

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: P646654

Luminaire Tested: S123DRP-S775D930-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646654
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-S775D930-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

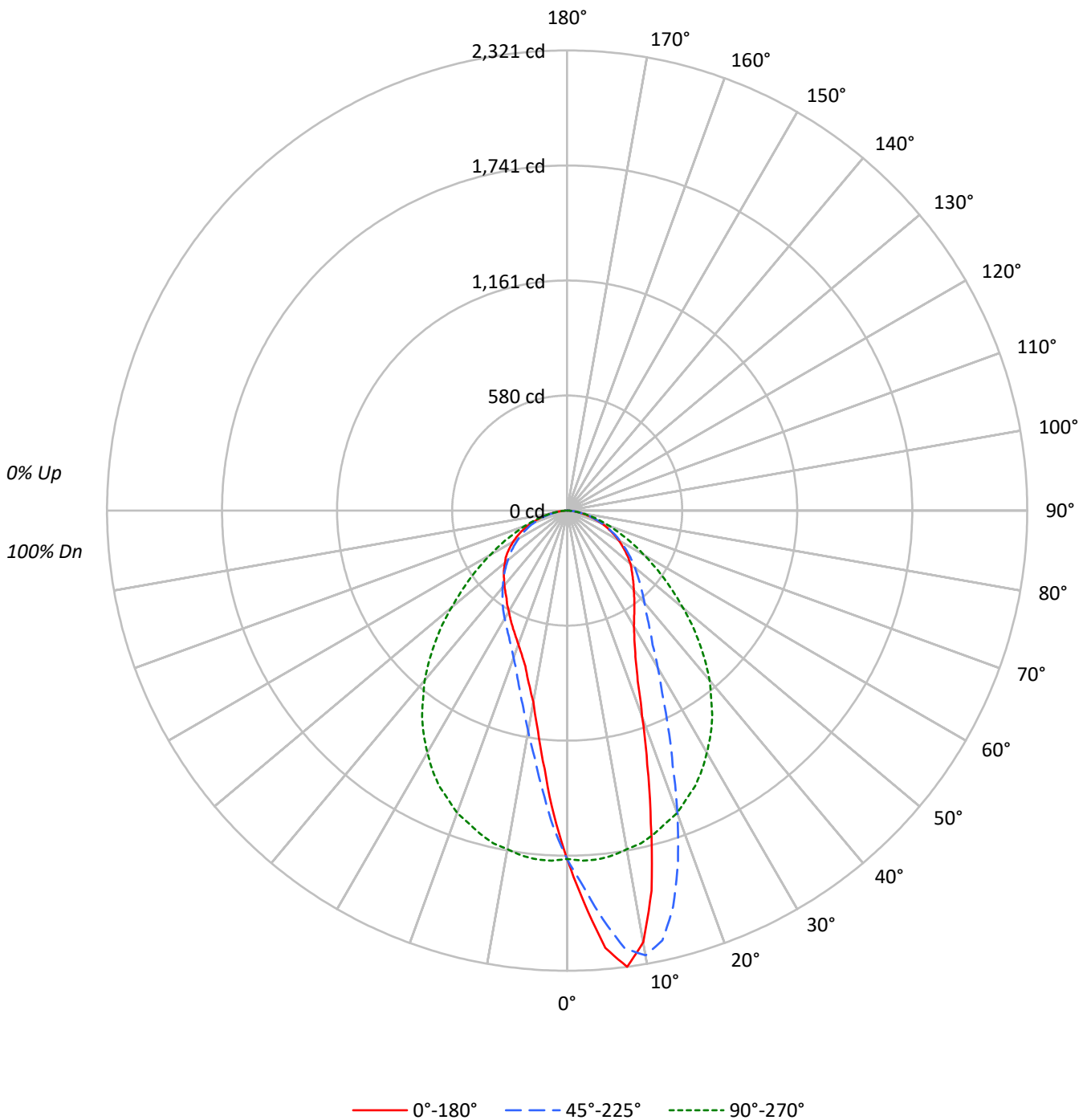
Lumens per Lamp: N/A
Luminaire Lumens: 2823.0 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 25.7
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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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	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°	21170	21170	21170	21170	21170
5°	26773	25037	21359	17129	15817
10°	27033	27870	21217	13835	11990
15°	20360	25792	21073	11594	10140
20°	14187	20856	20803	10109	9210
25°	10818	15999	20345	9268	8639
30°	9358	12717	19613	8757	8178
35°	8683	10650	18768	8346	7855
40°	8220	9529	17582	7964	7745
45°	7948	8849	16074	7627	7697
50°	7809	8360	14289	7335	7657
55°	7518	7897	12537	7073	7691
60°	7249	7466	10806	6817	7564
65°	6811	6997	9320	6532	7416
70°	6292	6493	7927	6176	6979
75°	5694	5884	6792	5656	6378
80°	4698	5038	5378	4920	5378
85°	3719	4065	3940	4286	4286

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 18352 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.1	5.9
10°-20°	413.3	14.6
20°-30°	489.2	17.3
30°-40°	491.6	17.4
40°-50°	450.9	16.0
50°-60°	372.2	13.2
60°-70°	263.3	9.3
70°-80°	140.6	5.0
80°-90°	35.7	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°	1068.6	37.9
0°-40°	1560.3	55.3
0°-60°	2383.3	84.4
0°-90°	2823.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2823.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1757	1757	1757	1757	1757	
5°	2214	2070	1766	1416	1308	211
15°	1632	2068	1689	929	813	451
25°	814	1203	1530	697	650	384
35°	590	724	1276	567	534	371
45°	466	519	943	448	452	361
55°	358	376	597	337	366	320
65°	239	245	327	229	260	237
75°	122	126	146	122	137	129
