

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: P646632

Luminaire Tested: S123DRP-S340D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2024  
Report Number: P646632  
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-S340D835-X4F0-XX-UDD-G-W  
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC  
STANDARD LIGHT ENGINE  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

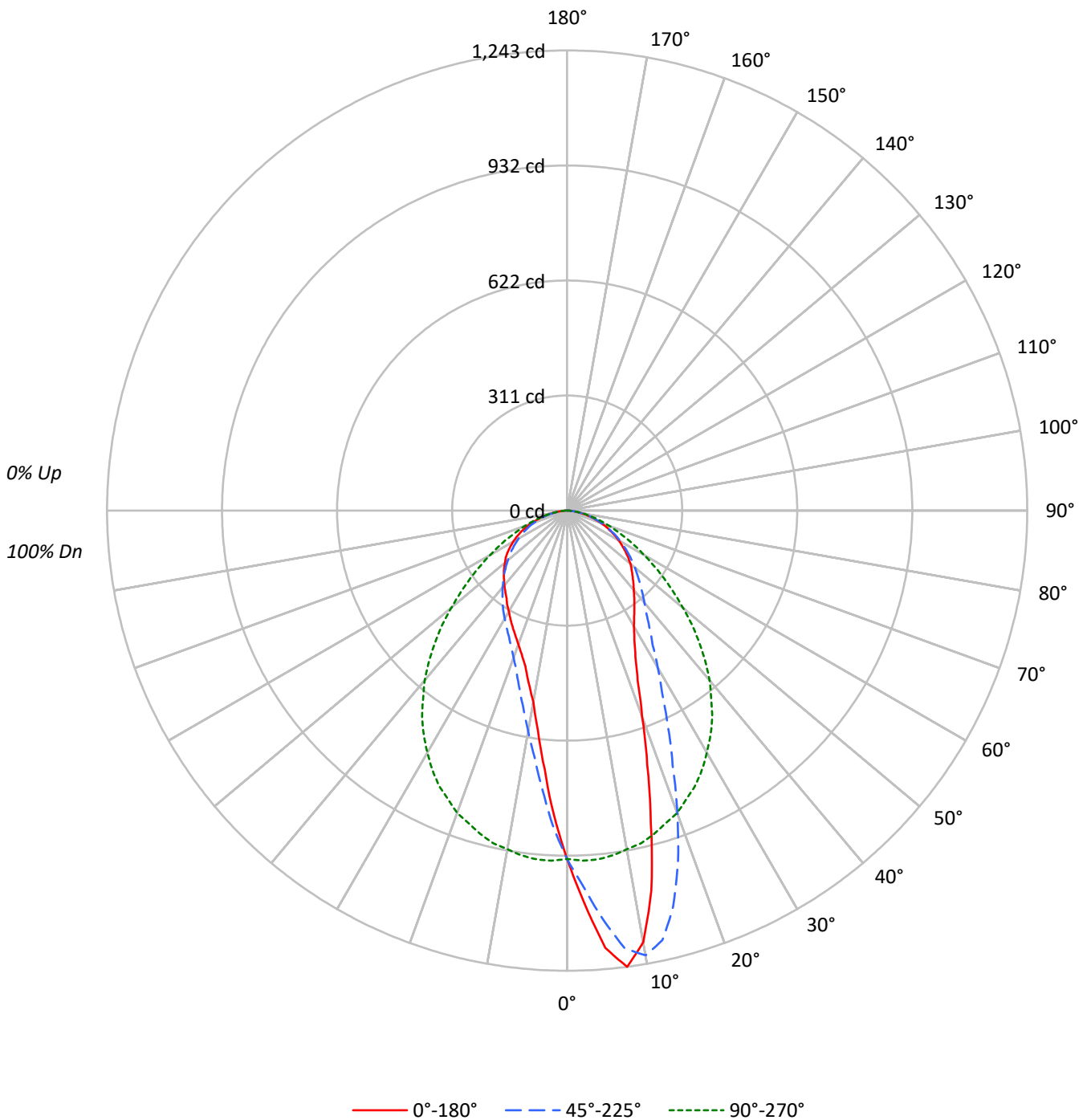
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1511.8 lumens  
Efficiency: N/A  
Efficacy: 127.0 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: P646632

CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-G-W

### Luminous Intensity Polar Plot



TEST NUMBER: P646632

CATALOG NUMBER: S123DRP-S340D835-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	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°	11337	11337	11337	11337	11337
5°	14338	13409	11438	9173	8470
10°	14478	14926	11363	7410	6421
15°	10904	13813	11285	6210	5430
20°	7597	11170	11141	5414	4933
25°	5794	8568	10895	4963	4627
30°	5012	6811	10503	4690	4380
35°	4650	5703	10051	4470	4207
40°	4403	5103	9415	4264	4148
45°	4255	4739	8609	4085	4122
50°	4182	4476	7652	3929	4100
55°	4027	4229	6714	3788	4117
60°	3882	3998	5786	3651	4051
65°	3647	3746	4992	3498	3972
70°	3368	3477	4245	3308	3738
75°	3049	3152	3641	3031	3417
80°	2512	2699	2880	2637	2880
85°	1991	2171	2115	2295	2295

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 9829 cd/sqm



TEST NUMBER: P646632

CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-G-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	89.0	5.9
10°-20°	221.3	14.6
20°-30°	262.0	17.3
30°-40°	263.3	17.4
40°-50°	241.5	16.0
50°-60°	199.3	13.2
60°-70°	141.0	9.3
70°-80°	75.3	5.0
80°-90°	19.1	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°	572.3	37.9
0°-40°	835.6	55.3
0°-60°	1276.3	84.4
0°-90°	1511.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1511.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	941	941	941	941	941	
5°	1185	1109	946	758	700	113
15°	874	1107	905	498	435	241
25°	436	644	820	373	348	206
35°	316	388	683	304	286	199
45°	250	278	505	240	242	193
55°	192	201	320	180	196	172
65°	128	131	175	123	139	127
75°	66	68	78	65	73	69
85°	14	16	15	17	17	17
90°	0	0	0	0	0	



TEST NUMBER: P646632

CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9
2.5°	1060.6	1058.4	1047.5	1040.5	1042.2	1026.5	1016.9	1009.0	1003.8	991.1	984.6
5°	1185.4	1191.5	1184.6	1181.1	1163.2	1134.8	1108.6	1102.9	1078.5	1048.3	1037.9
7.5°	1243.1	1246.6	1242.2	1242.2	1236.5	1211.2	1192.9	1178.4	1136.5	1097.7	1079.8
10°	1183.3	1191.1	1208.1	1216.0	1227.4	1223.9	1219.9	1214.3	1185.9	1140.9	1120.4
12.5°	1051.8	1061.4	1095.5	1100.3	1139.2	1176.7	1188.9	1202.9	1205.5	1167.5	1145.3
15°	874.1	900.8	931.8	946.6	995.9	1075.0	1107.3	1145.3	1190.2	1174.5	1157.1
17.5°	720.0	730.0	763.2	794.7	844.0	935.2	995.1	1051.8	1148.3	1164.0	1153.1
20°	592.5	601.7	645.3	643.1	708.6	811.2	871.1	936.6	1078.9	1130.0	1127.8
22.5°	497.8	512.2	536.6	550.1	597.3	688.6	745.3	827.0	999.9	1080.6	1089.4
25°	435.8	446.2	461.1	472.9	509.5	584.6	644.5	711.7	900.3	1016.0	1037.9
27.5°	393.4	397.8	412.6	419.6	444.0	508.7	554.9	616.5	808.2	943.5	974.1
30°	360.2	363.3	376.4	378.6	397.8	444.5	489.5	539.7	718.2	868.9	903.8
32.5°	337.1	339.3	349.3	350.2	364.6	398.6	430.1	477.2	633.1	789.0	832.2
35°	316.1	317.4	324.8	327.0	336.2	362.0	387.7	424.0	565.4	716.9	764.5
37.5°	297.8	299.5	303.9	306.5	313.9	334.5	351.9	382.0	500.4	641.8	694.7
40°	279.9	282.9	286.0	286.0	294.3	310.0	324.4	349.3	444.5	576.3	623.1
42.5°	264.6	267.7	269.0	269.4	273.8	288.2	300.4	317.4	402.1	518.3	564.1
45°	249.7	251.1	252.4	253.2	256.3	269.0	278.1	294.3	362.0	464.6	509.1
47.5°	236.2	236.2	237.1	238.4	240.6	249.7	257.6	269.4	327.5	416.5	453.2
50°	223.1	223.1	221.8	222.7	224.0	231.0	238.8	248.4	295.2	372.4	405.2
52.5°	207.4	207.4	207.8	206.5	207.8	213.9	220.1	229.7	267.7	331.8	359.8
55°	191.7	193.4	192.1	191.2	193.0	196.9	201.3	209.6	241.9	299.5	321.8
57.5°	176.0	176.8	176.4	177.7	176.8	180.3	184.3	189.9	218.7	263.3	284.2
60°	161.1	161.1	160.2	161.1	161.1	162.9	165.9	171.6	195.2	232.3	249.7
62.5°	144.5	145.0	145.4	145.0	144.5	146.7	149.3	153.3	174.6	202.2	215.3
65°	127.9	128.4	129.7	129.2	128.8	131.0	131.4	135.8	151.9	175.5	185.1
67.5°	113.1	112.2	112.6	113.5	114.0	114.4	115.3	119.6	131.0	150.2	158.1
70°	95.6	96.5	96.1	97.4	96.5	97.8	98.7	101.7	112.6	125.3	130.6
72.5°	79.9	80.3	80.3	81.6	81.2	82.5	83.4	84.7	92.6	103.9	106.1
75°	65.5	65.5	66.4	66.8	66.8	66.8	67.7	68.5	75.1	82.1	84.3
77.5°	49.8	52.0	51.5	52.0	52.4	53.7	52.8	54.6	58.5	62.4	63.7
80°	36.2	36.2	36.7	37.1	38.0	38.9	38.9	40.6	42.4	44.5	45.8
82.5°	23.1	23.6	24.9	25.3	25.8	27.1	27.1	27.1	29.3	30.1	30.1
85°	14.4	13.5	14.4	14.8	15.3	15.7	15.7	16.6	17.0	17.5	17.5
87.5°	7.0	7.0	7.0	7.0	7.4	7.4	7.4	7.4	7.9	7.9	7.9
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: P646632

CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (continued):**

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9	940.9
2.5°	962.8	946.6	922.6	902.9	903.8	885.9	872.8	855.8	850.5	845.3	838.3
5°	982.8	945.7	896.0	856.2	844.0	814.3	776.8	758.4	747.5	728.3	720.9
7.5°	1007.7	939.6	863.6	801.6	788.1	738.8	694.2	672.4	651.9	638.3	621.8
10°	1023.9	928.7	830.9	748.8	735.7	679.4	621.3	605.6	579.8	563.2	547.5
12.5°	1036.1	920.4	797.3	701.7	680.3	625.7	567.2	545.8	527.0	503.0	491.6
15°	1047.0	904.7	762.8	652.3	630.0	571.1	517.0	497.8	480.7	459.8	449.7
17.5°	1043.1	885.5	724.8	608.7	586.4	528.3	476.4	454.5	443.2	424.8	417.8
20°	1038.3	868.9	689.0	567.2	542.7	488.6	437.9	422.2	410.9	399.1	393.0
22.5°	1023.0	842.7	652.8	529.2	506.0	451.9	408.7	395.6	386.8	378.6	373.3
25°	997.2	819.5	617.4	491.2	472.9	422.2	385.5	373.3	367.6	359.3	354.5
27.5°	965.4	789.0	582.0	460.2	439.2	394.3	362.8	355.0	348.9	342.3	337.5
30°	925.2	754.9	547.5	430.1	410.9	371.1	344.1	337.1	331.4	324.8	319.2
32.5°	874.1	720.4	515.2	402.1	386.0	351.5	326.6	320.9	316.1	308.3	305.2
35°	816.9	683.3	483.3	375.5	360.2	330.1	309.6	303.9	299.1	292.5	289.9
37.5°	758.9	639.2	451.9	352.8	339.3	312.2	292.5	286.9	282.5	276.8	275.5
40°	697.3	598.6	420.9	329.7	317.9	294.7	275.5	271.1	266.8	263.3	262.4
42.5°	635.3	551.9	393.8	310.4	297.8	276.4	258.9	254.1	251.5	249.7	250.2
45°	576.8	505.2	365.9	288.2	279.4	259.8	243.6	239.7	237.5	236.2	238.0
47.5°	513.5	457.6	339.7	269.4	260.7	243.2	227.9	224.4	223.6	223.1	226.2
50°	457.6	408.2	311.3	250.2	242.8	224.9	212.6	209.6	208.7	210.0	214.4
52.5°	404.8	362.4	285.6	232.3	224.9	208.7	197.4	195.2	194.7	197.8	202.2
55°	352.4	319.6	257.6	212.6	205.2	191.2	182.5	180.3	179.9	186.0	189.9
57.5°	307.8	278.1	231.4	193.9	188.2	175.1	167.2	165.5	166.8	172.5	176.4
60°	264.2	240.1	207.4	173.8	169.4	158.1	151.9	151.5	152.8	159.4	163.3
62.5°	224.9	206.5	181.6	155.4	152.4	142.3	136.7	137.5	138.8	145.4	148.9
65°	191.2	175.1	156.3	137.1	133.2	126.2	122.3	122.7	125.3	131.0	134.5
67.5°	158.5	145.4	134.9	119.6	116.6	110.5	107.4	109.2	110.5	116.1	119.6
70°	131.0	120.5	112.6	101.3	99.1	93.9	91.7	93.9	95.2	100.0	104.4
72.5°	105.2	98.7	92.6	84.3	82.1	78.6	78.2	79.0	81.2	86.0	87.8
75°	81.6	78.2	72.9	67.7	66.4	64.6	64.2	65.1	67.2	69.9	71.6
77.5°	62.0	58.9	55.0	52.8	51.1	50.2	50.6	52.0	52.8	55.5	56.8
80°	45.0	41.5	40.6	37.5	37.1	36.7	37.5	38.0	39.3	41.0	41.9
82.5°	29.7	27.1	26.2	25.8	25.3	24.9	26.2	26.6	27.5	28.8	29.3
85°	16.2	15.3	15.3	14.8	15.3	16.2	16.2	16.6	16.6	17.0	16.6
87.5°	7.4	6.5	7.0	7.0	7.0	7.4	7.4	7.9	7.9	7.9	7.4
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: P646632

