

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: P646663

Luminaire Tested: S123RDRP-S1000D930-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646663
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-S1000D930-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

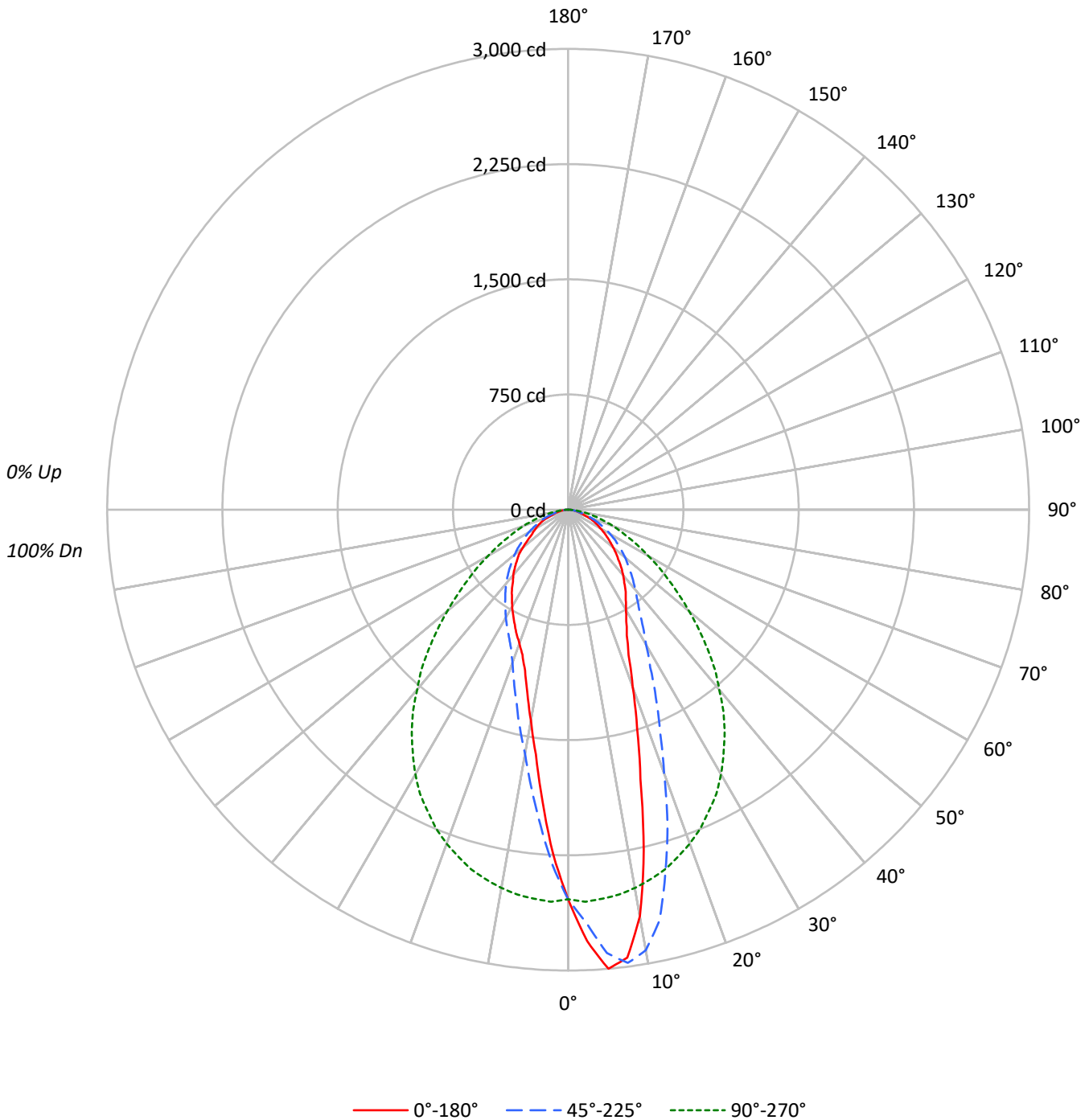
Lumens per Lamp: N/A
Luminaire Lumens: 3359.6 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 34.5
Input Voltage (V): 120
Input Current (A_{in}): 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					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°	30554	30554	30554	30554	30554
5°	36281	35048	30747	24937	23076
10°	32871	35619	30594	19742	17084
15°	22632	30504	30271	16212	13515
20°	15745	23397	29662	13585	11879
25°	11999	17956	28779	12137	10947
30°	10445	14119	27673	11284	10140
35°	9589	11884	26106	10522	9405
40°	8749	10663	24056	9878	8733
45°	7901	9762	21845	9178	8062
50°	7172	9063	19236	8537	7230
55°	6487	8321	16730	7798	6203
60°	5813	7567	14531	7140	5863
65°	5366	6729	12511	6344	5542
70°	4358	5749	10914	5749	4506
75°	3822	4646	9246	4790	3971
80°	3462	3893	7577	4038	3754
85°	3166	3304	5751	3594	3456

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 23050 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	231.1	6.9
10°-20°	534.7	15.9
20°-30°	613.5	18.3
30°-40°	604.3	18.0
40°-50°	532.6	15.9
50°-60°	409.9	12.2
60°-70°	269.5	8.0
70°-80°	130.9	3.9
80°-90°	33.0	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°	1379.3	41.1
0°-40°	1983.6	59.0
0°-60°	2926.2	87.1
0°-90°	3359.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3359.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2536	2536	2536	2536	2536	
5°	3000	2898	2542	2062	1908	274
15°	1814	2445	2427	1300	1083	512
25°	902	1351	2165	913	823	426
35°	652	808	1775	715	639	406
45°	464	573	1282	539	473	360
55°	309	396	796	371	295	277
65°	188	236	439	222	194	184
75°	82	100	199	103	85	88
85°	23	24	42	26	25	26
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8
2.5°	2810.3	2792.7	2787.5	2781.2	2770.8	2733.4	2690.8	2694.9	2689.7	2657.5	2639.8
5°	2999.6	3001.6	2996.4	2992.3	2974.6	2928.9	2897.7	2878.9	2839.4	2779.1	2760.4
7.5°	2941.3	2974.6	2980.8	2988.1	2997.5	2987.1	2975.6	2968.4	2936.1	2870.6	2840.5
10°	2686.6	2684.5	2722.0	2752.1	2833.2	2890.4	2911.2	2941.3	2968.4	2922.6	2889.3
