

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: NEO-RAY

Report Number: P831217

Luminaire Tested: S123DIP-S1165D1195U850-4F0-1E-UDD-G1

Issue Date: 05/03/2024

Test Information

Test Method: LM-79-2019
Report Number: P831217
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1, G3-1807-864-9)
Test Lab: INNOVATION CENTER
Issue Date: 05/03/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DIP-S1165D1195U850-4F0-1E-UDD-G1
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, GRAZE OPTIC
UPLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: -

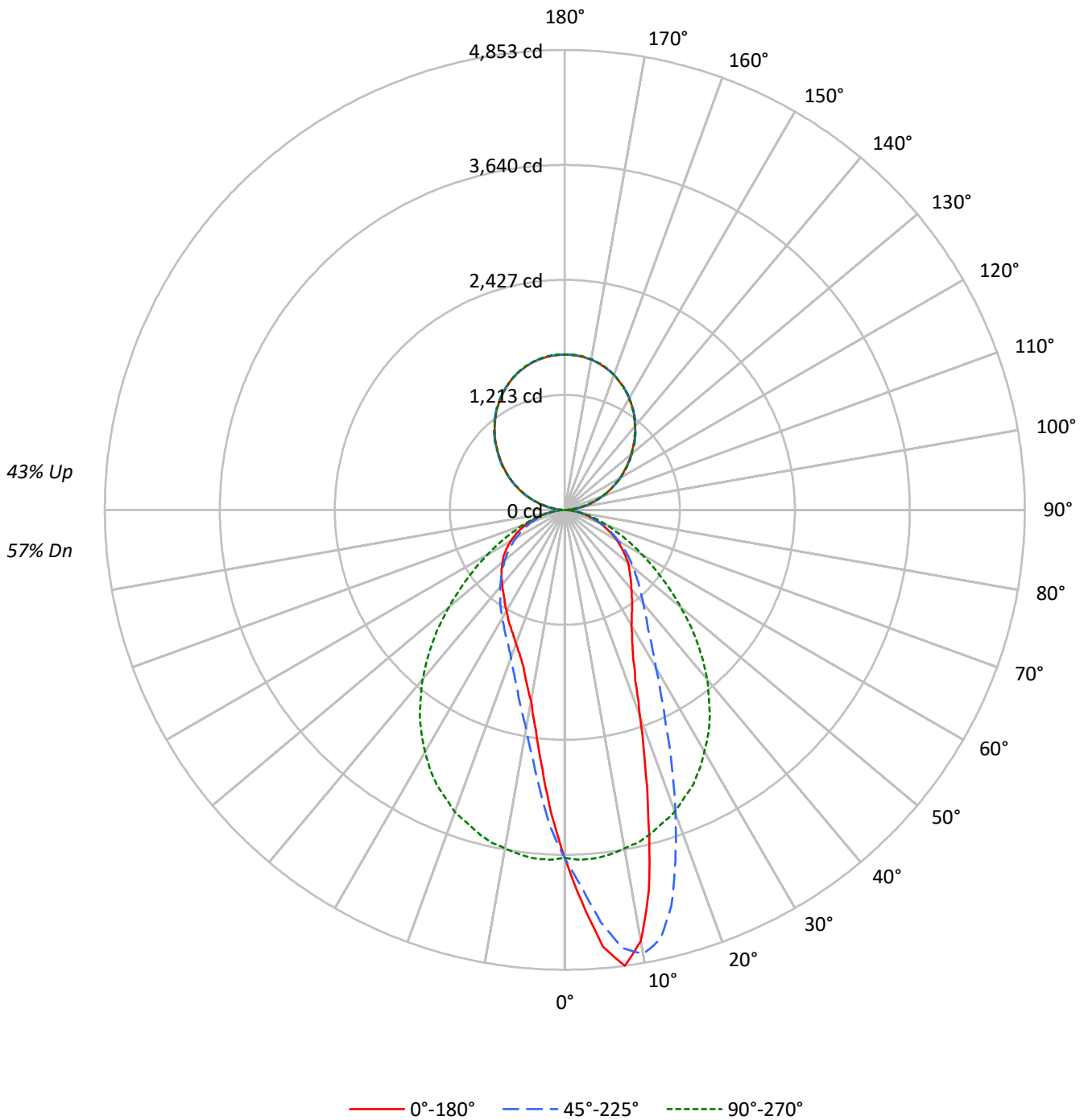
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10453.3 lumens
Efficiency: N/A
Efficacy: 142.8 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: General Diffuse

