

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P646659

Luminaire Tested: S123RDRP-S1000D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646659
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-S1000D835-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

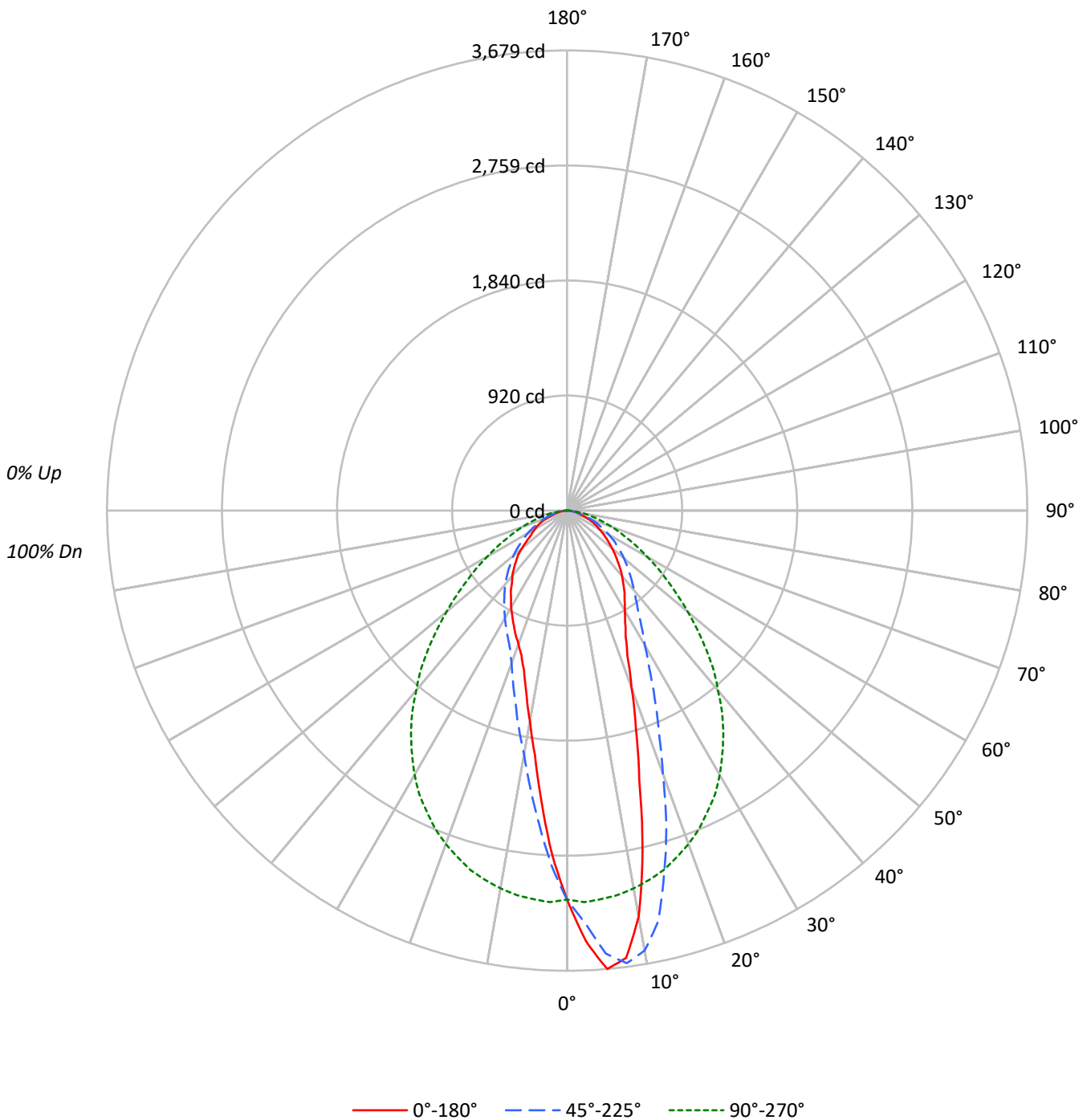
Lumens per Lamp: N/A
Luminaire Lumens: 4120.7 lumens
Efficiency: N/A
Efficacy: 119.4 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 34.5
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