85°	27	29	28	31	31	32
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°	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0
2.5°	1980.4	1976.3	1955.9	1942.9	1946.1	1916.8	1898.8	1884.2	1874.4	1850.7	1838.5
5°	2213.5	2225.0	2211.9	2205.4	2172.0	2119.0	2070.0	2059.4	2013.8	1957.5	1938.0
7.5°	2321.2	2327.7	2319.5	2319.5	2308.9	2261.6	2227.4	2200.5	2122.2	2049.7	2016.2
10°	2209.5	2224.1	2255.9	2270.6	2291.8	2285.3	2277.9	2267.3	2214.4	2130.4	2092.1
12.5°	1964.1	1982.0	2045.6	2054.6	2127.1	2197.2	2220.1	2246.1	2251.0	2180.1	2138.5
15°	1632.2	1682.0	1739.8	1767.6	1859.7	2007.3	2067.6	2138.5	2222.5	2193.2	2160.5
17.5°	1344.4	1363.2	1425.1	1483.8	1576.0	1746.4	1858.1	1964.1	2144.2	2173.6	2153.2
20°	1106.4	1123.5	1205.0	1200.9	1323.2	1514.8	1626.5	1748.8	2014.6	2110.0	2105.9
22.5°	929.4	956.3	1002.0	1027.3	1115.3	1285.7	1391.7	1544.2	1867.0	2017.9	2034.2
25°	813.7	833.2	861.0	883.0	951.5	1091.7	1203.4	1328.9	1681.1	1897.2	1938.0
27.5°	734.6	742.7	770.5	783.5	829.2	949.8	1036.2	1151.2	1509.1	1761.9	1818.9
30°	672.6	678.3	702.8	706.9	742.7	830.0	914.0	1007.7	1341.2	1622.4	1687.7
32.5°	629.4	633.5	652.2	653.9	680.8	744.4	803.1	891.1	1182.2	1473.2	1554.0
35°	590.3	592.7	606.6	610.7	627.8	675.9	724.0	791.7	1055.8	1338.7	1427.6
37.5°	556.0	559.3	567.4	572.3	586.2	624.5	657.1	713.4	934.3	1198.5	1297.1
40°	522.6	528.3	534.0	534.0	549.5	578.9	605.8	652.2	830.0	1076.2	1163.4
42.5°	494.1	499.8	502.2	503.0	511.2	538.1	560.9	592.7	750.9	967.8	1053.4
45°	466.4	468.8	471.2	472.9	478.6	502.2	519.3	549.5	675.9	867.5	950.6
47.5°	441.1	441.1	442.7	445.2	449.2	466.4	481.0	503.0	611.5	777.8	846.3
50°	416.6	416.6	414.2	415.8	418.2	431.3	446.0	463.9	551.1	695.5	756.6
52.5°	387.3	387.3	388.1	385.6	388.1	399.5	410.9	428.8	499.8	619.6	671.8
55°	357.9	361.2	358.7	357.1	360.4	367.7	375.9	391.3	451.7	559.3	600.9
57.5°	328.6	330.2	329.4	331.8	330.2	336.7	344.1	354.7	408.5	491.6	530.8
60°	300.8	300.8	299.2	300.8	300.8	304.1	309.8	320.4	364.4	433.7	466.4