Input Watts (W): 73.2
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: 24 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	50	30	10	50	30	10	0																
RCR	0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57	57	57	49	49	49	42	42	42	36	36																	
	1	100	96	92	89	93	89	86	83	77	75	73	66	64	63	56	55	54	49	49	49	42	42	42	36	36	36	30	30																	
	2	91	84	78	73	85	79	74	69	68	64	61	59	56	53	50	48	46	42	42	42	36	36	36	30	30	30	24	24																	
	3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	42	40	36	36	36	30	30	30	24	24	24	19	19																	
	4	77	67	59	53	72	63	56	51	55	49	45	47	43	40	41	38	35	32	32	32	26	26	26	21	21	21	16	16																	
	5	71	60	52	46	66	56	49	44	49	44	40	43	39	35	37	34	31	28	28	28	22	22	22	17	17	17	13	13																	
	6	66	54	46	41	61	51	44	39	45	39	35	39	35	32	34	31	28	25	25	25	20	20	20	15	15	15	11	11																	
	7	61	49	42	36	57	46	39	35	41	35	31	36	32	28	31	28	25	23	23	23	18	18	18	14	14	14	10	10																	
	8	57	45	38	32	53	43	36	31	38	32	28	33	29	26	29	26	23	21	21	21	16	16	16	12	12	12	9	9																	
	9	53	41	34	29	50	39	33	28	35	29	26	31	26	23	27	24	21	19	19	19	14	14	14	10	10	10	7	7																	
	10	50	38	31	27	47	36	30	26	32	27	23	29	24	21	25	22	19	18	18	18	13	13	13	9	9	9	6	6																	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	39539	39539	39539	39539	39539
5°	50004	47195	39892	32148	29542
10°	50489	52017	39628	25626	22394
15°	38028	48294	39357	21701	18937
20°	26496	39079	38854	18978	17202
25°	20203	30053	37998	17461	16134
30°	17478	23876	36630	16388	15275
35°	16216	20159	35053	15612	14671
40°	15352	18083	32836	14873	14466
45°	14842	16736	30020	14297	14375
50°	14585	15671	26688	13772	14301
55°	14043	14891	23415	13275	14362
60°	13541	14053	20182	12807	14127
65°	12720	13262	17408	12307	13848
70°	11748	12258	14807	11481	13036
75°	10634	10988	12689	10667	11911
80°	8771	9614	10036	9298	10036
85°	6941	7793	7373	7892	8003

