

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: P646681

Luminaire Tested: S123RDRP-S340D930-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646681
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-S340D930-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

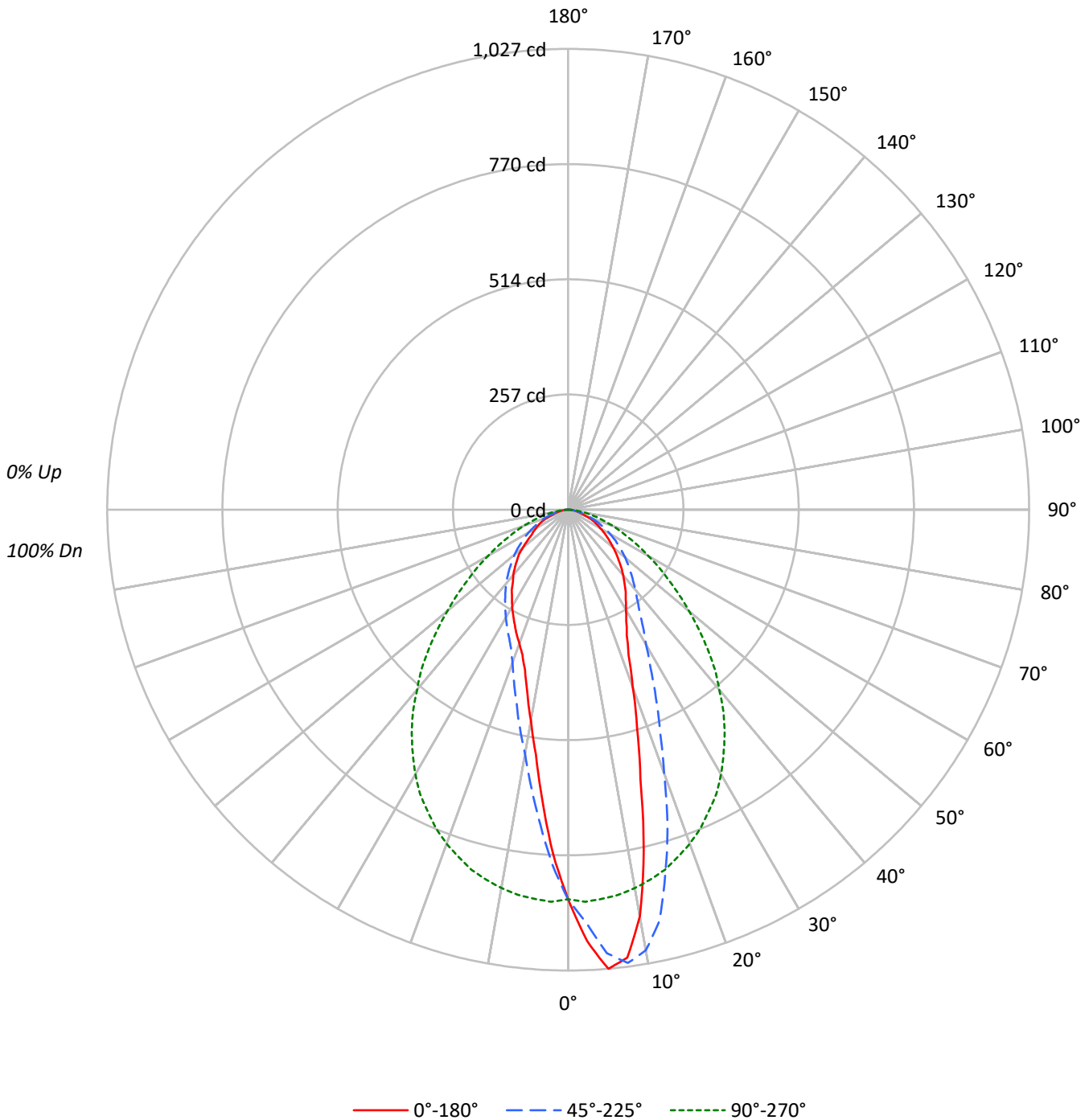
Lumens per Lamp: N/A
Luminaire Lumens: 1150.3 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 11.9
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°	10461	10461	10461	10461	10461
5°	12422	12000	10528	8538	7901
10°	11254	12195	10474	6760	5850
15°	7749	10445	10365	5551	4627
20°	5391	8010	10157	4651	4067
25°	4108	6148	9853	4155	3748
30°	3576	4833	9475	3864	3471
35°	3283	4069	8939	3602	3220
40°	2995	3651	8236	3382	2990
45°	2706	3342	7479	3142	2760
50°	2456	3102	6587	2922	2476
55°	2220	2849	5729	2670	2124
60°	1991	2591	4976	2446	2007
65°	1836	2304	4282	2173	1899
70°	1494	1969	3738	1969	1543
75°	1308	1592	3166	1639	1359
80°	1187	1332	2595	1381	1284
85°	1078	1134	1963	1230	1175

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 7891 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.1	6.9
10°-20°	183.1	15.9
20°-30°	210.0	18.3
30°-40°	206.9	18.0
40°-50°	182.4	15.9
50°-60°	140.3	12.2
60°-70°	92.3	8.0
70°-80°	44.8	3.9
80°-90°	11.3	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°	472.3	41.1
0°-40°	679.2	59.0
0°-60°	1001.9	87.1
0°-90°	1150.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1150.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	868	868	868	868	868	
5°	1027	992	870	706	653	94
15°	621	837	831	445	371	175
25°	309	462	741	312	282	146
35°	223	277	608	245	219	139
45°	159	196	439	184	162	123
55°	106	136	273	127	101	95
65°	64	81	150	76	67	63
75°	28	34	68	35	29	30
85°	8	8	14	9	8	9
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°	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2
2.5°	962.2	956.2	954.4	952.2	948.7	935.9	921.3	922.7	920.9	909.9	903.8
5°	1027.0	1027.7	1025.9	1024.5	1018.5	1002.8	992.1	985.7	972.2	951.5	945.1
7.5°	1007.1	1018.5	1020.6	1023.1	1026.3	1022.7	1018.8	1016.3	1005.3	982.9	972.5
10°	919.8	919.1	932.0	942.3	970.0	989.6	996.7	1007.1	1016.3	1000.7	989.3
12.5°	777.5	778.5	820.5	820.5	856.5	906.3	938.4	960.1	999.9	1001.0	994.2