12.5°	2270.7	2273.8	2396.5	2396.5	2501.5	2647.1	2740.7	2804.1	2920.5	2923.7	2903.9
15°	1814.3	1865.2	1974.4	1997.3	2132.4	2327.9	2445.4	2576.4	2802.0	2872.7	2868.6
17.5°	1489.9	1511.7	1616.7	1646.9	1766.5	1987.9	2150.1	2308.1	2624.2	2772.9	2799.9
20°	1227.9	1247.6	1323.5	1346.4	1467.0	1678.1	1824.7	1995.2	2409.0	2636.7	2684.5
22.5°	1025.2	1063.6	1114.6	1149.9	1218.5	1433.8	1559.6	1722.8	2159.5	2483.9	2540.0
25°	902.5	920.1	963.8	980.4	1063.6	1206.1	1350.6	1494.1	1938.0	2292.6	2391.3
27.5°	819.3	824.5	856.7	871.3	921.2	1053.2	1157.2	1290.3	1712.4	2096.0	2211.5
30°	750.7	760.0	785.0	788.1	831.8	925.3	1014.8	1137.4	1514.9	1905.8	2024.3
32.5°	697.6	702.8	723.6	729.9	757.9	831.8	904.5	994.0	1331.9	1707.2	1843.4
35°	651.9	652.9	668.5	676.8	701.8	763.1	807.9	882.7	1185.3	1542.9	1662.5
37.5°	599.9	607.2	618.6	625.9	647.7	697.6	738.2	796.4	1050.1	1387.0	1498.2
40°	556.2	562.5	576.0	579.1	598.9	644.6	677.9	729.9	933.7	1237.3	1350.6
42.5°	512.6	516.7	530.3	536.5	558.3	594.7	624.9	665.4	841.1	1104.2	1215.4
45°	463.7	474.1	488.7	491.8	512.6	550.0	572.9	610.3	757.9	988.8	1087.5
47.5°	423.2	428.4	440.8	446.0	469.9	503.2	527.1	559.4	686.2	883.8	980.4
50°	382.6	384.7	396.1	403.4	422.1	460.6	483.5	512.6	620.7	798.5	866.1
52.5°	344.1	349.3	360.8	366.0	378.5	418.0	438.8	468.9	558.3	711.2	778.7
55°	308.8	311.9	320.2	326.5	341.0	375.3	396.1	422.1	504.3	631.1	690.4
57.5°	275.5	279.7	285.9	291.1	304.6	334.8	355.6	381.6	453.3	558.3	604.1
60°	241.2	246.4	253.7	255.8	268.2	295.3	314.0	336.9	401.3	490.7	531.3
62.5°	216.3	217.3	223.5	226.7	233.9	255.8	275.5	297.4	354.5	425.2	458.5
65°	188.2	191.3	194.4	196.5	202.7	221.5	236.0	252.6	308.8	370.1	393.0
67.5°	159.1	162.2	167.4	169.5	174.7	187.1	199.6	216.3	263.0	315.0	335.8
70°	123.7	123.7	132.0	136.2	144.5	153.9	163.2	177.8	218.3	263.0	278.6
72.5°	100.9	101.9	102.9	102.9	110.2	125.8	131.0	140.4	172.6	215.2	228.7
75°	82.1	83.2	84.2	85.3	86.3	91.5	99.8	108.1	132.0	163.2	175.7
77.5°	65.5	66.5	67.6	67.6	69.7	71.7	73.8	78.0	94.6	117.5	127.9
80°	49.9	50.9	52.0	52.0	53.0	55.1	56.1	58.2	63.4	79.0	84.2
82.5°	36.4	36.4	36.4	37.4	38.5	38.5	40.5	40.5	43.7	47.8	50.9
85°	22.9	22.9	23.9	23.9	23.9	25.0	23.9	25.0	26.0	27.0	29.1
87.5°	10.4	9.4	10.4	10.4	10.4	11.4	11.4	11.4	11.4	12.5	12.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8	2535.8