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 34276 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.3	3.3
10°-20°	863.9	8.3
20°-30°	1022.9	9.8
30°-40°	1028.5	9.8
40°-50°	943.7	9.0
50°-60°	778.9	7.5
60°-70°	551.0	5.3
70°-80°	294.1	2.8
80°-90°	78.1	0.7
90°-100°	105.6	1.0
100°-110°	319.6	3.1
110°-120°	544.1	5.2
120°-130°	715.7	6.8
130°-140°	804.5	7.7
140°-150°	790.9	7.6
150°-160°	665.9	6.4
160°-170°	443.3	4.2
170°-180°	155.2	1.5
0°-30°	2234.1	21.4
0°-40°	3262.7	31.2
0°-60°	4985.2	47.7
0°-90°	5908.4	56.5
90°-120°	969.2	9.3
90°-150°	3280.5	31.4
90°-180°	4545.0	43.5
0°-180°	10453.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3673	3673	3673	3673	3673	
5°	4628	4368	3692	2975	2734	441
15°	3412	4334	3532	1947	1699	943
25°	1701	2530	3199	1470	1358	803
35°	1234	1534	2668	1188	1116	775
45°	975	1099	1972	939	944	755
55°	748	794	1248	707	765	670
65°	499	521	684	483	544	496
75°	256	264	305	256	286	269
85°	56	63	60	64	65	63
90°	39	31	1	31	39	22
95°	100	95	76	95	100	101
105°	307	304	290	304	307	325
115°	549	549	548	549	549	544
125°	792	803	802	803	792	709
135°	1039	1046	1040	1046	1039	799
145°	1262	1268	1262	1268	1262	788
155°	1442	1446	1444	1446	1442	664
165°	1568	1569	1573	1569	1568	443
175°	1630	1631	1636	1631	1630	155
180°	1640	1640	1640	1640	1640	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3
2.5°	4140.3	4136.1	4131.8	4110.5	4089.2	4079.0	4068.7	4038.0	4007.4	3973.3	3939.2
5°	4627.8	4639.7	4651.7	4638.0	4624.4	4582.6	4540.9	4485.5	4430.1	4367.9	4305.7
7.5°	4852.8	4859.6	4866.5	4857.9	4849.4	4838.3	4827.2	4777.8	4728.4	4664.5	4600.5
10°	4619.3	4634.6	4650.0	4683.2	4716.5	4754.0	4791.5	4784.6	4777.8	4759.1	4740.3
12.5°	4106.2	4125.0	4143.7	4210.2	4276.7	4361.9	4447.1	4520.4	4593.7	4644.9	4696.0
15°	3412.5	3464.5	3516.5	3577.0	3637.5	3762.8	3888.0	4042.3	4196.6	4333.8	4471.0
17.5°	2810.8	2830.4	2850.0	2914.8	2979.5	3137.2	3294.9	3473.0	3651.1	3878.7	4106.2
20°	2313.1	2331.0	2348.9	2434.1	2519.3	2642.9	2766.5	2966.7	3167.0	3411.6	3656.2
22.5°	1943.2	1971.3	1999.4	2047.1	2094.9	2213.3	2331.8	2509.9	2688.1	2958.2	3228.4
25°	1701.1	1721.6	1742.0	1771.0	1800.0	1894.6	1989.2	2135.8	2282.4	2530.4	2778.4
27.5°	1535.8	1544.3	1552.8	1581.8	1610.8	1672.2	1733.5	1859.6	1985.8	2196.3	2406.8
30°	1406.2	1412.2	1418.2	1443.7	1469.3	1511.1	1552.8	1644.0	1735.2	1921.0	2106.8
32.5°	1315.9	1320.2	1324.4	1344.0	1363.6	1393.5	1423.3	1489.8	1556.2	1709.7	1863.1
35°	1234.1	1236.6	1239.2	1253.7	1268.2	1290.3	1312.5	1362.8	1413.1	1534.1	1655.1
37.5°	1162.5	1165.9	1169.3	1177.8	1186.4	1206.0	1225.6	1265.6	1305.7	1398.6	1491.5
40°	1092.6	1098.6	1104.5	1110.5	1116.5	1132.7	1148.9	1179.5	1210.2	1286.9	1363.6
42.5°	1032.9	1038.9	1044.9	1047.4	1050.0	1059.4	1068.7	1096.9	1125.0	1182.1	1239.2
45°	975.0	977.6	980.1	982.7	985.2	992.9	1000.6	1025.3	1050.0	1099.4	1148.9
47.5°	922.2	922.2	922.2	923.9	925.6	932.4	939.2	957.1	975.0	1013.3	1051.7
50°	871.0	871.0	871.0	868.5	865.9	870.2	874.4	888.1	901.7	935.8	969.9
52.5°	809.7	809.7	809.7	810.5	811.4	811.4	811.4	823.3	835.2	865.9	896.6
55°	748.3	751.7	755.1	752.6	750.0	751.7	753.4	761.1	768.7	793.5	818.2
57.5°	686.9	688.6	690.3	689.5	688.6	689.5	690.3	697.2	704.0	722.7	741.5
60°	629.0	629.0	629.0	627.3	625.6	627.3	629.0	632.4	635.8	652.8	669.9
62.5°	564.2	565.1	565.9	566.8	567.6	565.9	564.2	568.5	572.7	585.5	598.3
65°	499.4	500.3	501.1	503.7	506.2	504.5	502.8	507.1	511.4	520.7	530.1
