

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: P646637

Luminaire Tested: S123DRP-S340D935-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646637
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DRP-S340D935-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

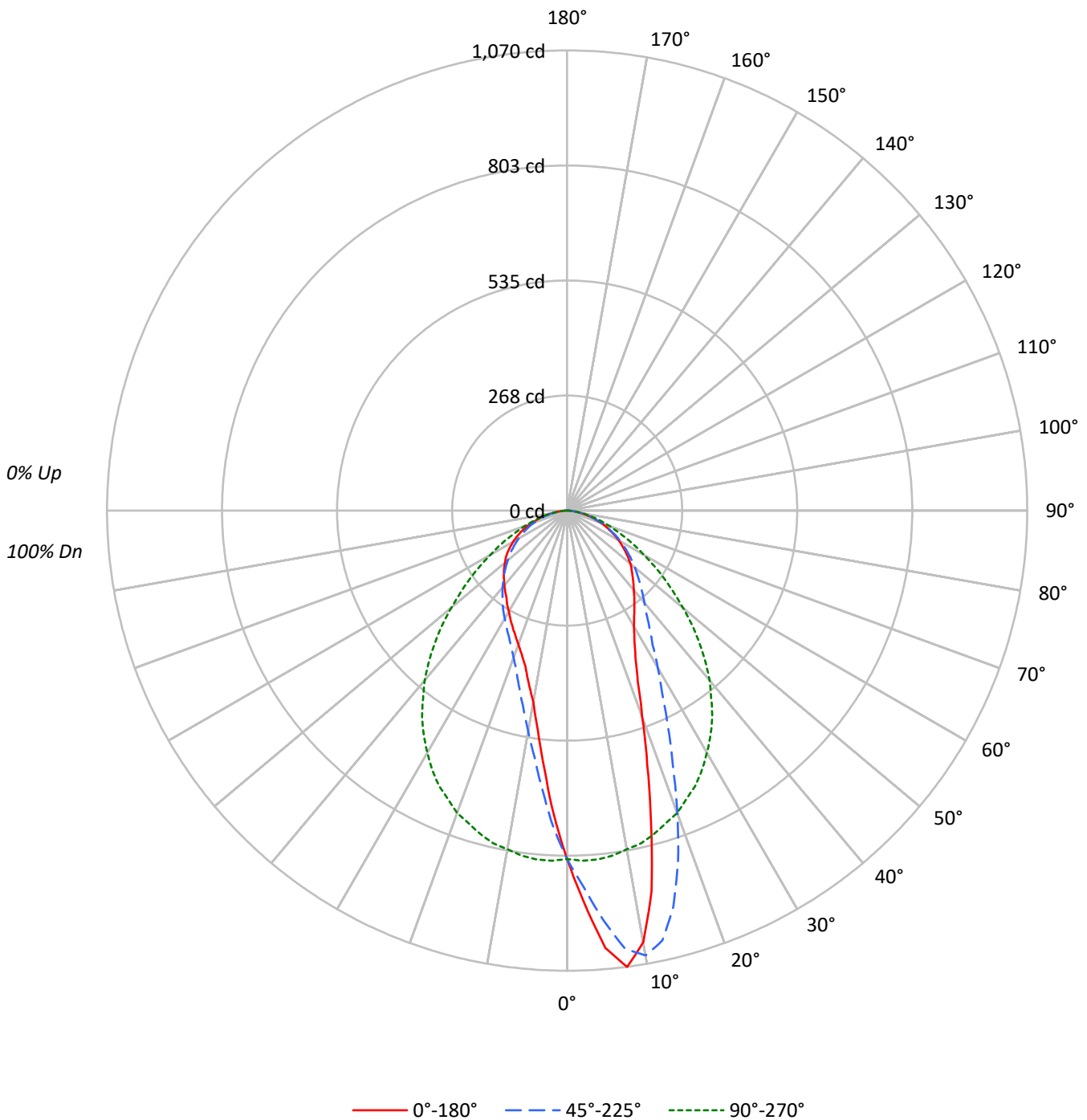
Lumens per Lamp: N/A
Luminaire Lumens: 1301.7 lumens
Efficiency: N/A
Efficacy: 109.4 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 11.9
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: P646637