TEST NUMBER: P646659

CATALOG NUMBER: S123RDRP-S1000D835-X4F0-XX-UDD-G-W

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78				76	
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69				67	
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61				59	
5	82	70	62	56	80	69	62	56	67	61	56	65	60	55	63	58	54				53	
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	59	53	49				47	
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45				43	
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41				39	
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38				36	
10	60	47	40	36	58	47	40	35	46	40	35	45	39	35	44	39	35				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	37477	37477	37477	37477	37477
5°	44499	42988	37713	30586	28304
10°	40317	43688	37525	24216	20955
15°	27759	37415	37128	19885	16576
20°	19312	28698	36382	16663	14569
25°	14716	22023	35299	14886	13428
30°	12810	17316	33941	13839	12437
35°	11762	14575	32019	12906	11537
40°	10732	13079	29506	12115	10712
45°	9692	11974	26794	11257	9887
50°	8797	11116	23595	10471	8868
55°	7955	10207	20520	9565	7609
60°	7131	9280	17823	8757	7191
65°	6580	8254	15345	7781	6800
70°	5348	7053	13387	7053	5527
75°	4688	5698	11341	5875	4870
80°	4247	4781	9291	4954	4600
85°	3885	4051	7051	4410	4230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 28271 cd/sqm



TEST NUMBER: P646659

CATALOG NUMBER: S123RDRP-S1000D835-X4F0-XX-UDD-G-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	283.5	6.9
10°-20°	655.9	15.9
20°-30°	752.5	18.3
30°-40°	741.2	18.0
40°-50°	653.3	15.9
50°-60°	502.8	12.2
60°-70°	330.6	8.0
70°-80°	160.5	3.9
80°-90°	40.5	1.0
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°	1691.8	41.1
0°-40°	2433.0	59.0
0°-60°	3589.1	87.1
0°-90°	4120.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4120.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3110	3110	3110	3110	3110	
5°	3679	3554	3118	2529	2340	336
15°	2225	2999	2976	1594	1329	628
25°	1107	1656	2655	1120	1010	523
35°	800	991	2177	877	784	498
45°	569	703	1572	661	580	442
55°	379	486	977	455	362	340
65°	231	290	538	273	238	226
75°	101	122	244	126	105	108
85°	28	29	51	32	31	32
90°	0	0	0	0	0	