67.5°	441.5	439.8	438.1	438.9	439.8	442.3	444.9	445.7	446.6	456.8	467.0
70°	373.3	375.0	376.7	375.9	375.0	375.9	376.7	379.3	381.8	389.5	397.2
72.5°	311.9	312.8	313.6	313.6	313.6	315.3	317.0	319.6	322.2	326.4	330.7
75°	255.7	255.7	255.7	257.4	259.1	259.9	260.8	260.8	260.8	264.2	267.6
77.5°	194.3	198.6	202.8	202.0	201.1	202.8	204.5	207.1	209.7	211.4	213.1
80°	141.5	141.5	141.5	142.3	143.2	145.7	148.3	150.0	151.7	155.1	158.5
82.5°	90.3	91.2	92.0	94.6	97.2	98.9	100.6	103.1	105.7	105.7	105.7
85°	56.2	54.5	52.8	54.5	56.2	58.0	59.7	60.5	61.4	63.1	64.8
87.5°	27.3	27.3	27.3	27.3	27.3	28.1	29.0	29.0	29.0	29.0	29.0
90°	38.7	38.1	37.5	36.9	36.4	35.5	34.4	33.2	32.1	30.9	27.2
92.5°	55.4	56.0	56.6	57.1	57.7	57.6	56.7	55.8	55.0	54.1	52.4
95°	100.5	100.5	100.5	100.5	100.5	99.9	98.8	97.6	96.5	95.4	93.1
97.5°	144.3	144.6	144.9	145.2	145.5	144.9	143.5	142.0	140.6	139.2	137.4
100°	195.9	195.3	194.7	194.1	193.6	192.8	192.0	191.1	190.3	189.4	188.0
102.5°	248.7	249.0	249.3	249.5	249.8	249.5	248.7	247.8	247.0	246.1	244.1
105°	306.7	306.1	305.5	305.0	304.4	304.1	304.1	304.1	304.1	304.1	301.5
107.5°	365.9	366.2	366.5	366.8	367.1	366.8	365.9	365.1	364.2	363.4	362.2
110°	426.5	427.1	427.6	428.2	428.8	428.5	427.4	426.2	425.1	423.9	423.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.9	490.9	490.9	490.9	490.9	490.2	488.8	487.3	485.9	484.5	484.5
115°	548.9	549.2	549.5	549.8	550.1	550.1	549.8	549.5	549.2	548.9	549.5
117.5°	608.2	609.0	609.9	610.8	611.6	612.1	612.1	612.1	612.1	612.1	612.6
120°	671.3	671.9	672.5	673.0	673.6	674.0	674.3	674.6	674.9	675.2	676.6
122.5°	731.9	732.7	733.6	734.5	735.3	736.2	737.0	737.9	738.8	739.6	740.2
125°	792.4	793.6	794.7	795.9	797.0	798.2	799.3	800.5	801.6	802.8	803.3
127.5°	853.0	854.1	855.3	856.4	857.6	859.0	860.7	862.5	864.2	865.9	866.5
130°	912.3	914.3	916.3	918.3	920.3	921.9	923.0	924.2	925.3	926.5	927.3
132.5°	974.1	975.6	977.0	978.4	979.9	981.3	982.7	984.1	985.6	987.0	987.6
135°	1038.6	1039.1	1039.7	1040.3	1040.8	1041.7	1042.8	1044.0	1045.1	1046.3	1046.6
137.5°	1095.2	1096.1	1097.0	1097.8	1098.7	1099.8	1101.3	1102.7	1104.1	1105.6	1104.7
140°	1150.7	1152.7	1154.7	1156.7	1158.7	1159.8	1160.1	1160.4	1160.7	1161.0	1160.7
142.5°	1207.3	1208.8	1210.2	1211.6	1213.1	1213.9	1214.2	1214.5	1214.8	1215.1	1214.5
145°	1261.5	1262.6	1263.8	1264.9	1266.0	1266.8	1267.1	1267.3	1267.6	1267.9	1267.1
147.5°	1310.4	1312.1	1313.9	1315.6	1317.3	1318.2	1318.2	1318.2	1318.2	1318.2	1317.3
150°	1356.8	1358.5	1360.3	1362.0	1363.7	1364.5	1364.5	1364.5	1364.5	1364.5	1364.0
152.5°	1401.9	1403.3	1404.8	1406.2	1407.6	1408.1	1407.5	1406.9	1406.4	1405.8	1405.5
155°	1441.9	1443.9	1445.9	1447.9	1449.9	1450.3	1449.2	1448.0	1446.9	1445.7	1445.4
157.5°	1479.2	1480.9	1482.7	1484.4	1486.1	1486.4	1485.2	1484.1	1483.0	1481.8	1481.5
160°	1515.3	1516.5	1517.6	1518.7	1519.9	1519.7	1518.3	1516.9	1515.5	1514.0	1514.0
162.5°	1542.4	1544.4	1546.4	1548.4	1550.4	1550.7	1549.2	1547.8	1546.4	1544.9	1544.7
165°	1568.1	1570.1	1572.1	1574.2	1576.2	1576.3	1574.6	1572.9	1571.1	1569.4	1569.4
167.5°	1591.3	1593.0	1594.8	1596.5	1598.2	1598.2	1596.5	1594.8	1593.0	1591.3	1591.0
170°	1608.1	1610.1	1612.1	1614.1	1616.1	1616.1	1614.1	1612.1	1610.1	1608.1	1608.1
172.5°	1621.0	1623.0	1625.0	1627.0	1629.0	1629.1	1627.4	1625.7	1624.0	1622.3	1622.3
175°	1630.0	1632.0	1634.0	1636.0	1638.0	1638.1	1636.4	1634.7	1633.0	1631.3	1631.3
177.5°	1635.1	1637.1	1639.1	1641.2	1643.2	1643.3	1641.6	1639.9	1638.1	1636.4	1636.4
