	7201.9
1°	7160.3	7025.7	7266.0	7116.5	7036.8	7152.6	7251.2	7212.4	7249.6	7175.6	7120.5
2°	7193.3	7140.7	7122.8	7205.1	7038.4	7198.5	7305.7	7135.4	7277.0	7382.2	7170.1
3°	7222.5	6971.4	7161.7	7180.1	7190.4	7181.6	7260.3	7248.3	7296.6	7334.3	7184.5
4°	7179.4	7092.7	7242.6	7182.0	7149.1	7155.9	7287.2	7208.9	7246.6	7239.0	7184.2
5°	7199.8	7113.9	7169.6	7144.5	7092.2	7113.4	7395.6	7246.9	7436.8	7293.7	7105.4
6°	7178.3	7037.5	7030.3	7087.0	7097.6	7203.2	7271.4	7307.3	7233.3	7266.4	7279.3
7°	7248.2	7168.8	7177.8	7140.4	7200.4	7246.1	7345.2	7364.0	7410.6	7360.1	7238.9
8°	7292.3	7116.2	7169.7	7311.0	7301.6	7271.5	7473.2	7379.9	7524.5	7450.4	7138.6
9°	7305.2	7105.1	7025.0	7046.9	7066.6	7211.1	7396.8	7456.4	7476.5	7425.3	7163.2
10°	7366.9	7072.6	7211.4	7173.3	7291.4	7318.1	7525.5	7438.3	7507.2	7409.8	7456.8
11°	7378.0	7075.9	7107.1	7191.9	7169.9	7376.0	7630.4	7464.1	7639.7	7508.7	7437.5
12°	7384.5	7138.6	7304.0	7287.1	7380.6	7395.8	7628.3	7682.6	7675.8	7650.2	7441.9
13°	7436.3	7264.5	7306.8	7320.4	7439.7	7473.1	7649.4	7766.6	7689.6	7650.7	7615.4
14°	7534.2	7292.3	7267.7	7462.5	7494.4	7584.7	7634.1	8120.8	8083.7	7889.2	7758.7
15°	7595.5	7366.7	7489.6	7419.1	7604.2	7650.7	7948.1	7833.1	8077.5	7763.1	7909.0
16°	7784.4	7389.8	7332.6	7525.3	7525.2	7735.1	7848.0	7932.3	8017.6	7819.0	7770.8
17°	7580.1	7310.6	7406.2	7441.2	7500.5	7725.6	8080.5	7966.1	7924.6	7948.5	7891.6
18°	7706.6	7460.4	7478.2	7516.7	7674.7	7729.0	8065.1	8063.3	8119.1	7951.9	7929.0
19°	7810.1	7701.1	7567.2	7578.2	7688.2	7882.3	8150.9	8149.8	8314.1	8037.1	8019.8
20°	7701.7	7573.0	7630.5	7656.3	7759.9	7777.3	8285.8	7972.0	8383.1	8036.7	8095.1
21°	7791.9	7597.6	7653.7	7577.7	7819.2	7923.9	8312.1	8287.3	8240.0	8020.0	8020.9
22°	7966.8	7652.6	7763.5	7664.7	7840.3	8064.1	8285.4	8317.0	8246.9	8032.1	8113.4