TEST NUMBER: P646659

CATALOG NUMBER: S123RDRP-S1000D835-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3
2.5°	3447.0	3425.3	3418.9	3411.3	3398.5	3352.6	3300.3	3305.4	3299.1	3259.5	3237.9
5°	3679.1	3681.6	3675.3	3670.2	3648.5	3592.4	3554.1	3531.2	3482.7	3408.7	3385.8
7.5°	3607.7	3648.5	3656.1	3665.1	3676.5	3663.8	3649.8	3640.8	3601.3	3521.0	3484.0
10°	3295.2	3292.7	3338.6	3375.6	3475.0	3545.2	3570.7	3607.7	3640.8	3584.7	3543.9
12.5°	2785.1	2789.0	2939.4	2939.4	3068.2	3246.8	3361.6	3439.3	3582.2	3586.0	3561.8
15°	2225.3	2287.8	2421.7	2449.7	2615.5	2855.3	2999.4	3160.1	3436.8	3523.5	3518.4
17.5°	1827.4	1854.2	1983.0	2020.0	2166.6	2438.3	2637.2	2831.0	3218.7	3401.1	3434.2
20°	1506.1	1530.3	1623.4	1651.4	1799.4	2058.2	2238.1	2447.2	2954.7	3234.0	3292.7
22.5°	1257.4	1304.6	1367.1	1410.4	1494.6	1758.6	1912.9	2113.1	2648.7	3046.6	3115.4
25°	1106.9	1128.6	1182.2	1202.6	1304.6	1479.3	1656.5	1832.5	2377.1	2811.9	2933.1
27.5°	1004.9	1011.3	1050.8	1068.7	1129.9	1291.8	1419.4	1582.6	2100.3	2570.9	2712.5
30°	920.7	932.2	962.8	966.6	1020.2	1135.0	1244.6	1395.1	1858.0	2337.5	2482.9
32.5°	855.7	862.1	887.6	895.2	929.7	1020.2	1109.5	1219.1	1633.6	2094.0	2261.0
35°	799.6	800.9	820.0	830.2	860.8	936.0	990.9	1082.7	1453.8	1892.5	2039.1
37.5°	735.8	744.7	758.8	767.7	794.5	855.7	905.4	976.8	1288.0	1701.2	1837.6
40°	682.3	689.9	706.5	710.3	734.5	790.7	831.5	895.2	1145.2	1517.5	1656.5
42.5°	628.7	633.8	650.4	658.0	684.8	729.4	766.4	816.2	1031.7	1354.3	1490.8
45°	568.8	581.5	599.4	603.2	628.7	674.6	702.7	748.6	929.7	1212.8	1333.9
47.5°	519.0	525.4	540.7	547.1	576.4	617.2	646.6	686.1	841.7	1084.0	1202.6
50°	469.3	471.8	485.9	494.8	517.8	564.9	593.0	628.7	761.3	979.4	1062.3
52.5°	422.1	428.5	442.5	448.9	464.2	512.6	538.2	575.1	684.8	872.3	955.2
55°	378.7	382.6	392.8	400.4	418.3	460.4	485.9	517.8	618.5	774.1	846.8
57.5°	337.9	343.0	350.7	357.1	373.6	410.6	436.1	468.0	556.0	684.8	740.9
60°	295.9	302.2	311.2	313.7	329.0	362.2	385.1	413.2	492.2	601.9	651.7
62.5°	265.3	266.5	274.2	278.0	286.9	313.7	337.9	364.7	434.9	521.6	562.4
65°	230.8	234.6	238.5	241.0	248.7	271.6	289.5	309.9	378.7	454.0	482.0
67.5°	195.1	198.9	205.3	207.9	214.2	229.5	244.8	265.3	322.6	386.4	411.9
70°	151.8	151.8	162.0	167.1	177.3	188.7	200.2	218.1	267.8	322.6	341.8
72.5°	123.7	125.0	126.2	126.2	135.2	154.3	160.7	172.2	211.7	264.0	280.6
75°	100.7	102.0	103.3	104.6	105.8	112.2	122.4	132.6	162.0	200.2	215.5
77.5°	80.3	81.6	82.9	82.9	85.4	88.0	90.5	95.6	116.0	144.1	156.9
80°	61.2	62.5	63.8	63.8	65.0	67.6	68.9	71.4	77.8	96.9	103.3
82.5°	44.6	44.6	44.6	45.9	47.2	47.2	49.7	49.7	53.6	58.7	62.5
85°	28.1	28.1	29.3	29.3	29.3	30.6	29.3	30.6	31.9	33.2	35.7
87.5°	12.8	11.5	12.8	12.8	12.8	14.0	14.0	14.0	14.0	15.3	15.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P646659