180°	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3
2.5°	3929.0	3918.7	3881.2	3843.7	3801.1	3758.5	3727.0	3695.4	3648.6	3601.7	3563.3
5°	4257.9	4210.2	4130.9	4051.7	3944.3	3836.9	3764.5	3692.0	3594.9	3497.7	3420.2
7.5°	4518.7	4436.9	4326.1	4215.3	4074.7	3934.1	3801.1	3668.2	3519.9	3371.6	3250.6
10°	4684.9	4629.5	4501.7	4373.8	4185.5	3997.1	3811.3	3625.6	3434.6	3243.7	3083.5
12.5°	4701.1	4706.2	4588.6	4471.0	4257.9	4044.9	3819.0	3593.2	3352.8	3112.5	2925.8
15°	4558.8	4646.6	4581.8	4517.0	4302.3	4087.5	3809.6	3531.8	3254.8	2977.8	2762.2
17.5°	4294.6	4482.9	4492.3	4501.7	4286.9	4072.1	3764.5	3456.8	3143.2	2829.5	2602.8
20°	3934.1	4211.9	4307.4	4402.8	4228.1	4053.4	3722.7	3392.0	3040.9	2689.8	2452.0
22.5°	3565.9	3903.4	4078.1	4252.8	4123.3	3993.7	3641.7	3289.8	2919.0	2548.3	2307.1
25°	3146.6	3514.8	3783.2	4051.7	3972.4	3893.2	3546.3	3199.4	2804.8	2410.2	2163.9
27.5°	2781.0	3155.1	3479.0	3802.8	3785.8	3768.7	3424.4	3080.1	2676.1	2272.1	2034.4
30°	2455.4	2804.0	3166.2	3528.4	3570.2	3611.9	3279.5	2947.1	2542.3	2137.5	1908.2
32.5°	2167.3	2471.6	2860.2	3248.8	3330.7	3412.5	3112.5	2812.5	2411.9	2011.4	1790.6
35°	1931.2	2207.4	2596.0	2984.6	3086.9	3189.2	2928.4	2667.6	2277.3	1886.9	1676.4
37.5°	1722.4	1953.4	2332.7	2711.9	2837.2	2962.5	2729.0	2495.4	2129.8	1764.2	1570.7
40°	1549.4	1735.2	2083.8	2432.4	2577.3	2722.1	2529.5	2336.9	1990.0	1643.2	1465.0
42.5°	1404.5	1569.9	1886.1	2202.3	2341.2	2480.1	2317.3	2154.5	1846.0	1537.5	1374.7
45°	1281.0	1413.1	1700.3	1987.5	2119.6	2251.7	2111.9	1972.1	1700.3	1428.4	1276.7
47.5°	1165.1	1278.4	1523.9	1769.3	1886.9	2004.5	1895.4	1786.4	1556.2	1326.1	1188.9
50°	1061.1	1152.3	1367.0	1581.8	1684.1	1786.4	1690.0	1593.7	1404.5	1215.3	1096.0
52.5°	970.7	1044.9	1224.7	1404.5	1492.3	1580.1	1497.4	1414.8	1264.8	1114.8	1010.8
55°	881.2	944.3	1100.3	1256.2	1315.9	1375.6	1311.6	1247.7	1126.7	1005.7	917.9
57.5°	797.7	854.0	981.8	1109.7	1155.7	1201.7	1143.7	1085.8	994.6	903.4	830.1
60°	715.9	761.9	868.5	975.0	1003.1	1031.2	984.4	937.5	873.6	809.7	744.0
62.5°	640.1	681.8	761.1	840.3	859.1	877.8	842.0	806.2	757.7	709.1	658.0
65°	561.6	593.2	658.0	722.7	734.7	746.6	715.1	683.5	646.9	610.2	572.7
67.5°	489.2	511.4	564.2	617.0	617.9	618.7	593.2	567.6	547.2	526.7	496.9
70°	418.5	439.8	474.7	509.7	510.5	511.4	490.9	470.5	455.1	439.8	417.6
72.5°	346.0	361.4	387.8	414.2	412.5	410.8	398.0	385.2	373.3	361.4	345.2
75°	280.4	293.2	311.1	329.0	323.9	318.7	311.9	305.1	294.9	284.7	274.4
77.5°	220.7	228.4	238.6	248.9	245.5	242.0	236.1	230.1	222.4	214.8	210.5
80°	161.9	165.3	172.2	179.0	177.3	175.6	168.7	161.9	160.2	158.5	152.6
82.5°	109.9	114.2	115.9	117.6	116.8	115.9	110.8	105.7	104.0	102.3	101.4
85°	65.6	66.5	67.3	68.2	65.6	63.1	61.4	59.7	59.7	59.7	58.8
87.5°	29.8	30.7	30.7	30.7	29.8	29.0	27.3	25.6	26.4	27.3	27.3
90°	23.5	19.8	16.0	12.7	9.9	7.0	4.2	1.3	4.2	7.0	9.9
92.5°	50.7	49.0	47.2	45.5	43.8	42.1	40.4	38.7	40.4	42.1	43.8
95°	90.8	88.5	86.2	84.0	82.0	80.0	78.0	76.0	78.0	80.0	82.0
97.5°	135.7	134.0	132.3	130.7	129.3	127.9	126.4	125.0	126.4	127.9	129.3
100°	186.6	185.1	183.7	182.1	180.4	178.7	177.0	175.2	177.0	178.7	180.4
102.5°	242.1	240.1	238.1	236.7	235.8	234.9	234.1	233.2	234.1	234.9	235.8
105°	298.9	296.4	293.8	292.2	291.6	291.1	290.5	289.9	290.5	291.1	291.6
107.5°	361.1	359.9	358.8	358.1	357.8	357.5	357.2	356.9	357.2	357.5	357.8
110°	422.8	422.2	421.6	421.1	420.5	419.9	419.3	418.8	419.3	419.9	420.5