23°	7907.6	7692.3	7639.4	7694.1	7816.0	8118.1	8289.8	8296.7	8243.9	8055.2	8154.0
24°	8000.2	7731.8	7727.8	7756.6	7854.8	8080.6	8329.1	8353.7	8272.1	8049.8	8186.5
25°	7986.3	7829.9	7695.6	7719.8	7783.5	8084.8	8261.2	8129.5	8337.4	8240.5	8029.4
26°	7905.5	7617.0	7580.3	7658.4	7588.0	7938.8	8174.5	8030.5	8279.9	8113.3	7932.8
27°	7885.5	7523.5	7650.9	7446.7	7598.0	7874.2	8065.6	7980.0	8041.6	7972.8	7843.6
28°	7666.4	7262.4	7467.9	7548.0	7461.3	7737.7	7946.3	7772.6	7838.7	7969.1	7690.8
29°	7680.4	7247.0	7165.9	7352.2	7241.9	7536.1	7500.9	7740.5	7850.9	7826.0	7656.0
30°	7186.4	7303.8	7278.4	7084.0	7307.8	7489.0	7758.5	7647.3	7939.6	7627.9	7514.2
31°	7548.3	7270.6	7049.1	7265.2	7233.7	7511.1	7775.1	7570.9	7571.4	7706.5	7161.8
32°	7368.4	6890.6	7224.0	6959.3	7235.7	7331.8	7221.0	7415.4	7699.8	7459.2	7279.9
33°	7093.6	7009.3	6915.7	6977.2	6878.2	7073.4	7326.1	7284.0	7235.7	7402.1	7142.3
34°	6965.7	6988.3	6919.1	6768.9	7021.7	7168.2	7203.1	7240.2	7334.1	7201.5	6954.1
35°	7067.0	6778.7	6637.9	6765.2	6808.5	6937.1	7095.1	6915.2	7114.6	7133.5	6657.3
36°	6927.0	6660.4	6591.8	6483.6	6715.6	6813.7	6934.4	6970.5	7126.5	6801.4	6725.7
37°	6671.5	6624.7	6671.7	6625.5	6529.2	6878.5	6859.9	6814.6	6841.6	6652.2	6586.7
38°	6630.3	6637.4	6601.4	6450.3	6473.4	6713.1	6624.6	6743.7	6691.1	6559.9	6437.4
39°	6561.4	6535.7	6510.6	6471.0	6383.9	6485.4	6560.3	6525.7	6493.9	6547.0	6352.1
40°	6461.3	6455.6	6359.1	6331.1	6183.7	6345.5	6400.0	6267.7	6347.5	6314.2	6290.9
41°	6337.3	6231.0	6245.8	6076.1	6020.0	6208.8	6128.3	6148.3	6180.6	6189.0	6059.0
42°	6168.3	6214.3	6136.1	6024.3	6076.2	5880.0	6162.8	6068.8	5964.6	6155.8	6068.6
43°	5990.8	5821.2	5945.4	5881.6	5773.2	5873.9	5918.8	5890.9	5815.6	5786.3	5643.9
44°	5906.6	5891.6	5836.1	5704.0	5630.8	5750.2	5798.9	5682.8	5667.2	5733.1	5741.2



