

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: P646664

Luminaire Tested: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646664
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-S1000D935-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

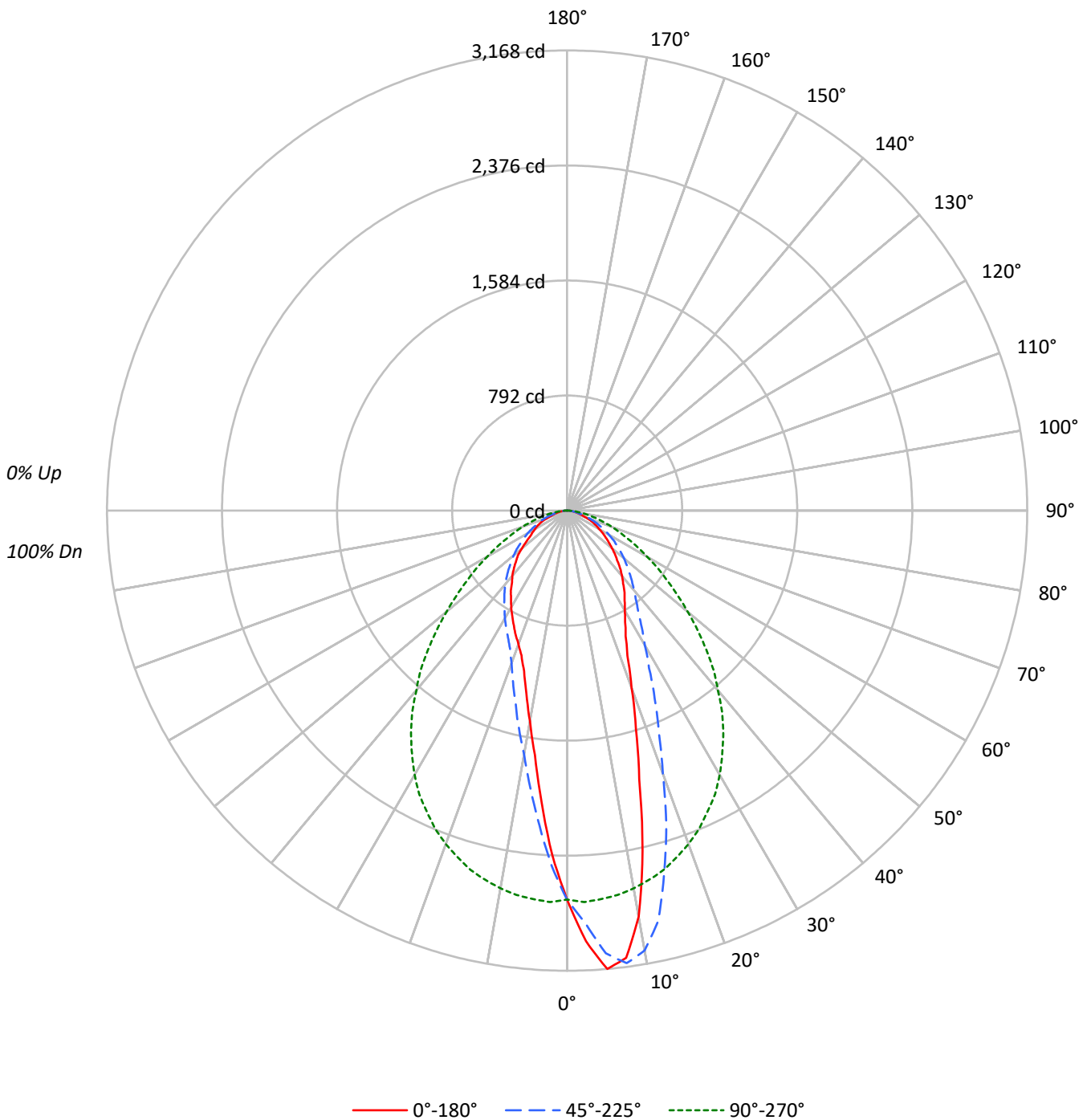
Lumens per Lamp: N/A
Luminaire Lumens: 3547.9 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

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: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

Luminous Intensity Polar Plot





TEST NUMBER: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

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			
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°	32268	32268	32268	32268	32268
5°	38314	37013	32471	26335	24369
10°	34713	37615	32309	20850	18042
15°	23901	32215	31968	17121	14272
20°	16627	24709	31325	14346	12544
25°	12671	18962	30392	12816	11561
30°	11029	14909	29223	11915	10709
35°	10126	12549	27570	11111	9933
40°	9239	11260	25404	10432	9222
45°	8345	10309	23069	9692	8513
50°	7575	9571	20314	9015	7637
55°	6850	8787	17669	8235	6550
60°	6138	7991	15346	7540	6191
65°	5665	7105	13209	6700	5853
70°	4604	6074	11527	6074	4759
75°	4036	4907	9762	5060	4190
80°	3657	4115	8000	4267	3962
85°	3346	3498	6069	3788	3650