62.5°	269.9	270.7	271.5	270.7	269.9	273.9	278.8	286.2	326.1	377.5	401.9
65°	238.9	239.7	242.1	241.3	240.5	244.6	245.4	253.6	283.7	327.8	345.7
67.5°	211.2	209.5	210.3	212.0	212.8	213.6	215.2	223.4	244.6	280.5	295.1
70°	178.6	180.2	179.4	181.8	180.2	182.6	184.3	190.0	210.3	234.0	243.8
72.5°	149.2	150.0	150.0	152.5	151.6	154.1	155.7	158.2	172.8	194.0	198.1
75°	122.3	122.3	123.9	124.7	124.7	124.7	126.4	128.0	140.2	153.3	157.4
77.5°	92.9	97.0	96.2	97.0	97.8	100.3	98.7	101.9	109.3	116.6	119.0
80°	67.7	67.7	68.5	69.3	70.9	72.6	72.6	75.8	79.1	83.2	85.6
82.5°	43.2	44.0	46.5	47.3	48.1	50.5	50.5	50.5	54.6	56.3	56.3
85°	26.9	25.3	26.9	27.7	28.5	29.4	29.4	31.0	31.8	32.6	32.6
87.5°	13.0	13.0	13.0	13.0	13.9	13.9	13.9	13.9	14.7	14.7	14.7
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°	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0	1757.0
2.5°	1797.7	1767.6	1722.7	1686.0	1687.7	1654.2	1629.8	1598.0	1588.2	1578.4	1565.4
5°	1835.2	1765.9	1673.0	1598.8	1576.0	1520.5	1450.4	1416.2	1395.8	1359.9	1346.1
7.5°	1881.7	1754.5	1612.7	1496.9	1471.6	1379.5	1296.3	1255.6	1217.2	1192.0	1161.0
10°	1911.9	1734.1	1551.5	1398.2	1373.8	1268.6	1160.2	1130.8	1082.7	1051.7	1022.4
12.5°	1934.7	1718.7	1488.7	1310.2	1270.2	1168.3	1059.1	1019.1	984.1	939.2	918.0
15°	1955.1	1689.3	1424.3	1218.1	1176.5	1066.4	965.3	929.4	897.6	858.5	839.8
17.5°	1947.7	1653.4	1353.4	1136.5	1094.9	986.5	889.5	848.7	827.5	793.3	780.2
20°	1938.8	1622.4	1286.5	1059.1	1013.4	912.3	817.7	788.4	767.2	745.2	733.8
22.5°	1910.2	1573.5	1218.9	988.1	944.9	843.8	763.1	738.7	722.4	706.9	697.1
25°	1862.1	1530.3	1152.8	917.2	883.0	788.4	719.9	697.1	686.5	671.0	662.0
27.5°	1802.6	1473.2	1086.8	859.3	820.2	736.2	677.5	662.8	651.4	639.2	630.2
30°	1727.6	1409.7	1022.4	803.1	767.2	693.0	642.5	629.4	618.8	606.6	596.0
32.5°	1632.2	1345.2	962.1	750.9	720.7	656.3	609.8	599.2	590.3	575.6	569.9
35°	1525.4	1275.9	902.5	701.2	672.6	616.4	578.0	567.4	558.5	546.3	541.4