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CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	5727.3	5734.9	5803.6	5478.3	5511.1	5599.0	5607.4	5566.7	5570.6	5489.7	5449.7
46°	5577.2	5706.7	5557.7	5473.2	5334.5	5483.2	5464.8	5390.0	5337.2	5500.8	5457.6
47°	5474.2	5442.0	5434.0	5283.1	5252.3	5272.3	5363.7	5226.3	5172.4	5303.5	5326.2
48°	5254.2	5364.6	5231.6	5112.7	5055.4	5135.3	5179.8	4970.4	4976.1	5127.0	5125.9
49°	5091.0	5146.2	5079.7	4817.6	4839.3	4957.8	5030.8	4814.5	4816.3	4902.9	4867.9
50°	4815.2	4885.1	4862.2	4760.0	4671.2	4765.0	4730.7	4627.8	4636.3	4661.7	4634.2
51°	4713.6	4739.6	4641.5	4393.1	4504.0	4454.5	4397.2	4412.2	4361.3	4444.0	4544.6
52°	4370.0	4487.2	4240.0	3968.7	4077.1	4260.2	4087.1	4000.3	4017.6	4038.3	4199.1
53°	3967.3	4105.4	4001.3	3584.8	3770.4	3857.5	3769.3	3608.1	3667.7	3742.5	3741.3
54°	3545.2	3606.2	3499.3	3245.7	3342.5	3404.2	3303.9	3234.2	3264.8	3424.1	3334.6
55°	3124.1	3209.1	3000.5	2906.8	2938.6	2951.5	2944.6	2862.8	2901.2	2982.2	2929.9
56°	2882.6	2903.7	2734.6	2689.2	2689.9	2676.7	2720.9	2672.0	2687.1	2712.4	2667.4
57°	2729.3	2745.1	2628.0	2601.0	2589.5	2558.7	2591.8	2556.8	2584.4	2580.9	2557.1
58°	2590.4	2639.7	2534.6	2490.1	2498.1	2485.0	2477.8	2387.5	2490.4	2520.2	2467.9
59°	2403.5	2460.1	2325.6	2270.3	2299.0	2305.0	2295.0	2185.4	2305.7	2372.9	2306.6
60°	2214.6	2276.0	2148.5	2088.7	2106.8	2105.1	2109.4	2011.0	2098.4	2201.3	2127.6
61°	2050.2	2082.5	2000.5	1925.7	1935.9	1939.4	1949.1	1879.2	1929.3	2013.2	1951.5
62°	1874.7	1913.7	1845.0	1777.6	1780.8	1806.4	1797.2	1718.8	1789.7	1850.0	1809.4
63°	1744.3	1789.4	1701.1	1634.8	1652.5	1663.0	1658.4	1576.4	1637.1	1713.5	1690.1
64°	1611.5	1633.0	1576.3	1513.3	1532.4	1533.5	1507.6	1446.3	1507.6	1603.0	1547.7
65°	1497.5	1507.1	1444.9	1399.3	1409.0	1421.0	1399.4	1359.1	1398.5	1475.8	1403.3
66°	1378.5	1391.8	1312.5	1276.9	1285.4	1293.9	1291.6	1248.9	1289.5	1352.1	1288.0
67°	1263.5	1276.6	1217.2	1165.9	1181.7	1195.5	1191.2	1137.3	1199.5	1243.4	1201.7
68°	1151.9	1172.1	1128.5	1076.8	1096.3	1096.3	1083.5	1041.7	1086.1	1157.7	1115.7
69°	1064.8	1086.7	1050.5	994.8	1012.1	1008.5	990.8	953.9	995.5	1076.5	1022.4
70°	981.5	990.3	961.9	917.7	926.9	930.6	912.4	884.6	922.8	986.0	925.2
71°	896.8	913.6	868.8	842.4	840.3	849.2	840.3	814.6	853.1	897.6	852.7
72°	816.8	829.9	803.4	773.7	774.6	777.7	770.7	746.6	777.2	818.6	789.6
73°	749.2	755.1	737.1	706.9	711.6	708.3	703.3	679.1	711.0	751.8	722.8
74°	683.9	688.4	671.0	641.2	645.4	645.0	636.5	621.8	643.3	691.0	660.9
75°	620.9	630.5	602.2	579.9	585.2	589.4	580.6	568.0	587.7	627.4	595.2
76°	560.1	579.2	546.8	526.3	531.4	536.7	527.2	515.4	533.4	567.4	539.3
77°	506.4	523.7	495.8	476.3	482.3	487.8	474.1	464.9	485.0	516.4	490.7
78°	455.8	468.9	446.4	429.6	435.6	439.5	425.8	417.4	437.0	467.3	446.0
79°	411.0	421.5	402.5	386.4	392.3	397.5	378.9	373.9	392.9	421.2	401.2
80°	369.6	377.1	360.4	346.8	350.6	354.4	337.1	335.1	352.6	376.6	358.3
81°	330.2	338.9	321.8	309.1	312.8	317.1	303.3	301.7	315.9	336.7	320.6
82°	290.8	301.7	283.1	271.4	278.2	279.9	267.4	268.3	282.5	301.2	282.8
83°	254.6	262.2	247.9	237.5	245.9	245.6	235.3	234.7	248.4	265.6	247.5
84°	221.8	227.5	217.2	206.8	214.9	215.6	204.7	203.6	218.5	231.3	216.3
85°	194.2	198.5	190.7	183.3	189.3	187.9	180.6	179.7	192.4	203.0	189.5
86°	173.1	175.7	170.9	164.9	169.7	167.2	163.6	160.7	172.3	180.9	169.3
87°	154.9	158.6	153.6	149.6	152.8	151.5	146.6	145.4	155.1	163.8	152.5
88°	139.8	141.6	139.9	137.0	140.1	138.5	133.7	132.2	141.0	146.8	138.6
89°	127.1	129.0	128.1	126.9	129.2	127.1	122.9	121.4	128.7	134.0	126.6