15°	621.2	638.6	676.0	683.8	730.1	797.0	837.3	882.1	959.4	983.6	982.1
17.5°	510.1	517.6	553.5	563.9	604.8	680.6	736.2	790.3	898.5	949.4	958.7
20°	420.4	427.2	453.2	461.0	502.3	574.5	624.7	683.1	824.8	902.8	919.1
22.5°	351.0	364.2	381.6	393.7	417.2	490.9	534.0	589.9	739.4	850.4	869.7
25°	309.0	315.0	330.0	335.7	364.2	412.9	462.4	511.5	663.5	784.9	818.8
27.5°	280.5	282.3	293.3	298.3	315.4	360.6	396.2	441.8	586.3	717.7	757.2
30°	257.0	260.2	268.8	269.8	284.8	316.8	347.4	389.4	518.7	652.5	693.1
32.5°	238.9	240.6	247.8	249.9	259.5	284.8	309.7	340.3	456.0	584.5	631.2
35°	223.2	223.6	228.9	231.7	240.3	261.3	276.6	302.2	405.8	528.3	569.2
37.5°	205.4	207.9	211.8	214.3	221.8	238.9	252.7	272.7	359.5	474.9	513.0
40°	190.4	192.6	197.2	198.3	205.0	220.7	232.1	249.9	319.7	423.6	462.4
42.5°	175.5	176.9	181.5	183.7	191.2	203.6	213.9	227.8	288.0	378.0	416.1
45°	158.8	162.3	167.3	168.4	175.5	188.3	196.1	209.0	259.5	338.5	372.4
47.5°	144.9	146.7	150.9	152.7	160.9	172.3	180.5	191.5	234.9	302.6	335.7
50°	131.0	131.7	135.6	138.1	144.5	157.7	165.5	175.5	212.5	273.4	296.5
52.5°	117.8	119.6	123.5	125.3	129.6	143.1	150.2	160.5	191.2	243.5	266.6
55°	105.7	106.8	109.6	111.8	116.8	128.5	135.6	144.5	172.6	216.1	236.4
57.5°	94.3	95.8	97.9	99.7	104.3	114.6	121.7	130.6	155.2	191.2	206.8
60°	82.6	84.4	86.9	87.6	91.8	101.1	107.5	115.3	137.4	168.0	181.9
62.5°	74.0	74.4	76.5	77.6	80.1	87.6	94.3	101.8	121.4	145.6	157.0
65°	64.4	65.5	66.6	67.3	69.4	75.8	80.8	86.5	105.7	126.7	134.6
67.5°	54.5	55.5	57.3	58.0	59.8	64.1	68.3	74.0	90.1	107.9	115.0
70°	42.4	42.4	45.2	46.6	49.5	52.7	55.9	60.9	74.8	90.1	95.4
72.5°	34.5	34.9	35.2	35.2	37.7	43.1	44.9	48.1	59.1	73.7	78.3
75°	28.1	28.5	28.8	29.2	29.5	31.3	34.2	37.0	45.2	55.9	60.2
77.5°	22.4	22.8	23.1	23.1	23.9	24.6	25.3	26.7	32.4	40.2	43.8
80°	17.1	17.4	17.8	17.8	18.2	18.9	19.2	19.9	21.7	27.1	28.8
82.5°	12.5	12.5	12.5	12.8	13.2	13.2	13.9	13.9	15.0	16.4	17.4
85°	7.8	7.8	8.2	8.2	8.2	8.5	8.2	8.5	8.9	9.3	10.0
87.5°	3.6	3.2	3.6	3.6	3.6	3.9	3.9	3.9	3.9	4.3	4.3
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°	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2	868.2
2.5°	887.1	874.6	853.6	840.5	835.5	820.2	805.6	793.5	787.4	786.7	775.7