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 24342 cd/sqm



TEST NUMBER: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.1	6.9
10°-20°	564.7	15.9
20°-30°	647.9	18.3
30°-40°	638.2	18.0
40°-50°	562.5	15.9
50°-60°	432.9	12.2
60°-70°	284.7	8.0
70°-80°	138.2	3.9
80°-90°	34.9	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°	1456.6	41.1
0°-40°	2094.8	59.0
0°-60°	3090.2	87.1
0°-90°	3547.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3547.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2678	2678	2678	2678	2678	
5°	3168	3060	2685	2177	2015	289
15°	1916	2582	2563	1372	1144	541
25°	953	1426	2286	964	870	450
35°	688	853	1874	755	675	429
45°	490	605	1354	569	500	380
55°	326	418	841	392	312	293
65°	199	249	463	235	205	195
75°	87	105	210	109	90	93
85°	24	25	44	27	26	27
90°	0	0	0	0	0	



TEST NUMBER: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0
2.5°	2967.9	2949.2	2943.7	2937.1	2926.1	2886.6	2841.6	2846.0	2840.5	2806.4	2787.8
5°	3167.7	3169.9	3164.4	3160.0	3141.3	3093.0	3060.1	3040.3	2998.6	2934.9	2915.2
7.5°	3106.2	3141.3	3147.9	3155.6	3165.5	3154.5	3142.4	3134.7	3100.7	3031.5	2999.7
10°	2837.2	2835.0	2874.5	2906.4	2992.0	3052.4	3074.4	3106.2	3134.7	3086.4	3051.3
12.5°	2398.0	2401.3	2530.9	2530.9	2641.8	2795.5	2894.3	2961.3	3084.2	3087.5	3066.7
15°	1916.0	1969.8	2085.1	2109.2	2252.0	2458.4	2582.5	2720.8	2959.1	3033.7	3029.3
17.5°	1573.4	1596.5	1707.4	1739.2	1865.5	2099.3	2270.6	2437.5	2771.3	2928.3	2956.9
20°	1296.7	1317.6	1397.7	1421.9	1549.3	1772.1	1927.0	2107.0	2544.0	2784.5	2835.0
22.5°	1082.6	1123.2	1177.0	1214.4	1286.8	1514.1	1647.0	1819.4	2280.5	2623.1	2682.4
25°	953.1	971.7	1017.8	1035.4	1123.2	1273.7	1426.3	1577.8	2046.6	2421.1	2525.4
27.5°	865.2	870.7	904.7	920.1	972.8	1112.3	1222.1	1362.6	1808.4	2213.5	2335.4
30°	792.7	802.6	829.0	832.3	878.4	977.2	1071.6	1201.2	1599.8	2012.6	2137.8
32.5°	736.7	742.2	764.2	770.8	800.4	878.4	955.2	1049.7	1406.5	1802.9	1946.7
35°	688.4	689.5	706.0	714.8	741.1	805.9	853.1	932.2	1251.7	1629.4	1755.7
37.5°	633.5	641.2	653.3	661.0	684.0	736.7	779.6	841.1	1109.0	1464.7	1582.2
40°	587.4	594.0	608.3	611.6	632.4	680.8	715.9	770.8	986.0	1306.6	1426.3
42.5°	541.3	545.7	560.0	566.6	589.6	628.0	659.9	702.7	888.3	1166.1	1283.5
45°	489.7	500.7	516.1	519.3	541.3	580.8	605.0	644.5	800.4	1044.2	1148.5
47.5°	446.9	452.4	465.5	471.0	496.3	531.4	556.7	590.7	724.7	933.3	1035.4
50°	404.1	406.3	418.3	426.0	445.8	486.4	510.6	541.3	655.5	843.3	914.6
52.5°	363.4	368.9	381.0	386.5	399.7	441.4	463.3	495.2	589.6	751.0	822.4
55°	326.1	329.4	338.2	344.8	360.1	396.4	418.3	445.8	532.5	666.5	729.1
57.5°	291.0	295.4	301.9	307.4	321.7	353.6	375.5	403.0	478.7	589.6	637.9
60°	254.7	260.2	267.9	270.1	283.3	311.8	331.6	355.7	423.8	518.2	561.1
62.5°	228.4	229.5	236.1	239.4	247.0	270.1	291.0	314.0	374.4	449.1	484.2
65°	198.7	202.0	205.3	207.5	214.1	233.9	249.2	266.8	326.1	390.9	415.0
67.5°	168.0	171.3	176.8	179.0	184.5	197.6	210.8	228.4	277.8	332.7	354.6
70°	130.7	130.7	139.4	143.8	152.6	162.5	172.4	187.8	230.6	277.8	294.3
72.5°	106.5	107.6	108.7	108.7	116.4	132.9	138.3	148.2	182.3	227.3	241.6
75°	86.7	87.8	88.9	90.0	91.1	96.6	105.4	114.2	139.4	172.4	185.6
77.5°	69.2	70.3	71.4	71.4	73.6	75.8	78.0	82.3	99.9	124.1	135.1
80°	52.7	53.8	54.9	54.9	56.0	58.2	59.3	61.5	67.0	83.4	88.9
82.5°	38.4	38.4	38.4	39.5	40.6	40.6	42.8	42.8	46.1	50.5	53.8
85°	24.2	24.2	25.3	25.3	25.3	26.4	25.3	26.4	27.4	28.5	30.7
87.5°	11.0	9.9	11.0	11.0	11.0	12.1	12.1	12.1	12.1	13.2	13.2
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: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0	2678.0