CATALOG NUMBER: S123RDRP-S1000D835-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3
2.5°	3177.9	3133.3	3058.0	3010.9	2993.0	2938.2	2885.9	2842.5	2820.8	2818.3	2778.8
5°	3240.4	3118.0	2962.4	2832.3	2801.7	2706.1	2582.4	2528.8	2458.7	2430.6	2397.5
7.5°	3291.4	3100.1	2870.6	2674.2	2616.8	2472.7	2314.6	2244.4	2190.9	2106.7	2057.0
10°	3327.1	3067.0	2758.4	2504.6	2423.0	2254.6	2063.3	1979.2	1929.4	1832.5	1793.0
12.5°	3341.1	3024.9	2646.1	2328.6	2257.2	2057.0	1869.5	1782.8	1708.8	1620.8	1582.6
15°	3336.0	2976.4	2531.4	2166.6	2077.4	1874.6	1675.7	1594.1	1525.2	1437.2	1387.5
17.5°	3301.6	2907.6	2406.4	2009.8	1924.3	1715.2	1513.7	1438.5	1377.3	1291.8	1253.6
20°	3244.2	2837.4	2296.7	1867.0	1770.0	1569.8	1379.8	1299.5	1245.9	1200.0	1172.0
22.5°	3165.2	2754.5	2162.8	1725.4	1641.2	1439.8	1257.4	1192.4	1160.5	1123.5	1103.1
25°	3045.3	2655.1	2041.7	1606.8	1522.6	1322.4	1163.0	1119.7	1087.8	1063.6	1041.9
27.5°	2916.5	2559.4	1920.5	1486.9	1407.9	1216.6	1089.1	1055.9	1027.8	997.2	978.1
30°	2767.3	2439.5	1805.8	1381.1	1304.6	1131.1	1025.3	994.7	971.7	938.6	919.5
32.5°	2591.3	2308.2	1698.6	1279.1	1207.7	1057.2	966.6	933.5	914.4	882.5	863.3
35°	2408.9	2176.8	1581.3	1184.7	1119.7	992.1	909.3	877.4	857.0	825.1	806.0
37.5°	2230.4	2036.6	1476.7	1101.8	1043.2	927.1	849.3	822.5	803.4	770.2	747.3
40°	2041.7	1875.9	1374.7	1024.0	969.2	869.7	794.5	770.2	744.7	715.4	692.5
42.5°	1844.0	1734.3	1280.3	955.2	904.2	813.6	739.6	714.1	692.5	658.0	647.8
45°	1659.1	1572.4	1180.9	882.5	841.7	757.5	686.1	660.6	636.3	607.0	596.8
47.5°	1494.6	1414.2	1090.3	818.7	777.9	702.7	632.5	605.7	587.9	564.9	549.6
50°	1325.0	1258.7	990.9	756.2	718.0	644.0	576.4	558.6	538.2	510.1	498.6
52.5°	1166.9	1115.8	909.3	696.3	660.6	594.3	525.4	507.5	488.4	464.2	447.6
55°	1027.8	976.8	816.2	628.7	601.9	539.4	478.2	455.3	440.0	411.9	391.5
57.5°	885.0	860.8	726.9	572.6	547.1	484.6	429.8	411.9	392.8	362.2	341.8
60°	767.7	739.6	644.0	511.4	487.1	434.9	381.3	363.4	345.6	316.3	307.3
62.5°	656.8	636.3	563.7	454.0	433.6	382.6	335.4	318.8	301.0	281.8	275.5
65°	556.0	538.2	483.3	395.3	378.7	334.1	290.8	272.9	261.4	252.5	246.1
67.5°	461.6	451.4	409.4	340.5	327.7	288.2	249.9	235.9	229.5	219.3	214.2
70°	376.2	380.0	341.8	290.8	276.7	244.8	211.7	200.2	192.6	183.6	173.4
72.5°	307.3	306.1	283.1	237.2	227.0	201.5	176.0	168.3	159.4	141.6	130.1
75°	238.5	243.6	221.9	196.4	186.2	160.7	136.5	126.2	117.3	110.9	107.1
77.5°	182.4	184.9	174.7	150.5	141.6	119.9	100.7	95.6	91.8	88.0	86.7
80°	130.1	133.9	123.7	108.4	100.7	82.9	72.7	71.4	70.1	67.6	66.3
82.5°	84.2	89.3	84.2	67.6	63.8	54.8	52.3	52.3	51.0	49.7	48.5
85°	45.9	51.0	48.5	39.5	37.0	34.4	33.2	31.9	31.9	31.9	31.9
87.5°	17.9	24.2	20.4	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P646659