TEST NUMBER: P831217

CATALOG NUMBER: S123DIP-S1165D1195U850-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
112.5°	484.5	484.5	484.5	484.3	484.1	483.8	483.5	483.2	483.5	483.8	484.1
115°	550.1	550.6	551.2	551.1	550.2	549.3	548.5	547.6	548.5	549.3	550.2
117.5°	613.2	613.8	614.3	614.5	614.2	613.9	613.6	613.3	613.6	613.9	614.2
120°	678.1	679.5	680.9	680.8	679.1	677.3	675.6	673.9	675.6	677.3	679.1
122.5°	740.8	741.3	741.9	741.6	740.5	739.3	738.2	737.0	738.2	739.3	740.5
125°	803.9	804.5	805.0	804.9	804.0	803.2	802.3	801.5	802.3	803.2	804.0
127.5°	867.0	867.6	868.2	867.6	865.9	864.2	862.5	860.7	862.5	864.2	865.9
130°	928.2	929.0	929.9	929.2	926.9	924.6	922.3	920.0	922.3	924.6	926.9
132.5°	988.2	988.7	989.3	988.4	986.2	983.9	981.6	979.3	981.6	983.9	986.2
135°	1046.9	1047.1	1047.4	1046.7	1045.0	1043.3	1041.6	1039.8	1041.6	1043.3	1045.0
137.5°	1103.8	1103.0	1102.1	1101.0	1099.5	1098.1	1096.7	1095.2	1096.7	1098.1	1099.5
140°	1160.4	1160.1	1159.8	1159.0	1157.5	1156.1	1154.7	1153.2	1154.7	1156.1	1157.5
142.5°	1213.9	1213.4	1212.8	1211.8	1210.4	1208.9	1207.5	1206.1	1207.5	1208.9	1210.4
145°	1266.2	1265.3	1264.5	1263.8	1263.2	1262.6	1262.0	1261.5	1262.0	1262.6	1263.2
147.5°	1316.4	1315.6	1314.7	1313.7	1312.6	1311.4	1310.3	1309.1	1310.3	1311.4	1312.6
150°	1363.4	1362.8	1362.3	1361.7	1361.1	1360.5	1360.0	1359.4	1360.0	1360.5	1361.1
152.5°	1405.2	1404.9	1404.6	1404.1	1403.2	1402.3	1401.5	1400.6	1401.5	1402.3	1403.2
155°	1445.2	1444.9	1444.6	1444.4	1444.4	1444.4	1444.4	1444.4	1444.4	1444.4	1444.4
157.5°	1481.2	1480.9	1480.7	1480.7	1480.9	1481.2	1481.5	1481.8	1481.5	1481.2	1480.9
160°	1514.0	1514.0	1514.0	1514.3	1514.9	1515.5	1516.0	1516.6	1516.0	1515.5	1514.9
162.5°	1544.4	1544.1	1543.8	1544.1	1544.9	1545.8	1546.7	1547.5	1546.7	1545.8	1544.9
165°	1569.4	1569.4	1569.4	1569.9	1570.7	1571.6	1572.4	1573.3	1572.4	1571.6	1570.7
167.5°	1590.8	1590.5	1590.2	1590.6	1591.8	1592.9	1594.1	1595.2	1594.1	1592.9	1591.8
170°	1608.1	1608.1	1608.1	1608.7	1609.8	1610.9	1612.1	1613.2	1612.1	1610.9	1609.8
172.5°	1622.3	1622.3	1622.3	1622.8	1624.0	1625.1	1626.3	1627.4	1626.3	1625.1	1624.0
175°	1631.3	1631.3	1631.3	1631.8	1633.0	1634.1	1635.3	1636.4	1635.3	1634.1	1633.0
177.5°	1636.4	1636.4	1636.4	1637.0	1638.1	1639.3	1640.4	1641.6	1640.4	1639.3	1638.1
180°	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3	3673.3
2.5°	3525.0	3491.7	3458.5	3432.9	3407.4	3363.9	3320.4	3310.2	3300.0	3285.5	3271.0
5°	3342.6	3260.8	3179.0	3105.7	3032.4	2975.3	2918.2	2880.7	2843.2	2815.9	2788.6
7.5°	3129.5	3006.8	2884.1	2797.1	2710.2	2627.5	2544.9	2518.5	2492.0	2456.2	2420.4
10°	2923.3	2787.8	2652.3	2538.9	2425.6	2344.6	2263.6	2231.2	2198.9	2153.7	2108.5
12.5°	2739.2	2590.9	2442.6	2328.4	2214.2	2135.8	2057.4	2010.5	1963.6	1938.1	1912.5
15°	2546.6	2388.1	2229.5	2123.9	2018.2	1947.4	1876.7	1835.8	1794.9	1770.2	1745.4
17.5°	2376.1	2219.3	2062.5	1961.1	1859.6	1794.9	1730.1	1694.3	1658.5	1639.8	1621.0
20°	2214.2	2060.8	1907.4	1808.5	1709.7	1656.8	1604.0	1581.0	1557.9	1542.6	1527.3
22.5°	2065.9	1915.0	1764.2	1679.8	1595.4	1552.8	1510.2	1494.0	1477.8	1465.0	1452.3
25°	1917.6	1782.9	1648.3	1576.7	1505.1	1470.2	1435.2	1419.0	1402.8	1390.0	1377.3
27.5°	1796.6	1667.9	1539.2	1477.8	1416.5	1389.2	1361.9	1349.1	1336.4	1324.4	1312.5
30°	1679.0	1563.9	1448.9	1396.0	1343.2	1318.5	1293.7	1281.0	1268.2	1257.1	1246.0
32.5°	1569.9	1471.0	1372.2	1323.6	1275.0	1254.5	1234.1	1218.7	1203.4	1194.9	1186.4
35°	1465.9	1377.3	1288.6	1248.6	1208.5	1188.1	1167.6	1154.8	1142.0	1135.2	1128.4
37.5°	1377.3	1298.0	1218.7	1180.4	1142.0	1122.4	1102.8	1091.8	1080.7	1078.1	1075.6
40°	1286.9	1218.7	1150.6	1113.1	1075.6	1058.5	1041.5	1034.7	1027.8	1026.1	1024.4
42.5°	1211.9	1145.4	1079.0	1044.9	1010.8	996.3	981.8	978.4	975.0	977.6	980.1
45°	1125.0	1069.6	1014.2	982.7	951.1	939.2	927.3	924.7	922.2	927.3	932.4
47.5°	1051.7	1000.6	949.4	919.6	889.8	881.2	872.7	871.9	871.0	877.8	884.7
50°	976.7	927.3	877.8	854.0	830.1	822.4	814.8	817.3	819.9	831.0	842.0
52.5°	906.8	860.8	814.8	792.6	770.5	765.3	760.2	766.2	772.2	784.1	796.0
55°	830.1	788.3	746.6	729.5	712.5	707.4	702.3	714.2	726.1	737.2	748.3
57.5°	756.8	720.2	683.5	668.2	652.8	652.0	651.1	662.2	673.3	685.2	697.2
60°	678.4	647.7	617.0	605.1	593.2	594.9	596.6	609.4	622.2	631.5	640.9
62.5°	606.8	581.2	555.7	544.6	533.5	537.8	542.0	554.8	567.6	578.7	589.8
65°	535.2	513.9	492.6	484.9	477.3	483.2	489.2	500.3	511.4	519.0	526.7
67.5°	467.0	449.1	431.2	425.3	419.3	425.3	431.2	442.3	453.4	461.1	468.7
70°	395.5	381.0	366.5	362.2	358.0	364.8	371.6	381.0	390.3	398.0	405.7
72.5°	329.0	317.9	306.8	306.0	305.1	311.1	317.0	326.4	335.8	340.9	346.0
75°	264.2	258.2	252.3	251.4	250.6	256.5	262.5	267.6	272.7	277.0	281.2
77.5°	206.2	201.1	196.0	196.9	197.7	202.0	206.2	211.4	216.5	219.0	221.6
80°	146.6	144.9	143.2	144.9	146.6	150.0	153.4	156.8	160.2	161.9	163.6
82.5°	100.6	98.9	97.2	99.7	102.3	104.8	107.4	109.9	112.5	113.4	114.2
85°	58.0	60.5	63.1	63.1	63.1	63.9	64.8	65.6	66.5	65.6	64.8
87.5°	27.3	28.1	29.0	29.0	29.0	29.8	30.7	30.7	30.7	29.8	29.0
90°	12.7	16.0	19.8	23.5	27.2	30.9	32.1	33.2	34.4	35.5	36.4
92.5°	45.5	47.2	49.0	50.7	52.4	54.1	55.0	55.8	56.7	57.6	57.7
95°	84.0	86.2	88.5	90.8	93.1	95.4	96.5	97.6	98.8	99.9	100.5
97.5°	130.7	132.3	134.0	135.7	137.4	139.2	140.6	142.0	143.5	144.9	145.5
100°	182.1	183.7	185.1	186.6	188.0	189.4	190.3	191.1	192.0	192.8	193.6
102.5°	236.7	238.1	240.1	242.1	244.1	246.1	247.0	247.8	248.7	249.5	249.8
105°	292.2	293.8	296.4	298.9	301.5	304.1	304.1	304.1	304.1	304.1	304.4
107.5°	358.1	358.8	359.9	361.1	362.2	363.4	364.2	365.1	365.9	366.8	367.1
110°	421.1	421.6	422.2	422.8	423.4	423.9	425.1	426.2	427.4	428.5	428.8



