

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: P646680

Luminaire Tested: S123RDRP-S340D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646680
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-S340D927-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

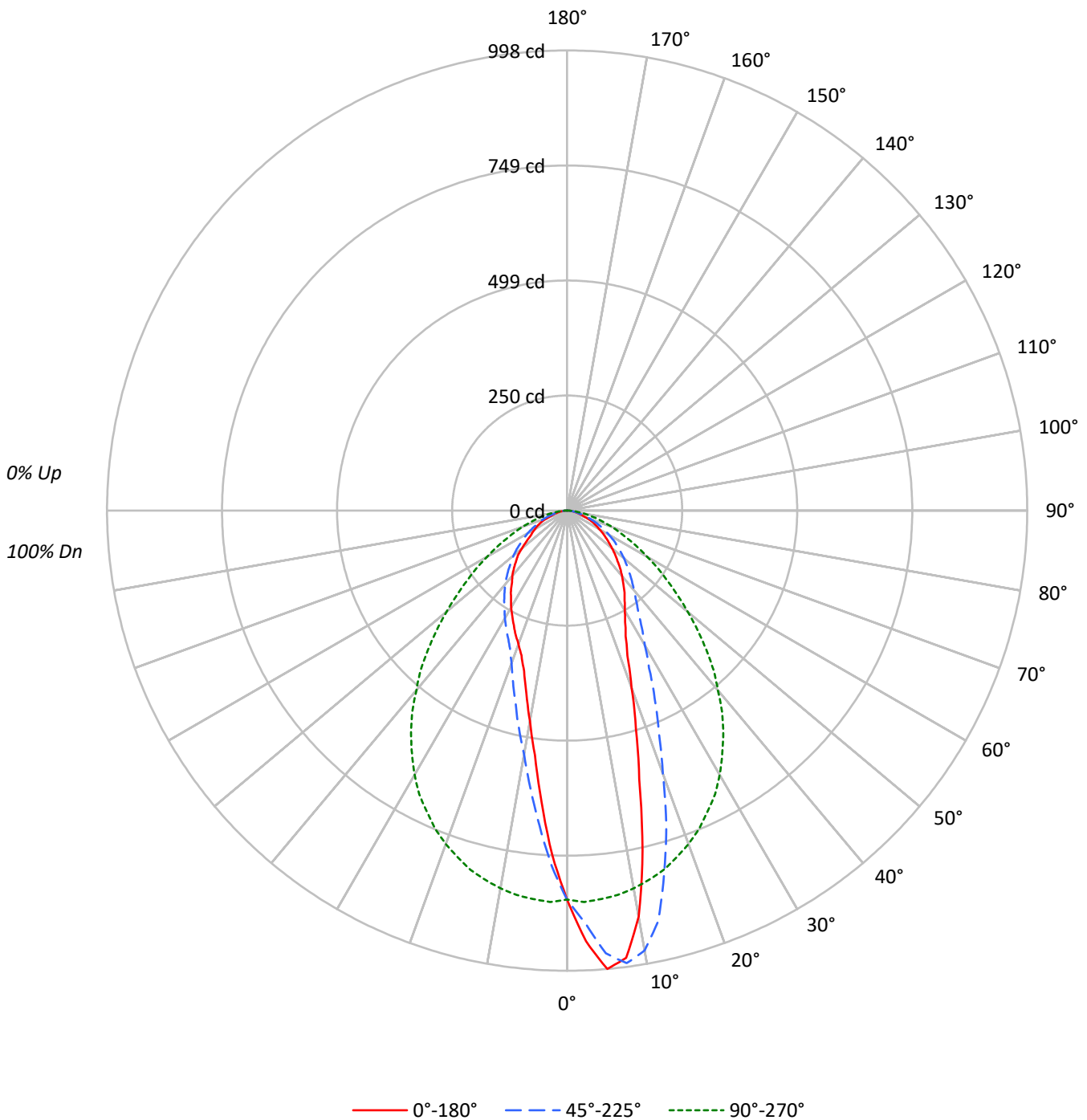
Lumens per Lamp: N/A
Luminaire Lumens: 1117.7 lumens
Efficiency: N/A
Efficacy: 93.9 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 11.9
Input Voltage (V): 120
Input Current (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

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CATALOG NUMBER: S123RDRP-S340D927-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°	10165	10165	10165	10165	10165
5°	12070	11660	10229	8296	7677
10°	10936	11850	10178	6568	5683
15°	7529	10148	10070	5394	4496
20°	5238	7783	9868	4520	3952
25°	3991	5973	9574	4038	3641
30°	3474	4697	9206	3754	3374
35°	3190	3954	8684	3501	3129
40°	2910	3547	8003	3286	2905
45°	2629	3248	7268	3054	2682
50°	2386	3014	6400	2840	2405
55°	2157	2769	5565	2594	2063
60°	1933	2518	4834	2376	1950
65°	1785	2238	4163	2110	1845
70°	1451	1913	3632	1913	1497
75°	1271	1546	3077	1592	1322
80°	1152	1298	2519	1346	1249
85°	1051	1106	1908	1189	1147

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 7668 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.9	6.9
10°-20°	177.9	15.9
20°-30°	204.1	18.3
30°-40°	201.0	18.0
40°-50°	177.2	15.9
50°-60°	136.4	12.2
60°-70°	89.7	8.0
70°-80°	43.5	3.9
80°-90°	11.0	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°	458.9	41.1
0°-40°	659.9	59.0
0°-60°	973.5	87.1
0°-90°	1117.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1117.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	844	844	844	844	844	
5°	998	964	846	686	635	91
15°	604	814	807	432	360	170
25°	300	449	720	304	274	142
35°	217	269	590	238	213	135
45°	154	191	426	179	157	120
55°	103	132	265	124	98	92
65°	63	78	146	74	65	61
75°	27	33	66	34	28	29
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°	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6
2.5°	934.9	929.0	927.3	925.2	921.8	909.3	895.2	896.5	894.8	884.1	878.2
5°	997.9	998.6	996.8	995.5	989.6	974.4	964.0	957.8	944.6	924.6	918.3
7.5°	978.5	989.6	991.7	994.1	997.2	993.7	989.9	987.5	976.8	955.0	945.0