5°	904.5	870.4	826.9	790.6	782.1	755.4	720.9	705.9	686.3	678.5	669.2
7.5°	918.8	865.4	801.3	746.5	730.5	690.2	646.1	626.5	611.6	588.1	574.2
10°	928.7	856.1	770.0	699.1	676.4	629.4	576.0	552.5	538.6	511.5	500.5
12.5°	932.7	844.4	738.7	650.0	630.1	574.2	521.9	497.7	477.0	452.4	441.8
15°	931.2	830.9	706.6	604.8	579.9	523.3	467.8	445.0	425.8	401.2	387.3
17.5°	921.6	811.6	671.7	561.0	537.2	478.8	422.5	401.5	384.5	360.6	349.9
20°	905.6	792.1	641.1	521.2	494.1	438.2	385.2	362.7	347.8	335.0	327.1
22.5°	883.5	768.9	603.7	481.6	458.1	401.9	351.0	332.8	323.9	313.6	307.9
25°	850.1	741.1	569.9	448.5	425.0	369.1	324.7	312.5	303.6	296.9	290.8
27.5°	814.1	714.4	536.1	415.1	393.0	339.6	304.0	294.8	286.9	278.4	273.0
30°	772.5	681.0	504.1	385.5	364.2	315.8	286.2	277.7	271.3	262.0	256.7
32.5°	723.3	644.3	474.2	357.0	337.1	295.1	269.8	260.6	255.2	246.3	241.0
35°	672.4	607.7	441.4	330.7	312.5	277.0	253.8	244.9	239.2	230.3	225.0
37.5°	622.6	568.5	412.2	307.6	291.2	258.8	237.1	229.6	224.3	215.0	208.6
40°	569.9	523.6	383.7	285.9	270.5	242.8	221.8	215.0	207.9	199.7	193.3
42.5°	514.7	484.1	357.4	266.6	252.4	227.1	206.5	199.3	193.3	183.7	180.8
45°	463.1	438.9	329.6	246.3	234.9	211.5	191.5	184.4	177.6	169.4	166.6
47.5°	417.2	394.8	304.4	228.5	217.1	196.1	176.6	169.1	164.1	157.7	153.4
50°	369.9	351.4	276.6	211.1	200.4	179.8	160.9	155.9	150.2	142.4	139.2
52.5°	325.7	311.5	253.8	194.4	184.4	165.9	146.7	141.7	136.3	129.6	124.9
55°	286.9	272.7	227.8	175.5	168.0	150.6	133.5	127.1	122.8	115.0	109.3
57.5°	247.0	240.3	202.9	159.8	152.7	135.3	120.0	115.0	109.6	101.1	95.4
60°	214.3	206.5	179.8	142.7	136.0	121.4	106.4	101.5	96.5	88.3	85.8
62.5°	183.3	177.6	157.3	126.7	121.0	106.8	93.6	89.0	84.0	78.7	76.9
65°	155.2	150.2	134.9	110.4	105.7	93.3	81.2	76.2	73.0	70.5	68.7
67.5°	128.9	126.0	114.3	95.0	91.5	80.5	69.8	65.9	64.1	61.2	59.8
70°	105.0	106.1	95.4	81.2	77.2	68.3	59.1	55.9	53.8	51.3	48.4
72.5°	85.8	85.4	79.0	66.2	63.4	56.2	49.1	47.0	44.5	39.5	36.3
75°	66.6	68.0	61.9	54.8	52.0	44.9	38.1	35.2	32.8	31.0	29.9
77.5°	50.9	51.6	48.8	42.0	39.5	33.5	28.1	26.7	25.6	24.6	24.2
80°	36.3	37.4	34.5	30.3	28.1	23.1	20.3	19.9	19.6	18.9	18.5
82.5°	23.5	24.9	23.5	18.9	17.8	15.3	14.6	14.6	14.2	13.9	13.5