CATALOG NUMBER: S123DRP-S340D835-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (continued):**

	160°	170°	180°
0°	940.9	940.9	940.9
2.5°	837.9	834.8	822.6
5°	714.3	703.8	700.3
7.5°	620.0	619.1	600.8
10°	540.1	541.4	524.8
12.5°	489.9	479.0	477.7
15°	447.1	437.1	435.3
17.5°	415.2	409.1	407.4
20°	391.2	387.7	384.7
22.5°	372.0	367.6	365.0
25°	352.8	348.9	348.0
27.5°	336.2	331.4	331.4
30°	319.2	316.1	314.8
32.5°	303.9	301.3	301.3
35°	289.0	287.7	286.0
37.5°	275.5	275.5	274.6
40°	262.4	263.7	263.7
42.5°	251.1	252.4	252.4
45°	238.8	241.0	241.9
47.5°	226.6	230.1	231.0
50°	215.7	218.3	218.7
52.5°	203.9	207.0	209.1
55°	191.7	194.7	196.0
57.5°	178.6	181.6	182.1
60°	164.2	167.2	168.1
62.5°	151.1	152.8	153.7
65°	134.9	137.5	139.3
67.5°	120.1	122.3	122.3
70°	103.9	104.8	106.1
72.5°	88.6	89.1	89.1
75°	72.0	72.9	73.4
77.5°	56.8	57.2	57.2
80°	41.9	41.5	41.5
82.5°	29.3	27.9	27.9
85°	16.6	16.2	16.6
87.5°	7.4	7.4	7.4
90°	0.0	0.0	0.0



TEST NUMBER: P646632  
 CATALOG NUMBER: S123DRP-S340D835-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	15.93	17.43	16.29	17.75	18.06	18.38	19.89	18.74	20.20	20.51
	3H	17.62	18.97	17.99	19.30	19.66	19.59	20.95	19.97	21.27	21.64
	4H	18.22	19.49	18.62	19.84	20.22	20.01	21.29	20.41	21.63	22.01
	6H	18.62	19.80	19.04	20.17	20.56	20.29	21.46	20.70	21.83	22.22
	8H	18.73	19.84	19.15	20.23	20.64	20.35	21.47	20.78	21.86	22.26
	12H	18.78	19.85	19.21	20.24	20.66	20.39	21.46	20.82	21.84	22.27
4H	2H	16.57	17.84	16.97	18.19	18.57	18.60	19.87	19.00	20.22	20.60
	3H	18.46	19.52	18.87	19.92	20.32	20.08	21.14	20.49	21.54	21.94
	4H	19.18	20.13	19.61	20.55	20.99	20.65	21.60	21.08	22.02	22.46
	6H	19.69	20.52	20.15	20.96	21.42	21.04	21.87	21.50	22.31	22.77
	8H	19.83	20.60	20.29	21.05	21.51	21.15	21.92	21.61	22.37	22.83
	12H	19.91	20.61	20.40	21.08	21.56	21.21	21.90	21.69	22.38	22.85
8H	4H	19.50	20.28	19.97	20.72	21.19	20.81	21.59	21.28	22.03	22.50
	6H	20.12	20.76	20.61	21.25	21.73	21.31	21.94	21.80	22.44	22.91
	8H	20.32	20.89	20.83	21.40	21.89	21.47	22.04	21.98	22.55	23.04
	12H	20.46	20.96	20.97	21.46	22.02	21.59	22.09	22.10	22.58	23.15
12H	4H	19.54	20.23	20.02	20.71	21.18	20.82	21.51	21.30	21.99	22.46
	6H	20.17	20.74	20.68	21.25	21.74	21.32	21.90	21.84	22.41	22.90
	8H	20.42	20.93	20.93	21.42	21.98	21.53	22.04	22.04	22.53	23.10