TEST NUMBER: P601067
CATALOG NUMBER: UHBS-24-MV-L840-U-CDL-277V

CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
90°	119.8	120.7	121.0	122.2	123.4	119.5	117.4	116.9	121.9	124.4	119.5



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CANDELA DISTRIBUTION (continued):

	330°	360°
0°	7201.9	7201.9
1°	7184.2	7160.3
2°	7124.1	7193.3
3°	7103.0	7222.5
4°	7202.5	7179.4
5°	7158.2	7199.8
6°	7213.0	7178.3
7°	7261.3	7248.2
8°	7262.1	7292.3
9°	7466.0	7305.2
10°	7264.2	7366.9
11°	7448.6	7378.0
12°	7470.5	7384.5
13°	7690.9	7436.3
14°	7601.6	7534.2
15°	7655.5	7595.5
16°	7822.3	7784.4
17°	7783.2	7580.1
18°	7968.6	7706.6
19°	7984.9	7810.1
20°	8042.3	7701.7
21°	7978.0	7791.9
22°	8149.0	7966.8
23°	8063.1	7907.6
24°	8046.6	8000.2
25°	8088.2	7986.3
26°	7832.0	7905.5
27°	7636.1	7885.5
28°	7724.9	7666.4
29°	7640.4	7680.4
30°	7329.3	7186.4
31°	7349.8	7548.3
32°	7391.2	7368.4
33°	7071.9	7093.6
34°	6902.1	6965.7
35°	6910.1	7067.0
36°	6818.6	6927.0
37°	6601.7	6671.5
38°	6578.6	6630.3
39°	6513.6	6561.4
40°	6294.6	6461.3
41°	6117.4	6337.3
42°	5986.3	6168.3
43°	5807.7	5990.8
44°	5716.9	5906.6



TEST NUMBER: P601067
CATALOG NUMBER: UHBS-24-MV-L840-U-CDL-277V

CANDELA DISTRIBUTION (continued):

	330°	360°
45°	5579.3	5727.3
46°	5482.4	5577.2
47°	5263.4	5474.2
48°	5133.3	5254.2
49°	4917.3	5091.0
50°	4679.5	4815.2
51°	4470.3	4713.6
52°	4081.9	4370.0
53°	3734.0	3967.3
54°	3286.8	3545.2
55°	2924.0	3124.1
56°	2700.2	2882.6
57°	2607.4	2729.3
58°	2450.3	2590.4
59°	2276.1	2403.5
60°	2088.7	2214.6
61°	1907.1	2050.2
62°	1753.1	1874.7
63°	1630.5	1744.3
64°	1517.9	1611.5
65°	1397.4	1497.5
66°	1276.7	1378.5
67°	1171.5	1263.5
68°	1084.5	1151.9
69°	1009.6	1064.8
70°	928.3	981.5
71°	841.4	896.8
72°	771.1	816.8
73°	712.1	749.2
74°	651.3	683.9
75°	589.9	620.9
76°	533.9	560.1
77°	483.0	506.4
78°	435.7	455.8
79°	388.9	411.0
80°	347.6	369.6
81°	311.3	330.2
82°	277.5	290.8
83°	241.6	254.6
84°	210.1	221.8
85°	185.3	194.2
86°	165.6	173.1
87°	148.2	154.9
88°	134.2	139.8
89°	123.0	127.1



TEST NUMBER: P601067
CATALOG NUMBER: UHBS-24-MV-L840-U-CDL-277V

CANDELA DISTRIBUTION (continued):

	330°	360°
90°	118.2	119.8

(END OF REPORT)