

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: P601068

Luminaire Tested: UHBS-24-MV-L850-U-CDL-277V

Issue Date: 8/28/2023

Test Information

Test Method: LM-79-2019
Report Number: P601068
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-L850-U-CDL-277V
Description: UHB Round Select with Clear Reflector with Lens Cover at 277V 24000 LUMEN SETTING AND 5000K
Light Source: -
Ballast/Driver: Electrical Driver

Summary

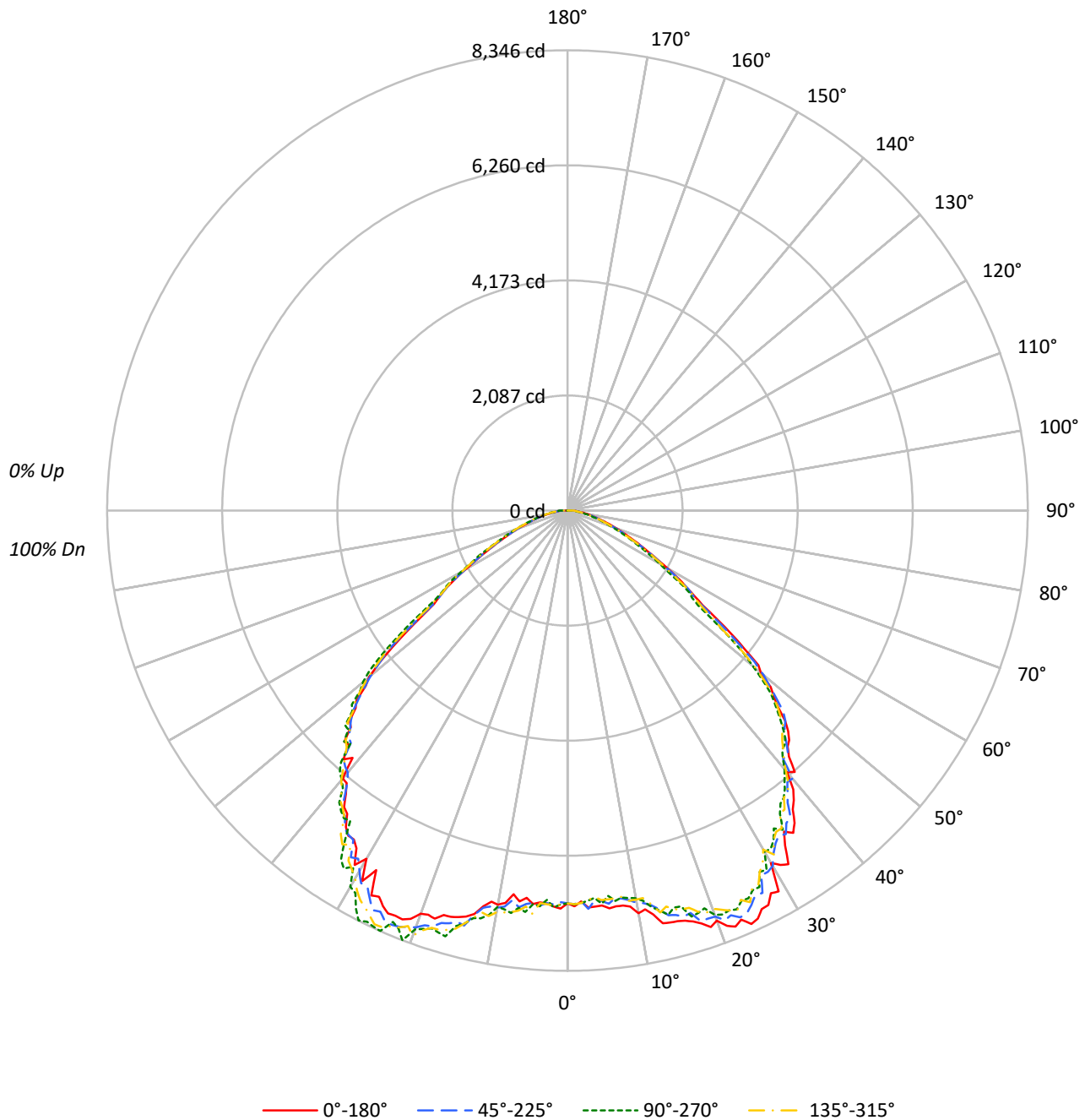
Lumens per Lamp: 20231 (1 lamp)
Luminaire Lumens: 20230.9 lumens
Efficiency: 100.0%
Efficacy: 134.5 lumens/watt
Spacing Criteria (0/90/45): 1.48 / 1.45 / 1.48
Luminous Opening: Circular (Dia: 1.33' x H: 0')
CIE Type: Direct