2.5°	2590.9	2554.6	2493.2	2454.7	2440.2	2395.5	2352.9	2317.5	2299.8	2297.8	2265.5
5°	2641.9	2542.1	2415.2	2309.2	2284.2	2206.3	2105.4	2061.7	2004.6	1981.7	1954.6
7.5°	2683.5	2527.5	2340.4	2180.3	2133.5	2016.0	1887.1	1829.9	1786.2	1717.6	1677.0
10°	2712.6	2500.5	2248.9	2042.0	1975.4	1838.2	1682.2	1613.6	1573.1	1494.1	1461.8
12.5°	2724.0	2466.2	2157.4	1898.5	1840.3	1677.0	1524.2	1453.5	1393.2	1321.5	1290.3
15°	2719.9	2426.7	2063.8	1766.5	1693.7	1528.4	1366.2	1299.6	1243.5	1171.7	1131.2
17.5°	2691.8	2370.5	1961.9	1638.6	1568.9	1398.4	1234.1	1172.8	1122.9	1053.2	1022.0
20°	2645.0	2313.3	1872.5	1522.1	1443.1	1279.9	1125.0	1059.5	1015.8	978.4	955.5
22.5°	2580.6	2245.8	1763.3	1406.7	1338.1	1173.8	1025.2	972.1	946.1	916.0	899.3
25°	2482.8	2164.7	1664.6	1310.0	1241.4	1078.2	948.2	912.9	886.9	867.1	849.4
27.5°	2377.8	2086.7	1565.8	1212.3	1147.8	991.9	887.9	860.9	838.0	813.1	797.5
30°	2256.2	1989.0	1472.2	1126.0	1063.6	922.2	835.9	811.0	792.3	765.2	749.6
32.5°	2112.7	1881.9	1384.9	1042.8	984.6	861.9	788.1	761.1	745.5	719.5	703.9
35°	1964.0	1774.8	1289.2	965.9	912.9	808.9	741.3	715.3	698.7	672.7	657.1
37.5°	1818.4	1660.4	1204.0	898.3	850.5	755.9	692.4	670.6	655.0	628.0	609.3
40°	1664.6	1529.4	1120.8	834.9	790.2	709.1	647.7	628.0	607.2	583.3	564.6
42.5°	1503.4	1414.0	1043.9	778.7	737.2	663.3	603.0	582.2	564.6	536.5	528.2
45°	1352.7	1282.0	962.8	719.5	686.2	617.6	559.4	538.6	518.8	494.9	486.6
47.5°	1218.5	1153.0	888.9	667.5	634.2	572.9	515.7	493.9	479.3	460.6	448.1
50°	1080.3	1026.2	807.9	616.5	585.4	525.1	469.9	455.4	438.8	415.9	406.5
52.5°	951.3	909.7	741.3	567.7	538.6	484.5	428.4	413.8	398.2	378.5	364.9
55°	838.0	796.4	665.4	512.6	490.7	439.8	389.9	371.2	358.7	335.8	319.2
57.5°	721.6	701.8	592.6	466.8	446.0	395.1	350.4	335.8	320.2	295.3	278.6
60°	625.9	603.0	525.1	416.9	397.2	354.5	310.9	296.3	281.8	257.8	250.6
62.5°	535.4	518.8	459.6	370.1	353.5	311.9	273.4	259.9	245.4	229.8	224.6
65°	453.3	438.8	394.0	322.3	308.8	272.4	237.1	222.5	213.1	205.9	200.7
67.5°	376.4	368.1	333.7	277.6	267.2	235.0	203.8	192.3	187.1	178.8	174.7
70°	306.7	309.8	278.6	237.1	225.6	199.6	172.6	163.2	157.0	149.7	141.4
72.5°	250.6	249.5	230.8	193.4	185.1	164.3	143.5	137.2	130.0	115.4	106.1
75°	194.4	198.6	180.9	160.1	151.8	131.0	111.2	102.9	95.7	90.5	87.3
77.5°	148.7	150.8	142.4	122.7	115.4	97.7	82.1	78.0	74.9	71.7	70.7
80°	106.1	109.2	100.9	88.4	82.1	67.6	59.3	58.2	57.2	55.1	54.1