CATALOG NUMBER: S123DRP-S340D935-X4F0-XX-UDD-G-W

Luminous Intensity Polar Plot





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CATALOG NUMBER: S123DRP-S340D935-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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86				86
2	101	94	88	82	99	92	86	82	88	84	80	85	81	78	82	79	76	74				74
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66	64				64
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56				56
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50				50
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45				45
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40				40
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34				34
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	9761	9761	9761	9761	9761
5°	12346	11545	9849	7898	7293
10°	12465	12852	9783	6379	5529
15°	9388	11893	9716	5346	4675
20°	6541	9617	9592	4661	4247
25°	4988	7377	9381	4273	3983
30°	4314	5863	9044	4038	3770
35°	4004	4910	8653	3848	3621
40°	3791	4393	8107	3673	3572
45°	3664	4081	7412	3517	3549
50°	3601	3854	6589	3382	3530
55°	3466	3641	5781	3262	3546
60°	3342	3444	4984	3142	3487
65°	3139	3227	4297	3011	3418
70°	2899	2995	3657	2847	3220
75°	2626	2714	3133	2607	2942
80°	2165	2325	2477	2269	2477
85°	1714	1866	1825	1977	1977

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 8462 cd/sqm

TEST NUMBER: P646637

CATALOG NUMBER: S123DRP-S340D935-X4F0-XX-UDD-G-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.6	5.9
10°-20°	190.6	14.6
20°-30°	225.6	17.3
30°-40°	226.7	17.4
40°-50°	207.9	16.0
50°-60°	171.6	13.2
60°-70°	121.4	9.3
70°-80°	64.9	5.0
80°-90°	16.5	1.3
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°	492.7	37.9
0°-40°	719.4	55.3
0°-60°	1098.9	84.4
0°-90°	1301.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1301.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	810	810	810	810	810	
5°	1021	954	814	653	603	97
15°	753	953	779	429	375	208
25°	375	555	706	321	300	177
35°	272	334	588	262	246	171
45°	215	240	435	206	208	167
55°	165	173	275	155	169	148
65°	110	113	151	106	120	109
75°	56	58	67	56	63	59
85°	12	14	13	14	14	15
90°	0	0	0	0	0	



TEST NUMBER: P646637

CATALOG NUMBER: S123DRP-S340D935-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1
2.5°	913.1	911.3	901.9	895.8	897.4	883.8	875.5	868.8	864.3	853.4	847.7
5°	1020.7	1025.9	1019.9	1016.9	1001.5	977.0	954.5	949.6	928.6	902.6	893.6
7.5°	1070.3	1073.3	1069.5	1069.5	1064.6	1042.8	1027.0	1014.6	978.6	945.1	929.7
10°	1018.8	1025.5	1040.2	1047.0	1056.7	1053.7	1050.4	1045.5	1021.0	982.3	964.6
12.5°	905.6	913.9	943.2	947.3	980.8	1013.1	1023.7	1035.7	1037.9	1005.2	986.1
15°	752.6	775.5	802.2	815.0	857.5	925.5	953.4	986.1	1024.8	1011.3	996.2
17.5°	619.9	628.6	657.1	684.2	726.7	805.2	856.7	905.6	988.7	1002.2	992.8
20°	510.1	518.0	555.6	553.7	610.1	698.5	750.0	806.4	928.9	972.9	971.0
22.5°	428.6	441.0	462.0	473.7	514.3	592.8	641.7	712.0	860.9	930.4	938.0
25°	375.2	384.2	397.0	407.1	438.7	503.4	554.9	612.8	775.2	874.8	893.6
27.5°	338.7	342.5	355.3	361.3	382.3	438.0	477.8	530.8	695.9	812.4	838.7
30°	310.1	312.8	324.1	325.9	342.5	382.7	421.4	464.7	618.4	748.1	778.2
32.5°	290.2	292.1	300.7	301.5	313.9	343.2	370.3	410.9	545.1	679.3	716.5
35°	272.2	273.3	279.7	281.6	289.5	311.6	333.8	365.0	486.8	617.3	658.3
37.5°	256.4	257.9	261.6	263.9	270.3	288.0	303.0	328.9	430.8	552.6	598.1
40°	241.0	243.6	246.2	246.2	253.4	266.9	279.3	300.7	382.7	496.2	536.5
42.5°	227.8	230.4	231.6	232.0	235.7	248.1	258.6	273.3	346.2	446.2	485.7
45°	215.0	216.2	217.3	218.0	220.7	231.6	239.5	253.4	311.6	400.0	438.3
47.5°	203.4	203.4	204.1	205.3	207.1	215.0	221.8	232.0	281.9	358.6	390.2
50°	192.1	192.1	191.0	191.7	192.9	198.9	205.6	213.9	254.1	320.7	348.9
52.5°	178.6	178.6	178.9	177.8	178.9	184.2	189.5	197.7	230.4	285.7	309.8
55°	165.0	166.5	165.4	164.7	166.2	169.5	173.3	180.4	208.3	257.9	277.1
57.5°	151.5	152.3	151.9	153.0	152.3	155.3	158.6	163.5	188.3	226.7	244.7
60°	138.7	138.7	138.0	138.7	138.7	140.2	142.9	147.7	168.0	200.0	215.0
62.5°	124.4	124.8	125.2	124.8	124.4	126.3	128.6	132.0	150.4	174.1	185.3
65°	110.1	110.5	111.7	111.3	110.9	112.8	113.2	116.9	130.8	151.1	159.4
67.5°	97.4	96.6	97.0	97.7	98.1	98.5	99.2	103.0	112.8	129.3	136.1
70°	82.3	83.1	82.7	83.8	83.1	84.2	85.0	87.6	97.0	107.9	112.4
72.5°	68.8	69.2	69.2	70.3	69.9	71.1	71.8	72.9	79.7	89.5	91.4
75°	56.4	56.4	57.1	57.5	57.5	57.5	58.3	59.0	64.7	70.7	72.6
77.5°	42.9	44.7	44.4	44.7	45.1	46.2	45.5	47.0	50.4	53.8	54.9
80°	31.2	31.2	31.6	32.0	32.7	33.5	33.5	35.0	36.5	38.3	39.5
82.5°	19.9	20.3	21.4	21.8	22.2	23.3	23.3	23.3	25.2	25.9	25.9
85°	12.4	11.7	12.4	12.8	13.2	13.5	13.5	14.3	14.7	15.0	15.0
87.5°	6.0	6.0	6.0	6.0	6.4	6.4	6.4	6.4	6.8	6.8	6.8
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: P646637