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

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CATALOG NUMBER: UHBS-24-MV-L850-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				0
RW	70	50	30	10	70	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		100
1	110	106	102	99	108	104	100	97	100	97	94		96	94	92		87
2	101	94	88	83	99	92	87	82	89	84	80		86	82	78		75
3	93	84	76	71	91	82	75	70	79	74	69		77	72	68		64
4	86	75	67	61	84	74	66	60	71	65	60		69	63	59		56
5	79	67	59	53	77	66	58	53	64	57	52		62	56	52		49
6	73	61	53	47	72	60	52	46	58	51	46		57	50	46		43
7	68	55	47	41	67	55	47	41	53	46	41		52	45	41		38
8	64	51	43	37	62	50	42	37	49	42	37		47	41	36		34
9	59	47	39	33	58	46	38	33	45	38	33		44	37	33		31
10	56	43	35	30	54	42	35	30	41	35	30		40	34	30		28

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	55184	55184	55184	55184
5°	55898	55657	55690	55698
10°	58345	56161	57098	57413
15°	61827	59785	61216	62552
20°	65247	64330	64150	66639
25°	69790	66342	67655	71171
30°	66032	63907	65238	70471
35°	67485	63528	66243	64967
40°	62627	61965	64121	64361
45°	61976	60241	60889	61548
50°	55191	52952	56516	58290
55°	40441	37274	39894	43440
60°	32410	30012	32957	34476
65°	25902	23882	26111	27562
70°	21135	19128	21416	22619
75°	17973	15791	18156	19338
80°	16125	13653	16031	17678
85°	17121	14641	17175	19504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 300°

Vertical Angle: 89°

Luminance: 63527 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	685.8	3.4	3.4
10°-20°	2172.3	10.7	10.7
20°-30°	3646.5	18.0	18.0
30°-40°	4329.6	21.4	21.4
40°-50°	4265.7	21.1	21.1
50°-60°	2829.2	14.0	14.0
60°-70°	1428.2	7.1	7.1
70°-80°	645.3	3.2	3.2
80°-90°	228.2	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°	6504.6	32.2	32.2
0°-40°	10834.2	53.6	53.6
0°-60°	17929.2	88.6	88.6
0°-90°	20230.9	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°	20230.9	100.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	7123	7123	7123	7123	7123	
5°	7187	7156	7160	7162	7187	691
15°	7708	7454	7632	7798	7708	2192
25°	8164	7760	7914	8325	8164	3702
35°	7135	6717	7004	6869	7135	4394
45°	5656	5498	5557	5617	5656	4286
55°	2994	2759	2953	3216	2994	2851
65°	1413	1303	1424	1503	1413	1422
75°	600	528	606	646	600	651
85°	193	165	193	219	193	231
90°	126	121	127	131	126	