CATALOG NUMBER: S123RDRP-S1000D835-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	3110.3	3110.3	3110.3
2.5°	2769.8	2757.1	2752.0
5°	2388.5	2349.0	2340.1
7.5°	2041.7	2025.1	1970.3
10°	1786.6	1735.6	1712.7
12.5°	1557.1	1509.9	1502.2
15°	1373.4	1340.3	1328.8
17.5°	1252.3	1229.3	1215.3
20°	1163.0	1146.4	1136.2
22.5°	1095.4	1082.7	1075.0
25°	1035.5	1016.4	1010.0
27.5°	974.3	957.7	951.3
30°	916.9	902.9	893.9
32.5°	857.0	840.4	835.3
35°	799.6	789.4	784.3
37.5°	743.5	730.7	723.1
40°	691.2	684.8	681.0
42.5°	644.0	632.5	631.2
45°	594.3	582.8	580.2
47.5°	547.1	536.9	535.6
50°	497.3	483.3	473.1
52.5°	437.4	424.7	415.7
55°	383.8	369.8	362.2
57.5°	339.2	332.8	329.0
60°	304.8	301.0	298.4
62.5°	274.2	270.4	270.4
65°	246.1	242.3	238.5
67.5°	211.7	204.0	202.8
70°	169.6	158.1	156.9
72.5°	128.8	127.5	125.0
75°	107.1	104.6	104.6
77.5°	86.7	84.2	84.2
80°	66.3	65.0	66.3
82.5°	48.5	48.5	47.2
85°	31.9	30.6	30.6
87.5°	15.3	15.3	15.3
90°	0.0	0.0	0.0



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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	17.29	18.75	17.65	19.06	19.37	22.38	23.84	22.75	24.15	24.47
	3H	18.62	19.93	19.00	20.25	20.62	23.66	24.96	24.04	25.29	25.66
	4H	19.02	20.24	19.42	20.59	20.97	24.11	25.33	24.51	25.68	26.06
	6H	19.33	20.45	19.74	20.82	21.21	24.40	25.53	24.81	25.89	26.29
	8H	19.43	20.50	19.86	20.89	21.29	24.48	25.55	24.91	25.94	26.34
	12H	19.50	20.52	19.93	20.90	21.33	24.52	25.54	24.95	25.92	26.35
4H	2H	18.14	19.36	18.54	19.71	20.09	22.42	23.64	22.82	23.99	24.37
	3H	19.61	20.62	20.02	21.02	21.43	23.91	24.92	24.32	25.32	25.73
	4H	20.08	20.98	20.51	21.40	21.84	24.47	25.38	24.90	25.79	26.23
	6H	20.46	21.25	20.92	21.70	22.16	24.91	25.70	25.37	26.14	26.60
	8H	20.59	21.33	21.06	21.77	22.24	25.03	25.76	25.49	26.21	26.68
	12H	20.69	21.35	21.18	21.83	22.30	25.10	25.76	25.59	26.24	26.71
8H	4H	20.46	21.20	20.93	21.64	22.11	24.48	25.21	24.94	25.66	26.12
	6H	20.93	21.54	21.43	22.03	22.51	24.96	25.57	25.46	26.06	26.54
	8H	21.12	21.66	21.63	22.17	22.66	25.13	25.67	25.64	26.18	26.67
	12H	21.28	21.75	21.79	22.25	22.81	25.26	25.73	25.77	26.23	26.79
12H	4H	20.51	21.17	20.99	21.65	22.12	24.45	25.11	24.94	25.59	26.06
	6H	21.00	21.54	21.51	22.05	22.54	24.94	25.48	25.45	25.99	26.48
	8H	21.23	21.71	21.74	22.20	22.77	25.13	25.61	25.65	26.10	26.67