CATALOG NUMBER: S123DRP-S340D935-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1	810.1
2.5°	828.9	815.0	794.3	777.4	778.2	762.8	751.5	736.8	732.3	727.8	721.8
5°	846.2	814.3	771.4	737.2	726.7	701.1	668.8	653.0	643.6	627.1	620.7
7.5°	867.7	809.0	743.6	690.2	678.6	636.1	597.7	578.9	561.3	549.6	535.3
10°	881.6	799.6	715.4	644.7	633.4	585.0	535.0	521.4	499.2	485.0	471.4
12.5°	892.1	792.5	686.5	604.1	585.7	538.7	488.3	469.9	453.8	433.1	423.3
15°	901.5	778.9	656.8	561.6	542.5	491.7	445.1	428.6	413.9	395.9	387.2
17.5°	898.1	762.4	624.0	524.0	504.9	454.9	410.1	391.3	381.6	365.8	359.8
20°	894.0	748.1	593.2	488.3	467.3	420.7	377.1	363.5	353.8	343.6	338.3
22.5°	880.8	725.5	562.0	455.6	435.7	389.1	351.9	340.6	333.1	325.9	321.4
25°	858.6	705.6	531.6	422.9	407.1	363.5	331.9	321.4	316.5	309.4	305.3
27.5°	831.2	679.3	501.1	396.2	378.2	339.5	312.4	305.6	300.4	294.7	290.6
30°	796.6	650.0	471.4	370.3	353.8	319.5	296.2	290.2	285.3	279.7	274.8
32.5°	752.6	620.3	443.6	346.2	332.3	302.6	281.2	276.3	272.2	265.4	262.8
35°	703.4	588.3	416.2	323.3	310.1	284.2	266.5	261.6	257.5	251.9	249.6
37.5°	653.4	550.4	389.1	303.8	292.1	268.8	251.9	247.0	243.2	238.3	237.2
40°	600.4	515.4	362.4	283.8	273.7	253.8	237.2	233.5	229.7	226.7	225.9
42.5°	547.0	475.2	339.1	267.3	256.4	238.0	222.9	218.8	216.5	215.0	215.4
45°	496.6	435.0	315.0	248.1	240.6	223.7	209.8	206.4	204.5	203.4	204.9
47.5°	442.1	394.0	292.5	232.0	224.4	209.4	196.2	193.2	192.5	192.1	194.7
50°	394.0	351.5	268.0	215.4	209.0	193.6	183.1	180.4	179.7	180.8	184.6
52.5°	348.5	312.0	245.9	200.0	193.6	179.7	169.9	168.0	167.7	170.3	174.1
55°	303.4	275.2	221.8	183.1	176.7	164.7	157.1	155.3	154.9	160.1	163.5
57.5°	265.0	239.5	199.2	166.9	162.0	150.7	144.0	142.5	143.6	148.5	151.9
60°	227.4	206.8	178.6	149.6	145.9	136.1	130.8	130.4	131.6	137.2	140.6
62.5°	193.6	177.8	156.4	133.8	131.2	122.6	117.7	118.4	119.5	125.2	128.2
65°	164.7	150.7	134.6	118.0	114.7	108.6	105.3	105.6	107.9	112.8	115.8
67.5°	136.5	125.2	116.2	103.0	100.4	95.1	92.5	94.0	95.1	100.0	103.0
70°	112.8	103.8	97.0	87.2	85.3	80.8	78.9	80.8	82.0	86.1	89.8
72.5°	90.6	85.0	79.7	72.6	70.7	67.7	67.3	68.0	69.9	74.1	75.6
75°	70.3	67.3	62.8	58.3	57.1	55.6	55.3	56.0	57.9	60.1	61.7
77.5°	53.4	50.8	47.4	45.5	44.0	43.2	43.6	44.7	45.5	47.7	48.9
80°	38.7	35.7	35.0	32.3	32.0	31.6	32.3	32.7	33.8	35.3	36.1
82.5°	25.6	23.3	22.6	22.2	21.8	21.4	22.6	22.9	23.7	24.8	25.2
85°	13.9	13.2	13.2	12.8	13.2	13.9	13.9	14.3	14.3	14.7	14.3
87.5°	6.4	5.6	6.0	6.0	6.0	6.4	6.4	6.8	6.8	6.8	6.4
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: P646637