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CANDELA DISTRIBUTION (FULL):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	7122.6	7122.6	7122.6	7122.6	7122.6	7122.6	7122.6	7122.6	7122.6	7122.6	7122.6
1°	7177.3	7123.5	7158.4	7146.6	7154.9	7123.0	7218.7	7097.4	7104.7	7142.8	7263.7
2°	7092.4	7077.0	7089.4	7120.7	7184.4	7059.1	7182.8	7188.6	7107.1	7204.2	7173.0
3°	7208.2	7232.4	7231.0	7084.6	7128.8	7029.9	7133.3	7113.8	7141.5	7067.5	7139.1
4°	7198.1	7079.8	7082.1	7040.1	7096.8	6947.4	7124.6	7099.5	7257.2	7191.8	7207.3
5°	7187.3	7151.8	7063.0	7156.3	7084.3	7099.6	7160.5	7139.9	7133.7	7161.6	7350.1
6°	7254.2	7118.1	7214.7	7022.3	7135.6	7039.6	7061.7	7127.8	7222.5	7320.7	7243.8
7°	7232.1	7083.4	7082.7	7130.6	7139.9	7032.1	7139.1	7235.9	7260.7	7257.9	7374.8
8°	7232.9	7165.4	7046.2	7085.2	7133.3	7013.1	7025.9	7204.0	7056.5	7366.6	7359.0
9°	7270.5	7125.2	7180.2	7113.3	7209.5	7119.9	7201.8	7274.3	7265.5	7322.2	7378.7
10°	7416.2	7252.5	7189.2	7138.5	7222.3	7100.5	7257.7	7246.0	7382.5	7297.7	7502.8
11°	7366.3	7313.5	7192.2	7212.8	7114.8	7205.5	7224.5	7234.5	7392.1	7471.0	7529.5
12°	7490.6	7423.4	7209.3	7352.3	7337.5	7257.1	7336.5	7362.7	7367.6	7558.0	7465.0
13°	7678.3	7565.4	7275.9	7441.3	7606.8	7349.1	7505.9	7414.2	7634.2	7585.1	7617.2
14°	7700.3	7648.2	7475.3	7554.0	7487.0	7310.4	7589.2	7651.7	7855.7	7718.4	7730.6
15°	7708.0	7651.9	7534.8	7453.5	7527.7	7442.8	7631.9	7730.3	7712.7	7798.5	7925.5
16°	7738.5	7688.0	7623.6	7466.4	7534.8	7507.9	7664.3	7726.2	7848.0	8031.8	7959.2
17°	7792.8	7754.8	7504.1	7696.3	7592.0	7469.6	7668.4	7762.7	7881.6	8002.0	8019.3
18°	7872.2	7860.6	7797.4	7673.5	7649.5	7643.0	7782.0	7867.2	7992.5	7968.2	8003.1
19°	7987.4	7934.9	7719.7	7627.6	7799.6	7630.7	7751.5	7891.8	8016.6	8021.3	8057.8
20°	7913.5	7943.3	7722.9	7802.3	7687.1	7680.4	7780.5	8040.8	8048.1	8082.4	8228.6
21°	8067.0	8031.4	7886.4	7846.3	7732.8	7769.1	7932.9	8023.2	8149.8	8346.2	8207.2