2.5°	2736.2	2697.7	2633.0	2592.3	2577.0	2529.8	2484.7	2447.4	2428.7	2426.5	2392.5
5°	2790.0	2684.6	2550.6	2438.6	2412.3	2329.9	2223.4	2177.3	2116.9	2092.8	2064.2
7.5°	2833.9	2669.2	2471.6	2302.5	2253.1	2129.0	1992.8	1932.5	1886.3	1813.9	1771.0
10°	2864.6	2640.7	2374.9	2156.4	2086.2	1941.2	1776.5	1704.1	1661.3	1577.8	1543.8
12.5°	2876.7	2604.4	2278.3	2004.9	1943.4	1771.0	1609.6	1535.0	1471.3	1395.5	1362.6
15°	2872.3	2562.7	2179.5	1865.5	1788.6	1614.0	1442.8	1372.5	1313.2	1237.4	1194.6
17.5°	2842.7	2503.4	2071.9	1730.4	1656.9	1476.8	1303.3	1238.5	1185.8	1112.3	1079.3
20°	2793.3	2443.0	1977.5	1607.5	1524.0	1351.6	1188.0	1118.8	1072.7	1033.2	1009.0
22.5°	2725.2	2371.6	1862.2	1485.6	1413.1	1239.6	1082.6	1026.6	999.2	967.3	949.8
25°	2622.0	2286.0	1757.9	1383.5	1311.0	1138.6	1001.4	964.0	936.6	915.7	897.1
27.5°	2511.1	2203.7	1653.6	1280.3	1212.2	1047.5	937.7	909.1	885.0	858.6	842.2
30°	2382.6	2100.4	1554.7	1189.1	1123.2	973.9	882.8	856.4	836.7	808.1	791.6
32.5°	2231.1	1987.4	1462.5	1101.3	1039.8	910.2	832.3	803.7	787.3	759.8	743.3
35°	2074.1	1874.3	1361.5	1020.0	964.0	854.2	782.9	755.4	737.8	710.4	693.9
37.5°	1920.4	1753.5	1271.5	948.7	898.2	798.2	731.3	708.2	691.7	663.2	643.4
40°	1757.9	1615.1	1183.6	881.7	834.5	748.8	684.0	663.2	641.2	616.0	596.2
42.5°	1587.7	1493.3	1102.4	822.4	778.5	700.5	636.8	614.9	596.2	566.6	557.8
45°	1428.5	1353.8	1016.7	759.8	724.7	652.2	590.7	568.8	547.9	522.6	513.9
47.5°	1286.8	1217.7	938.8	704.9	669.8	605.0	544.6	521.5	506.2	486.4	473.2
50°	1140.8	1083.7	853.1	651.1	618.2	554.5	496.3	480.9	463.3	439.2	429.3
52.5°	1004.7	960.7	782.9	599.5	568.8	511.7	452.4	437.0	420.5	399.7	385.4
55°	885.0	841.1	702.7	541.3	518.2	464.4	411.7	392.0	378.8	354.6	337.1
57.5°	762.0	741.1	625.9	493.0	471.0	417.2	370.0	354.6	338.2	311.8	294.3
60°	661.0	636.8	554.5	440.3	419.4	374.4	328.3	312.9	297.6	272.3	264.6
62.5°	565.5	547.9	485.3	390.9	373.3	329.4	288.8	274.5	259.1	242.7	237.2
65°	478.7	463.3	416.1	340.4	326.1	287.7	250.3	235.0	225.1	217.4	211.9
67.5°	397.5	388.7	352.5	293.2	282.2	248.1	215.2	203.1	197.6	188.9	184.5
70°	323.9	327.2	294.3	250.3	238.3	210.8	182.3	172.4	165.8	158.1	149.3
72.5°	264.6	263.5	243.8	204.2	195.4	173.5	151.5	144.9	137.2	121.9	112.0
75°	205.3	209.7	191.0	169.1	160.3	138.3	117.5	108.7	101.0	95.5	92.2
77.5°	157.0	159.2	150.4	129.6	121.9	103.2	86.7	82.3	79.1	75.8	74.7
80°	112.0	115.3	106.5	93.3	86.7	71.4	62.6	61.5	60.4	58.2	57.1
82.5°	72.5	76.9	72.5	58.2	54.9	47.2	45.0	45.0	43.9	42.8	41.7
85°	39.5	43.9	41.7	34.0	31.8	29.6	28.5	27.4	27.4	27.4	27.4
87.5°	15.4	20.9	17.6	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
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: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	2678.0	2678.0	2678.0
2.5°	2384.8	2373.8	2369.5
5°	2056.5	2022.5	2014.8
7.5°	1757.9	1743.6	1696.4
10°	1538.3	1494.4	1474.6
12.5°	1340.6	1300.0	1293.4
15°	1182.5	1154.0	1144.1
17.5°	1078.2	1058.5	1046.4
20°	1001.4	987.1	978.3
22.5°	943.2	932.2	925.6
25°	891.6	875.1	869.6
27.5°	838.9	824.6	819.1
30°	789.5	777.4	769.7
32.5°	737.8	723.6	719.2
35°	688.4	679.7	675.3
37.5°	640.1	629.1	622.6
40°	595.1	589.6	586.3
42.5°	554.5	544.6	543.5
45°	511.7	501.8	499.6
47.5°	471.0	462.3	461.2
50°	428.2	416.1	407.4
52.5°	376.6	365.6	357.9
55°	330.5	318.4	311.8
57.5°	292.1	286.6	283.3
60°	262.4	259.1	256.9
62.5°	236.1	232.8	232.8
65°	211.9	208.6	205.3
67.5°	182.3	175.7	174.6
70°	146.0	136.2	135.1
72.5°	110.9	109.8	107.6
75°	92.2	90.0	90.0
77.5°	74.7	72.5	72.5
80°	57.1	56.0	57.1
82.5°	41.7	41.7	40.6
85°	27.4	26.4	26.4
87.5°	13.2	13.2	13.2
90°	0.0	0.0	0.0