TEST NUMBER: P831217

CATALOG NUMBER: S123DIP-S1165D1195U850-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
112.5°	484.3	484.5	484.5	484.5	484.5	484.5	485.9	487.3	488.8	490.2	490.9
115°	551.1	551.2	550.6	550.1	549.5	548.9	549.2	549.5	549.8	550.1	550.1
117.5°	614.5	614.3	613.8	613.2	612.6	612.1	612.1	612.1	612.1	612.1	611.6
120°	680.8	680.9	679.5	678.1	676.6	675.2	674.9	674.6	674.3	674.0	673.6
122.5°	741.6	741.9	741.3	740.8	740.2	739.6	738.8	737.9	737.0	736.2	735.3
125°	804.9	805.0	804.5	803.9	803.3	802.8	801.6	800.5	799.3	798.2	797.0
127.5°	867.6	868.2	867.6	867.0	866.5	865.9	864.2	862.5	860.7	859.0	857.6
130°	929.2	929.9	929.0	928.2	927.3	926.5	925.3	924.2	923.0	921.9	920.3
132.5°	988.4	989.3	988.7	988.2	987.6	987.0	985.6	984.1	982.7	981.3	979.9
135°	1046.7	1047.4	1047.1	1046.9	1046.6	1046.3	1045.1	1044.0	1042.8	1041.7	1040.8
137.5°	1101.0	1102.1	1103.0	1103.8	1104.7	1105.6	1104.1	1102.7	1101.3	1099.8	1098.7
140°	1159.0	1159.8	1160.1	1160.4	1160.7	1161.0	1160.7	1160.4	1160.1	1159.8	1158.7
142.5°	1211.8	1212.8	1213.4	1213.9	1214.5	1215.1	1214.8	1214.5	1214.2	1213.9	1213.1
145°	1263.8	1264.5	1265.3	1266.2	1267.1	1267.9	1267.6	1267.3	1267.1	1266.8	1266.0
147.5°	1313.7	1314.7	1315.6	1316.4	1317.3	1318.2	1318.2	1318.2	1318.2	1318.2	1317.3
150°	1361.7	1362.3	1362.8	1363.4	1364.0	1364.5	1364.5	1364.5	1364.5	1364.5	1363.7
152.5°	1404.1	1404.6	1404.9	1405.2	1405.5	1405.8	1406.4	1406.9	1407.5	1408.1	1407.6
155°	1444.4	1444.6	1444.9	1445.2	1445.4	1445.7	1446.9	1448.0	1449.2	1450.3	1449.9
157.5°	1480.7	1480.7	1480.9	1481.2	1481.5	1481.8	1483.0	1484.1	1485.2	1486.4	1486.1
160°	1514.3	1514.0	1514.0	1514.0	1514.0	1514.0	1515.5	1516.9	1518.3	1519.7	1519.9
162.5°	1544.1	1543.8	1544.1	1544.4	1544.7	1544.9	1546.4	1547.8	1549.2	1550.7	1550.4
165°	1569.9	1569.4	1569.4	1569.4	1569.4	1569.4	1571.1	1572.9	1574.6	1576.3	1576.2
167.5°	1590.6	1590.2	1590.5	1590.8	1591.0	1591.3	1593.0	1594.8	1596.5	1598.2	1598.2
170°	1608.7	1608.1	1608.1	1608.1	1608.1	1608.1	1610.1	1612.1	1614.1	1616.1	1616.1
172.5°	1622.8	1622.3	1622.3	1622.3	1622.3	1622.3	1624.0	1625.7	1627.4	1629.1	1629.0
175°	1631.8	1631.3	1631.3	1631.3	1631.3	1631.3	1633.0	1634.7	1636.4	1638.1	1638.0
177.5°	1637.0	1636.4	1636.4	1636.4	1636.4	1636.4	1638.1	1639.9	1641.6	1643.3	1643.2
180°	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3	1640.3