22°	8138.0	7912.6	7917.0	7819.1	7777.7	7866.5	7993.3	8024.8	8257.2	8176.8	8236.4
23°	8058.2	8048.8	7982.2	7856.2	7887.8	7869.4	7982.4	8087.7	8235.9	8102.7	8271.9
24°	8205.6	7996.4	7995.5	7750.0	7729.1	7729.7	7997.0	8042.2	8250.8	8343.6	8327.3
25°	8163.8	7922.0	7860.6	7760.4	7811.8	7854.8	7914.0	7949.1	8101.2	8325.3	8377.8
26°	8038.9	7753.7	7774.5	7659.6	7582.9	7676.7	7790.8	8001.3	8126.3	8293.9	8229.1
27°	8026.2	7724.0	7843.5	7662.3	7700.4	7544.7	7832.4	7800.7	7998.0	8341.5	8258.6
28°	7859.5	7545.7	7426.9	7419.9	7507.9	7343.5	7381.3	7546.3	7909.7	8172.5	8057.1
29°	7894.7	7579.0	7408.6	7445.0	7262.7	7350.3	7685.0	7576.8	7869.3	7932.3	8061.0
30°	7380.9	7496.4	7382.7	7143.4	7050.8	7141.7	7292.1	7624.0	7461.5	7877.1	7635.3
31°	7497.6	7364.4	7139.8	7152.8	7256.2	7300.0	7495.3	7343.1	7386.4	7533.2	7699.9
32°	7562.0	7284.2	6952.3	7049.7	6958.5	7134.1	7218.9	7447.3	7376.2	7653.3	7592.1
33°	7240.7	6955.8	7102.8	6872.2	6946.5	6945.4	7111.8	7173.1	7079.4	7540.1	7220.8
34°	7020.5	7213.6	6946.4	6979.7	6895.9	7006.5	7108.8	7025.1	7167.8	7219.3	7398.2
35°	7135.0	6890.7	6943.3	6716.6	6703.0	6719.2	7003.7	7121.4	6958.1	6868.8	7217.1
36°	7004.1	7001.4	6758.0	6566.9	6668.5	6730.4	6796.1	6846.3	6868.0	6896.7	6945.2
37°	6789.0	6612.5	6655.0	6519.5	6546.0	6488.1	6731.9	6887.0	6716.4	6820.0	6861.4
38°	6664.0	6500.8	6462.4	6397.5	6490.2	6481.5	6526.2	6637.9	6465.7	6721.3	6724.4
39°	6505.1	6277.2	6393.3	6251.6	6325.2	6406.4	6360.2	6328.2	6343.9	6469.2	6524.0
40°	6192.1	6288.5	6398.8	6126.7	6138.5	6184.0	6339.8	6156.4	6237.2	6363.6	6417.9
41°	6282.1	6009.7	5909.8	5949.1	5970.2	5983.7	5940.2	6248.8	6041.4	6295.7	6221.9
42°	6001.8	5982.2	5995.8	5822.9	5802.6	5890.4	6070.8	6179.1	5945.5	6138.2	5996.7
43°	5854.8	5859.9	5805.8	5783.0	5668.3	5757.4	5805.2	5745.9	5777.2	5763.2	5835.9
44°	5789.8	5677.4	5687.7	5674.4	5603.8	5613.3	5824.1	5855.2	5564.0	5827.3	5833.9