10°	893.8	893.1	905.5	915.6	942.5	961.6	968.5	978.5	987.5	972.3	961.2
12.5°	755.4	756.5	797.3	797.3	832.2	880.6	911.8	932.9	971.6	972.6	966.1
15°	603.6	620.5	656.8	664.4	709.4	774.4	813.5	857.1	932.2	955.7	954.3
17.5°	495.7	502.9	537.9	547.9	587.7	661.3	715.3	767.9	873.0	922.5	931.5
20°	408.5	415.1	440.3	447.9	488.0	558.3	607.0	663.8	801.4	877.2	893.1
22.5°	341.0	353.8	370.8	382.5	405.4	477.0	518.8	573.1	718.4	826.3	845.0
25°	300.2	306.1	320.6	326.2	353.8	401.2	449.3	497.0	644.7	762.7	795.5
27.5°	272.6	274.3	285.0	289.9	306.5	350.4	385.0	429.2	569.7	697.3	735.7
30°	249.7	252.8	261.1	262.2	276.7	307.8	337.6	378.4	504.0	634.0	673.4
32.5°	232.1	233.8	240.7	242.8	252.2	276.7	300.9	330.7	443.1	567.9	613.3
35°	216.9	217.2	222.4	225.2	233.5	253.9	268.8	293.7	394.3	513.3	553.1
37.5°	199.6	202.0	205.8	208.2	215.5	232.1	245.6	264.9	349.3	461.4	498.4
40°	185.0	187.1	191.6	192.7	199.2	214.4	225.5	242.8	310.6	411.6	449.3
42.5°	170.5	171.9	176.4	178.5	185.7	197.8	207.9	221.4	279.8	367.3	404.3
45°	154.3	157.7	162.6	163.6	170.5	183.0	190.6	203.0	252.2	328.9	361.8
47.5°	140.8	142.5	146.7	148.4	156.3	167.4	175.4	186.1	228.3	294.0	326.2
50°	127.3	128.0	131.8	134.2	140.4	153.2	160.8	170.5	206.5	265.6	288.1
52.5°	114.5	116.2	120.0	121.8	125.9	139.0	146.0	156.0	185.7	236.6	259.1
55°	102.7	103.8	106.5	108.6	113.5	124.9	131.8	140.4	167.8	210.0	229.7
57.5°	91.7	93.0	95.1	96.8	101.3	111.4	118.3	126.9	150.8	185.7	201.0
60°	80.2	82.0	84.4	85.1	89.2	98.2	104.5	112.1	133.5	163.3	176.7
62.5°	71.9	72.3	74.4	75.4	77.8	85.1	91.7	98.9	117.9	141.5	152.5
65°	62.6	63.6	64.7	65.4	67.4	73.7	78.5	84.1	102.7	123.1	130.7
67.5°	52.9	54.0	55.7	56.4	58.1	62.3	66.4	71.9	87.5	104.8	111.7
70°	41.2	41.2	43.9	45.3	48.1	51.2	54.3	59.1	72.6	87.5	92.7
72.5°	33.6	33.9	34.2	34.2	36.7	41.9	43.6	46.7	57.4	71.6	76.1
75°	27.3	27.7	28.0	28.4	28.7	30.4	33.2	36.0	43.9	54.3	58.5
77.5°	21.8	22.1	22.5	22.5	23.2	23.9	24.6	25.9	31.5	39.1	42.5
80°	16.6	16.9	17.3	17.3	17.6	18.3	18.7	19.4	21.1	26.3	28.0
82.5°	12.1	12.1	12.1	12.5	12.8	12.8	13.5	13.5	14.5	15.9	16.9
85°	7.6	7.6	8.0	8.0	8.0	8.3	8.0	8.3	8.6	9.0	9.7
87.5°	3.5	3.1	3.5	3.5	3.5	3.8	3.8	3.8	3.8	4.2	4.2
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°	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6