TEST NUMBER: P646664

CATALOG NUMBER: S123RDRP-S1000D935-X4F0-XX-UDD-G-W

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	16.77	18.22	17.13	18.54	18.85	21.86	23.32	22.23	23.63	23.95
	3H	18.10	19.41	18.48	19.73	20.10	23.14	24.44	23.52	24.77	25.14
	4H	18.50	19.72	18.90	20.07	20.45	23.59	24.81	23.99	25.16	25.54
	6H	18.81	19.93	19.22	20.30	20.69	23.88	25.01	24.29	25.37	25.77
	8H	18.91	19.98	19.34	20.37	20.77	23.96	25.03	24.39	25.42	25.82
	12H	18.98	20.00	19.41	20.38	20.81	24.00	25.02	24.43	25.40	25.83
4H	2H	17.62	18.84	18.02	19.19	19.57	21.90	23.12	22.30	23.47	23.85
	3H	19.09	20.10	19.50	20.50	20.91	23.39	24.40	23.80	24.80	25.21
	4H	19.56	20.46	19.99	20.88	21.32	23.95	24.86	24.38	25.27	25.71
	6H	19.94	20.73	20.40	21.17	21.64	24.39	25.18	24.85	25.62	26.08
	8H	20.07	20.81	20.54	21.25	21.72	24.51	25.24	24.97	25.69	26.16
	12H	20.17	20.83	20.66	21.31	21.78	24.58	25.24	25.07	25.72	26.19
8H	4H	19.94	20.68	20.41	21.12	21.59	23.96	24.69	24.42	25.14	25.60
	6H	20.41	21.02	20.91	21.51	21.99	24.44	25.05	24.94	25.54	26.02
	8H	20.60	21.14	21.11	21.65	22.14	24.61	25.15	25.12	25.66	26.15
	12H	20.76	21.23	21.27	21.73	22.29	24.74	25.21	25.25	25.71	26.27
12H	4H	19.99	20.64	20.47	21.12	21.60	23.93	24.59	24.42	25.07	25.54
	6H	20.48	21.02	20.99	21.53	22.02	24.42	24.96	24.93	25.47	25.96
	8H	20.71	21.19	21.22	21.68	22.25	24.61	25.09	25.13	25.58	26.15