TEST NUMBER: P831217

CATALOG NUMBER: S123DIP-S1165D1195U850-4F0-1E-UDD-G1

CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	3673.3	3673.3	3673.3	3673.3
2.5°	3265.0	3259.1	3235.2	3211.3
5°	2768.2	2747.7	2740.9	2734.1
7.5°	2418.7	2417.0	2381.2	2345.4
10°	2111.1	2113.6	2081.2	2048.9
12.5°	1891.2	1869.9	1867.3	1864.8
15°	1725.8	1706.2	1702.8	1699.4
17.5°	1609.1	1597.2	1593.7	1590.3
20°	1520.4	1513.6	1507.7	1501.7
22.5°	1443.7	1435.2	1430.1	1425.0
25°	1369.6	1361.9	1360.2	1358.5
27.5°	1303.1	1293.7	1293.7	1293.7
30°	1240.1	1234.1	1231.5	1229.0
32.5°	1181.2	1176.1	1176.1	1176.1
35°	1125.8	1123.3	1119.9	1116.5
37.5°	1075.6	1075.6	1073.9	1072.2
40°	1027.0	1029.5	1029.5	1029.5
42.5°	982.7	985.2	985.2	985.2
45°	936.6	940.9	942.6	944.3
47.5°	891.5	898.3	900.0	901.7
50°	847.2	852.3	853.1	854.0
52.5°	802.0	808.0	812.2	816.5
55°	754.3	760.2	762.8	765.3
57.5°	703.1	709.1	709.9	710.8
60°	646.9	652.8	654.5	656.2
62.5°	593.2	596.6	598.3	600.0
65°	531.8	536.9	540.3	543.7
67.5°	473.0	477.3	477.3	477.3
70°	407.4	409.1	411.6	414.2
72.5°	346.9	347.7	347.7	347.7
75°	283.0	284.7	285.5	286.4
77.5°	222.4	223.3	223.3	223.3
80°	162.8	161.9	161.9	161.9
82.5°	111.6	109.1	109.1	109.1
85°	63.9	63.1	63.9	64.8
87.5°	29.0	29.0	29.0	29.0
90°	36.9	37.5	38.1	38.7
92.5°	57.1	56.6	56.0	55.4
95°	100.5	100.5	100.5	100.5
97.5°	145.2	144.9	144.6	144.3
100°	194.1	194.7	195.3	195.9
102.5°	249.5	249.3	249.0	248.7
105°	305.0	305.5	306.1	306.7
107.5°	366.8	366.5	366.2	365.9
110°	428.2	427.6	427.1	426.5



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
112.5°	490.9	490.9	490.9	490.9
115°	549.8	549.5	549.2	548.9
117.5°	610.8	609.9	609.0	608.2
120°	673.0	672.5	671.9	671.3
122.5°	734.5	733.6	732.7	731.9
125°	795.9	794.7	793.6	792.4
127.5°	856.4	855.3	854.1	853.0
130°	918.3	916.3	914.3	912.3
132.5°	978.4	977.0	975.6	974.1
135°	1040.3	1039.7	1039.1	1038.6
137.5°	1097.8	1097.0	1096.1	1095.2
140°	1156.7	1154.7	1152.7	1150.7
142.5°	1211.6	1210.2	1208.8	1207.3
145°	1264.9	1263.8	1262.6	1261.5
147.5°	1315.6	1313.9	1312.1	1310.4
150°	1362.0	1360.3	1358.5	1356.8
152.5°	1406.2	1404.8	1403.3	1401.9
155°	1447.9	1445.9	1443.9	1441.9
157.5°	1484.4	1482.7	1480.9	1479.2
160°	1518.7	1517.6	1516.5	1515.3
162.5°	1548.4	1546.4	1544.4	1542.4
165°	1574.2	1572.1	1570.1	1568.1
167.5°	1596.5	1594.8	1593.0	1591.3
170°	1614.1	1612.1	1610.1	1608.1
172.5°	1627.0	1625.0	1623.0	1621.0
175°	1636.0	1634.0	1632.0	1630.0
177.5°	1641.2	1639.1	1637.1	1635.1
180°	1640.3	1640.3	1640.3	1640.3

TEST NUMBER: P831217

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	16.93	17.81	17.84	18.73	19.91	19.17	20.05	20.08	20.97	22.15
	3H	18.58	19.37	19.50	20.30	21.50	20.60	21.38	21.51	22.31	23.52
	4H	19.16	19.91	20.09	20.84	22.05	21.05	21.79	21.98	22.73	23.94
	6H	19.53	20.22	20.48	21.16	22.38	21.32	22.01	22.27	22.95	24.18
	8H	19.63	20.28	20.58	21.24	22.46	21.39	22.04	22.34	23.00	24.22
	12H	19.67	20.30	20.63	21.25	22.49	21.41	22.03	22.36	22.98	24.23
4H	2H	17.51	18.26	18.45	19.19	20.40	19.34	20.08	20.27	21.02	22.23
	3H	19.34	19.96	20.29	20.93	22.15	20.96	21.58	21.90	22.54	23.77
	4H	20.04	20.61	21.00	21.57	22.82	21.54	22.11	22.50	23.07	24.32
	6H	20.52	21.00	21.49	21.99	23.24	21.95	22.43	22.92	23.42	24.67
	8H	20.65	21.11	21.63	22.08	23.35	22.06	22.51	23.03	23.49	24.75
	12H	20.72	21.13	21.71	22.12	23.39	22.10	22.51	23.10	23.51	24.78
8H	4H	20.31	20.76	21.28	21.74	23.00	21.65	22.10	22.62	23.08	24.34
	6H	20.90	21.27	21.90	22.29	23.55	22.15	22.53	23.15	23.55	24.81
	8H	21.10	21.44	22.11	22.44	23.72	22.33	22.66	23.34	23.67	24.95
	12H	21.23	21.52	22.24	22.52	23.85	22.43	22.72	23.44	23.72	25.05
12H	4H	20.31	20.72	21.30	21.71	22.98	21.62	22.03	22.62	23.03	24.30
	6H	20.95	21.28	21.95	22.29	23.57	22.17	22.50	23.17	23.50	24.78
	8H	21.18	21.47	22.19	22.47	23.80	22.37	22.66	23.38	23.66	24.99