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CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	5656.3	5486.5	5647.9	5497.9	5483.3	5585.8	5557.1	5629.9	5513.8	5617.2	5552.8
46°	5484.4	5451.7	5534.3	5325.9	5302.1	5421.4	5487.2	5490.0	5423.5	5606.8	5554.6
47°	5214.9	5319.2	5375.5	5146.8	5178.9	5233.0	5249.5	5342.8	5255.6	5333.8	5328.7
48°	5035.7	5129.2	5077.8	4962.4	4933.8	5087.1	5151.0	5131.1	5053.8	5262.9	5192.9
49°	4879.8	4800.3	4913.2	4685.8	4700.0	4829.4	4847.1	4940.0	4797.4	4977.5	5026.0
50°	4578.9	4642.4	4632.4	4393.1	4376.9	4574.4	4688.8	4698.6	4612.8	4836.0	4768.2
51°	4452.5	4328.4	4395.0	4111.8	3965.5	4289.4	4398.2	4437.1	4315.0	4622.2	4485.9
52°	4073.6	3919.1	4051.3	3725.2	3639.0	3841.8	4033.8	4206.5	4070.3	4315.9	4200.8
53°	3734.9	3581.1	3652.7	3324.5	3267.8	3497.3	3651.3	3791.8	3712.5	3967.7	3851.6
54°	3364.2	3217.1	3289.9	2924.9	3030.3	3153.6	3267.8	3417.0	3264.3	3607.9	3483.9
55°	2993.9	2898.7	2927.4	2759.4	2845.0	2923.7	2953.4	3043.6	2932.2	3215.9	3116.9
56°	2782.2	2708.0	2756.8	2668.7	2689.9	2781.9	2807.6	2847.9	2755.5	2904.7	2880.6
57°	2599.2	2597.3	2624.1	2489.6	2521.7	2623.3	2671.1	2690.2	2620.9	2700.2	2702.0
58°	2444.7	2424.0	2432.0	2258.0	2331.5	2408.9	2502.4	2556.2	2480.7	2590.4	2559.1
59°	2267.2	2224.7	2250.1	2070.7	2140.1	2219.1	2321.9	2361.3	2293.5	2433.3	2428.6
60°	2091.6	2046.7	2075.4	1936.8	1974.0	2060.4	2126.9	2161.4	2101.1	2224.9	2229.9
61°	1926.1	1887.1	1912.9	1794.4	1836.9	1893.2	1958.7	2005.3	1926.6	2051.1	2070.3
62°	1779.0	1743.9	1772.5	1647.2	1706.8	1753.5	1811.6	1869.3	1785.5	1909.5	1910.5
63°	1634.7	1614.8	1643.5	1522.3	1563.0	1614.5	1666.5	1736.0	1635.8	1790.0	1763.0
64°	1521.8	1492.2	1506.0	1395.5	1446.2	1511.0	1533.4	1593.5	1511.6	1646.6	1625.4
65°	1412.9	1344.9	1358.4	1302.7	1329.8	1383.0	1424.3	1470.9	1405.9	1503.4	1500.4
66°	1300.6	1243.3	1247.2	1205.8	1220.1	1273.7	1315.5	1353.1	1300.4	1394.1	1391.7
67°	1200.8	1152.4	1162.9	1100.2	1119.5	1162.2	1213.6	1247.1	1204.0	1284.8	1286.4
68°	1098.5	1062.0	1088.2	1014.9	1020.7	1063.4	1118.9	1145.7	1108.6	1181.8	1181.2
69°	1014.7	973.8	995.4	924.3	935.1	972.5	1025.6	1049.3	1011.2	1083.0	1086.7
70°	933.0	895.0	911.6	844.4	859.3	892.4	945.4	967.7	928.0	998.5	1006.7
71°	862.1	827.1	834.9	773.1	793.4	826.0	867.8	889.7	852.7	920.1	929.6
72°	791.7	760.6	779.1	705.1	724.2	757.3	794.6	814.8	781.7	846.9	850.6
73°	726.2	689.3	713.8	644.4	657.7	688.6	720.9	743.1	718.9	776.4	780.7
74°	662.2	630.1	641.4	583.8	597.2	622.7	660.6	677.4	656.7	708.1	717.6
75°	600.4	578.9	580.3	527.5	537.4	566.7	606.5	612.7	596.7	646.0	656.4
76°	543.8	522.0	528.6	473.1	484.1	513.5	552.6	555.1	538.6	592.0	594.8
77°	492.7	472.1	480.0	426.0	434.6	465.3	499.9	503.8	485.2	539.7	543.6
78°	444.1	424.4	433.5	381.7	390.1	417.9	446.7	457.6	435.0	488.3	497.1
79°	402.3	378.6	392.1	343.5	349.3	371.9	402.9	412.0	391.6	441.5	450.2
80°	361.4	337.6	352.0	306.0	309.5	329.8	359.3	369.1	351.2	396.2	404.7
81°	324.0	298.8	313.9	268.6	274.8	293.4	321.3	329.3	314.6	355.0	362.1
82°	286.5	266.1	275.8	234.9	241.2	257.1	282.3	288.5	280.9	318.5	322.4
83°	250.3	233.0	240.6	205.3	210.8	225.0	247.7	255.6	246.0	282.4	282.8
84°	218.1	204.1	209.2	182.6	186.8	198.3	217.5	223.2	215.7	249.6	248.8
85°	192.6	182.8	185.9	164.7	168.5	177.6	193.2	196.9	190.7	219.4	218.3
86°	173.6	165.4	167.3	149.9	152.9	161.0	173.7	176.6	171.4	194.4	193.3
87°	157.1	149.9	151.9	137.5	140.7	147.2	158.7	159.5	154.6	174.4	173.2
88°	143.5	137.4	139.1	127.9	130.7	135.4	143.6	145.7	141.6	158.7	156.9
89°	132.1	128.0	128.8	124.2	126.8	128.0	132.1	133.9	130.7	142.9	143.1