82.5°	68.6	72.8	68.6	55.1	52.0	44.7	42.6	42.6	41.6	40.5	39.5
85°	37.4	41.6	39.5	32.2	30.2	28.1	27.0	26.0	26.0	26.0	26.0
87.5°	14.6	19.8	16.6	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	2535.8	2535.8	2535.8
2.5°	2258.2	2247.8	2243.7
5°	1947.4	1915.1	1907.9
7.5°	1664.6	1651.1	1606.3
10°	1456.6	1415.0	1396.3
12.5°	1269.5	1231.0	1224.8
15°	1119.8	1092.7	1083.4
17.5°	1021.0	1002.3	990.8
20°	948.2	934.7	926.4
22.5°	893.1	882.7	876.5
25°	844.2	828.6	823.4
27.5°	794.3	780.8	775.6
30°	747.5	736.1	728.8
32.5°	698.7	685.2	681.0
35°	651.9	643.6	639.4
37.5°	606.1	595.8	589.5
40°	563.5	558.3	555.2
42.5°	525.1	515.7	514.7
45°	484.5	475.1	473.1
47.5°	446.0	437.7	436.7
50°	405.5	394.0	385.7
52.5°	356.6	346.2	338.9
55°	313.0	301.5	295.3
57.5°	276.6	271.4	268.2
60°	248.5	245.4	243.3
62.5°	223.5	220.4	220.4
65°	200.7	197.5	194.4
67.5°	172.6	166.4	165.3
70°	138.3	128.9	127.9
72.5°	105.0	104.0	101.9
75°	87.3	85.3	85.3
77.5°	70.7	68.6	68.6
80°	54.1	53.0	54.1
82.5°	39.5	39.5	38.5
85°	26.0	25.0	25.0
87.5°	12.5	12.5	12.5
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	16.58	18.04	16.94	18.35	18.66	21.67	23.13	22.04	23.44	23.76
	3H	17.91	19.22	18.29	19.54	19.91	22.95	24.26	23.33	24.58	24.95
	4H	18.31	19.53	18.71	19.88	20.26	23.40	24.62	23.80	24.97	25.35
	6H	18.62	19.74	19.03	20.11	20.50	23.69	24.82	24.11	25.18	25.58
	8H	18.72	19.79	19.15	20.18	20.58	23.77	24.84	24.20	25.23	25.63
	12H	18.79	19.81	19.22	20.19	20.62	23.81	24.83	24.24	25.21	25.64
4H	2H	17.43	18.65	17.83	19.00	19.38	21.71	22.93	22.11	23.28	23.66
	3H	18.90	19.91	19.31	20.31	20.72	23.20	24.21	23.61	24.61	25.02
	4H	19.37	20.27	19.80	20.69	21.13	23.76	24.67	24.19	25.08	25.52
	6H	19.75	20.54	20.21	20.99	21.45	24.20	24.99	24.66	25.43	25.89
	8H	19.88	20.62	20.35	21.06	21.53	24.32	25.05	24.78	25.50	25.97
	12H	19.98	20.64	20.47	21.12	21.59	24.40	25.05	24.88	25.53	26.00
8H	4H	19.75	20.49	20.22	20.93	21.40	23.77	24.50	24.23	24.95	25.41
	6H	20.22	20.83	20.72	21.32	21.80	24.25	24.86	24.75	25.35	25.83
	8H	20.41	20.95	20.92	21.46	21.95	24.42	24.96	24.93	25.47	25.96
	12H	20.57	21.04	21.08	21.54	22.10	24.55	25.02	25.06	25.52	26.08
12H	4H	19.80	20.46	20.28	20.94	21.41	23.74	24.40	24.23	24.88	25.35
	6H	20.29	20.83	20.80	21.34	21.83	24.23	24.77	24.74	25.28	25.77
	8H	20.52	21.00	21.03	21.49	22.06	24.42	24.90	24.94	25.40	25.96