2.5°	861.9	849.8	829.4	816.6	811.8	796.9	782.7	771.0	765.1	764.4	753.7
5°	878.9	845.7	803.5	768.2	759.9	734.0	700.4	685.9	666.9	659.3	650.3
7.5°	892.7	840.8	778.6	725.3	709.8	670.7	627.8	608.8	594.2	571.4	557.9
10°	902.4	831.9	748.1	679.3	657.2	611.5	559.6	536.8	523.3	497.0	486.3
12.5°	906.2	820.4	717.7	631.6	612.2	557.9	507.1	483.5	463.5	439.6	429.2
15°	904.8	807.3	686.6	587.7	563.4	508.5	454.5	432.4	413.7	389.8	376.3
17.5°	895.5	788.6	652.7	545.1	521.9	465.2	410.6	390.2	373.6	350.4	340.0
20°	879.9	769.6	622.9	506.4	480.1	425.8	374.2	352.5	337.9	325.5	317.9
22.5°	858.5	747.1	586.6	468.0	445.2	390.5	341.0	323.4	314.8	304.7	299.2
25°	826.0	720.1	553.8	435.8	413.0	358.7	315.4	303.7	295.0	288.5	282.6
27.5°	791.0	694.2	520.9	403.3	381.9	330.0	295.4	286.4	278.8	270.5	265.3
30°	750.6	661.7	489.8	374.6	353.8	306.8	278.1	269.8	263.6	254.6	249.4
32.5°	702.8	626.1	460.7	346.9	327.6	286.7	262.2	253.2	248.0	239.4	234.2
35°	653.4	590.4	428.9	321.3	303.7	269.1	246.6	238.0	232.4	223.8	218.6
37.5°	605.0	552.4	400.5	298.8	282.9	251.5	230.4	223.1	217.9	208.9	202.7
40°	553.8	508.8	372.9	277.7	262.9	235.9	215.5	208.9	202.0	194.0	187.8
42.5°	500.1	470.4	347.3	259.1	245.2	220.7	200.6	193.7	187.8	178.5	175.7
45°	450.0	426.5	320.3	239.4	228.3	205.5	186.1	179.2	172.6	164.6	161.9
47.5°	405.4	383.6	295.7	222.1	211.0	190.6	171.6	164.3	159.5	153.2	149.1
50°	359.4	341.4	268.8	205.1	194.7	174.7	156.3	151.5	146.0	138.4	135.2
52.5°	316.5	302.6	246.6	188.9	179.2	161.2	142.5	137.7	132.5	125.9	121.4
55°	278.8	264.9	221.4	170.5	163.3	146.3	129.7	123.5	119.3	111.7	106.2
57.5°	240.0	233.5	197.2	155.3	148.4	131.4	116.6	111.7	106.5	98.2	92.7
60°	208.2	200.6	174.7	138.7	132.1	117.9	103.4	98.6	93.7	85.8	83.4
62.5°	178.1	172.6	152.9	123.1	117.6	103.8	91.0	86.5	81.6	76.4	74.7
65°	150.8	146.0	131.1	107.2	102.7	90.6	78.9	74.0	70.9	68.5	66.8
67.5°	125.2	122.4	111.0	92.4	88.9	78.2	67.8	64.0	62.3	59.5	58.1
70°	102.0	103.1	92.7	78.9	75.1	66.4	57.4	54.3	52.2	49.8	47.0
72.5°	83.4	83.0	76.8	64.3	61.6	54.6	47.7	45.7	43.2	38.4	35.3
75°	64.7	66.1	60.2	53.3	50.5	43.6	37.0	34.2	31.8	30.1	29.1
77.5°	49.5	50.2	47.4	40.8	38.4	32.5	27.3	25.9	24.9	23.9	23.5
80°	35.3	36.3	33.6	29.4	27.3	22.5	19.7	19.4	19.0	18.3	18.0
82.5°	22.8	24.2	22.8	18.3	17.3	14.9	14.2	14.2	13.8	13.5	13.1