85°	12.8	14.2	13.5	11.0	10.3	9.6	9.3	8.9	8.9	8.9	8.9
87.5°	5.0	6.8	5.7	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
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°	868.2	868.2	868.2
2.5°	773.2	769.6	768.2
5°	666.7	655.7	653.2
7.5°	569.9	565.3	550.0
10°	498.7	484.5	478.1
12.5°	434.6	421.5	419.3
15°	383.4	374.1	370.9
17.5°	349.6	343.2	339.2
20°	324.7	320.0	317.2
22.5°	305.8	302.2	300.1
25°	289.1	283.7	281.9
27.5°	272.0	267.3	265.6
30°	255.9	252.0	249.5
32.5°	239.2	234.6	233.2
35°	223.2	220.4	218.9
37.5°	207.5	204.0	201.8
40°	192.9	191.2	190.1
42.5°	179.8	176.6	176.2
45°	165.9	162.7	162.0
47.5°	152.7	149.9	149.5
50°	138.8	134.9	132.1
52.5°	122.1	118.5	116.0
55°	107.1	103.2	101.1
57.5°	94.7	92.9	91.8
60°	85.1	84.0	83.3
62.5°	76.5	75.5	75.5
65°	68.7	67.6	66.6
67.5°	59.1	57.0	56.6
70°	47.3	44.1	43.8
72.5°	36.0	35.6	34.9
75°	29.9	29.2	29.2
77.5°	24.2	23.5	23.5
80°	18.5	18.2	18.5
82.5°	13.5	13.5	13.2
85°	8.9	8.5	8.5
87.5°	4.3	4.3	4.3
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	12.86	14.31	13.22	14.63	14.94	17.95	19.40	18.31	19.72	20.03
	3H	14.19	15.49	14.57	15.82	16.18	19.23	20.53	19.61	20.86	21.22
	4H	14.59	15.81	14.99	16.16	16.54	19.67	20.89	20.07	21.24	21.62
	6H	14.89	16.02	15.31	16.39	16.78	19.97	21.09	20.38	21.46	21.85
	8H	15.00	16.07	15.42	16.46	16.86	20.04	21.11	20.47	21.50	21.91
	12H	15.06	16.09	15.50	16.47	16.90	20.08	21.11	20.51	21.49	21.92
4H	2H	13.71	14.93	14.11	15.28	15.66	17.99	19.21	18.39	19.56	19.94
	3H	15.18	16.19	15.59	16.59	16.99	19.48	20.49	19.89	20.89	21.29
	4H	15.64	16.55	16.08	16.97	17.41	20.04	20.94	20.47	21.36	21.80
	6H	16.03	16.82	16.49	17.26	17.72	20.48	21.26	20.93	21.71	22.17
	8H	16.16	16.90	16.63	17.34	17.81	20.59	21.33	21.06	21.77	22.24
	12H	16.26	16.91	16.74	17.39	17.87	20.67	21.33	21.15	21.80	22.28
8H	4H	16.03	16.77	16.50	17.21	17.68	20.04	20.78	20.51	21.22	21.69
	6H	16.50	17.11	17.00	17.60	18.08	20.53	21.13	21.03	21.63	22.11
	8H	16.69	17.23	17.20	17.74	18.23	20.69	21.23	21.21	21.75	22.24
	12H	16.84	17.32	17.36	17.82	18.38	20.82	21.30	21.33	21.79	22.36
12H	4H	16.08	16.73	16.56	17.21	17.68	20.02	20.67	20.50	21.15	21.62
	6H	16.56	17.11	17.08	17.62	18.11	20.50	21.05	21.02	21.56	22.05
	8H	16.80	17.28	17.31	17.77	18.34	20.70	21.18	21.21	21.67	22.24