CATALOG NUMBER: S123DRP-S340D935-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	810.1	810.1	810.1
2.5°	721.4	718.8	708.3
5°	615.0	606.0	603.0
7.5°	533.8	533.1	517.3
10°	465.0	466.2	451.9
12.5°	421.8	412.4	411.3
15°	385.0	376.3	374.8
17.5°	357.5	352.2	350.7
20°	336.8	333.8	331.2
22.5°	320.3	316.5	314.3
25°	303.8	300.4	299.6
27.5°	289.5	285.3	285.3
30°	274.8	272.2	271.0
32.5°	261.6	259.4	259.4
35°	248.9	247.7	246.2
37.5°	237.2	237.2	236.5
40°	225.9	227.1	227.1
42.5°	216.2	217.3	217.3
45°	205.6	207.5	208.3
47.5°	195.1	198.1	198.9
50°	185.7	188.0	188.3
52.5°	175.6	178.2	180.1
55°	165.0	167.7	168.8
57.5°	153.8	156.4	156.8
60°	141.4	144.0	144.7
62.5°	130.1	131.6	132.3
65°	116.2	118.4	119.9
67.5°	103.4	105.3	105.3
70°	89.5	90.2	91.4
72.5°	76.3	76.7	76.7
75°	62.0	62.8	63.2
77.5°	48.9	49.2	49.2
80°	36.1	35.7	35.7
82.5°	25.2	24.1	24.1
85°	14.3	13.9	14.3
87.5°	6.4	6.4	6.4
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	15.41	16.91	15.77	17.23	17.54	17.86	19.37	18.22	19.68	19.99
	3H	17.10	18.45	17.48	18.78	19.14	19.07	20.43	19.45	20.75	21.12
	4H	17.70	18.97	18.10	19.32	19.70	19.49	20.77	19.89	21.11	21.49
	6H	18.10	19.28	18.52	19.65	20.04	19.77	20.94	20.18	21.31	21.70
	8H	18.21	19.33	18.63	19.71	20.12	19.84	20.95	20.26	21.34	21.75
	12H	18.26	19.33	18.69	19.72	20.14	19.87	20.94	20.30	21.32	21.75
4H	2H	16.05	17.33	16.45	17.67	18.05	18.08	19.35	18.48	19.70	20.08
	3H	17.94	19.00	18.35	19.40	19.80	19.56	20.62	19.97	21.02	21.42
	4H	18.66	19.61	19.09	20.03	20.47	20.13	21.08	20.56	21.50	21.94
	6H	19.17	20.00	19.63	20.44	20.90	20.52	21.35	20.98	21.79	22.25
	8H	19.31	20.08	19.77	20.53	20.99	20.63	21.40	21.09	21.85	22.31
	12H	19.39	20.09	19.88	20.57	21.04	20.69	21.39	21.18	21.86	22.34
8H	4H	18.98	19.76	19.45	20.20	20.67	20.29	21.07	20.76	21.51	21.98
	6H	19.60	20.24	20.10	20.73	21.21	20.79	21.43	21.28	21.92	22.39
	8H	19.80	20.37	20.31	20.88	21.37	20.95	21.52	21.46	22.03	22.52
	12H	19.94	20.44	20.45	20.94	21.50	21.07	21.57	21.58	22.06	22.63
12H	4H	19.02	19.71	19.50	20.19	20.66	20.30	20.99	20.78	21.47	21.94
	6H	19.65	20.23	20.16	20.73	21.22	20.80	21.38	21.32	21.89	22.38
	8H	19.90	20.41	20.41	20.90	21.46	21.01	21.52	21.52	22.01	22.58