85°	12.5	13.8	13.1	10.7	10.0	9.3	9.0	8.6	8.6	8.6	8.6
87.5°	4.8	6.6	5.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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°	843.6	843.6	843.6
2.5°	751.3	747.8	746.4
5°	647.8	637.1	634.7
7.5°	553.8	549.3	534.4
10°	484.6	470.7	464.5
12.5°	422.3	409.5	407.5
15°	372.5	363.5	360.4
17.5°	339.7	333.4	329.6
20°	315.4	311.0	308.2
22.5°	297.1	293.7	291.6
25°	280.9	275.7	273.9
27.5°	264.3	259.8	258.0
30°	248.7	244.9	242.5
32.5°	232.4	227.9	226.6
35°	216.9	214.1	212.7
37.5°	201.7	198.2	196.1
40°	187.5	185.7	184.7
42.5°	174.7	171.6	171.2
45°	161.2	158.1	157.4
47.5°	148.4	145.6	145.3
50°	134.9	131.1	128.3
52.5°	118.6	115.2	112.8
55°	104.1	100.3	98.2
57.5°	92.0	90.3	89.2
60°	82.7	81.6	80.9
62.5°	74.4	73.3	73.3
65°	66.8	65.7	64.7
67.5°	57.4	55.3	55.0
70°	46.0	42.9	42.5
72.5°	34.9	34.6	33.9
75°	29.1	28.4	28.4
77.5°	23.5	22.8	22.8
80°	18.0	17.6	18.0
82.5°	13.1	13.1	12.8
85°	8.6	8.3	8.3
87.5°	4.2	4.2	4.2
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	12.75	14.21	13.12	14.52	14.84	17.85	19.31	18.22	19.62	19.93
	3H	14.09	15.39	14.47	15.72	16.08	19.13	20.43	19.51	20.76	21.12
	4H	14.49	15.71	14.89	16.06	16.44	19.57	20.79	19.97	21.14	21.52
	6H	14.79	15.92	15.21	16.29	16.68	19.87	20.99	20.28	21.36	21.75
	8H	14.89	15.96	15.32	16.35	16.76	19.95	21.02	20.37	21.41	21.81
	12H	14.96	15.99	15.39	16.37	16.80	19.98	21.01	20.42	21.39	21.82
4H	2H	13.61	14.83	14.01	15.17	15.55	17.89	19.11	18.29	19.46	19.84
	3H	15.08	16.09	15.49	16.49	16.89	19.38	20.39	19.79	20.79	21.19
	4H	15.54	16.45	15.98	16.87	17.31	19.94	20.84	20.37	21.26	21.70
	6H	15.93	16.72	16.39	17.16	17.62	20.38	21.16	20.83	21.61	22.07
	8H	16.06	16.80	16.53	17.24	17.71	20.50	21.23	20.96	21.68	22.14
	12H	16.16	16.81	16.64	17.29	17.77	20.57	21.23	21.05	21.71	22.18
8H	4H	15.93	16.67	16.40	17.11	17.58	19.94	20.68	20.41	21.12	21.59
	6H	16.40	17.01	16.90	17.50	17.98	20.43	21.04	20.93	21.53	22.01
	8H	16.58	17.13	17.10	17.64	18.13	20.59	21.14	21.11	21.65	22.14
	12H	16.74	17.22	17.26	17.72	18.28	20.72	21.20	21.23	21.69	22.26
12H	4H	15.98	16.63	16.46	17.11	17.58	19.92	20.57	20.40	21.05	21.53
	6H	16.46	17.01	16.98	17.52	18.01	20.40	20.95	20.92	21.46	21.95
	8H	16.70	17.18	17.21	17.67	18.24	20.60	21.08	21.11	21.57	22.14