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CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
90°	126.0	123.9	124.5	120.8	123.7	124.1	126.6	127.1	125.6	131.3	131.5

TEST NUMBER: P601068

CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-277V

CANDELA DISTRIBUTION (continued):

	330°	360°
0°	7122.6	7122.6
1°	7043.4	7177.3
2°	7147.9	7092.4
3°	7158.6	7208.2
4°	7070.0	7198.1
5°	7323.2	7187.3
6°	7197.1	7254.2
7°	7245.9	7232.1
8°	7341.8	7232.9
9°	7381.4	7270.5
10°	7288.2	7416.2
11°	7449.9	7366.3
12°	7438.0	7490.6
13°	7534.4	7678.3
14°	7702.1	7700.3
15°	7768.0	7708.0
16°	7862.7	7738.5
17°	7879.8	7792.8
18°	7906.7	7872.2
19°	8032.2	7987.4
20°	8177.0	7913.5
21°	7934.4	8067.0
22°	8065.8	8138.0
23°	8107.9	8058.2
24°	8206.7	8205.6
25°	8180.8	8163.8
26°	8122.7	8038.9
27°	7900.2	8026.2
28°	7944.8	7859.5
29°	7691.7	7894.7
30°	7765.1	7380.9
31°	7477.3	7497.6
32°	7390.1	7562.0
33°	7225.9	7240.7
34°	7207.4	7020.5
35°	7107.2	7135.0
36°	6805.8	7004.1
37°	6679.1	6789.0
38°	6644.9	6664.0
39°	6478.1	6505.1
40°	6340.1	6192.1
41°	6171.9	6282.1
42°	6044.8	6001.8
43°	5908.6	5854.8
44°	5742.1	5789.8

TEST NUMBER: P601068

CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-277V

CANDELA DISTRIBUTION (continued):

	330°	360°
45°	5518.0	5656.3
46°	5553.5	5484.4
47°	5262.9	5214.9
48°	5165.5	5035.7
49°	4898.6	4879.8
50°	4707.1	4578.9
51°	4451.1	4452.5
52°	4185.0	4073.6
53°	3802.3	3734.9
54°	3413.7	3364.2
55°	3042.5	2993.9
56°	2806.0	2782.2
57°	2643.5	2599.2
58°	2535.5	2444.7
59°	2355.9	2267.2
60°	2163.2	2091.6
61°	2008.3	1926.1
62°	1863.3	1779.0
63°	1730.4	1634.7
64°	1603.5	1521.8
65°	1475.3	1412.9
66°	1366.9	1300.6
67°	1253.3	1200.8
68°	1155.3	1098.5
69°	1072.2	1014.7
70°	989.1	933.0
71°	907.0	862.1
72°	829.9	791.7
73°	760.1	726.2
74°	696.3	662.2
75°	637.7	600.4
76°	577.7	543.8
77°	526.1	492.7
78°	480.2	444.1
79°	430.5	402.3
80°	388.7	361.4
81°	345.6	324.0
82°	307.3	286.5
83°	271.5	250.3
84°	239.0	218.1
85°	209.2	192.6
86°	186.9	173.6
87°	168.4	157.1
88°	151.9	143.5
89°	138.9	132.1

TEST NUMBER: P601068
CATALOG NUMBER: UHBS-24-MV-L850-U-CDL-277V

CANDELA DISTRIBUTION (continued):

	330°	360°
90°	129.5	126.0

(END OF REPORT)