37.5°	1417.0	1193.6	843.8	658.8	633.5	582.9	546.3	535.7	527.5	516.9	514.5
40°	1302.0	1117.8	785.9	615.6	593.5	550.3	514.5	506.3	498.1	491.6	490.0
42.5°	1186.3	1030.5	735.4	579.7	556.0	516.1	483.5	474.5	469.6	466.4	467.2
45°	1077.0	943.3	683.2	538.1	521.8	485.1	454.9	447.6	443.5	441.1	444.3
47.5°	958.8	854.4	634.3	503.0	486.7	454.1	425.6	419.1	417.4	416.6	422.3
50°	854.4	762.3	581.3	467.2	453.3	419.9	397.1	391.3	389.7	392.2	400.3
52.5°	755.8	676.7	533.2	433.7	419.9	389.7	368.5	364.4	363.6	369.3	377.5
55°	657.9	596.8	481.0	397.1	383.2	357.1	340.8	336.7	335.9	347.3	354.7
57.5°	574.8	519.3	432.1	362.0	351.4	326.9	312.3	309.0	311.4	322.0	329.4
60°	493.3	448.4	387.3	324.5	316.3	295.1	283.7	282.9	285.4	297.6	304.9
62.5°	419.9	385.6	339.2	290.2	284.5	265.8	255.2	256.8	259.3	271.5	278.0
65°	357.1	326.9	291.9	256.0	248.7	235.6	228.3	229.1	234.0	244.6	251.1
67.5°	296.0	271.5	251.9	223.4	217.7	206.3	200.6	203.8	206.3	216.9	223.4
70°	244.6	225.0	210.3	189.1	185.1	175.3	171.2	175.3	177.7	186.7	194.9
72.5°	196.5	184.3	172.8	157.4	153.3	146.8	145.9	147.6	151.6	160.6	163.9
75°	152.5	145.9	136.2	126.4	123.9	120.7	119.8	121.5	125.6	130.4	133.7
77.5°	115.8	110.1	102.7	98.7	95.4	93.8	94.6	97.0	98.7	103.5	106.0
80°	84.0	77.5	75.8	70.1	69.3	68.5	70.1	70.9	73.4	76.6	78.3
82.5°	55.4	50.5	48.9	48.1	47.3	46.5	48.9	49.7	51.4	53.8	54.6
85°	30.2	28.5	28.5	27.7	28.5	30.2	30.2	31.0	31.0	31.8	31.0
87.5°	13.9	12.2	13.0	13.0	13.0	13.9	13.9	14.7	14.7	14.7	13.9
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°	1757.0	1757.0	1757.0
2.5°	1564.6	1558.9	1536.0
5°	1333.8	1314.3	1307.7
7.5°	1157.7	1156.1	1121.9
10°	1008.5	1011.0	980.0
12.5°	914.8	894.4	891.9
15°	834.9	816.1	812.9
17.5°	775.3	763.9	760.7
20°	730.5	724.0	718.3
22.5°	694.6	686.5	681.6
25°	658.8	651.4	649.8
27.5°	627.8	618.8	618.8
30°	596.0	590.3	587.8
32.5°	567.4	562.6	562.6
35°	539.7	537.3	534.0
37.5°	514.5	514.5	512.8
40°	490.0	492.4	492.4
42.5°	468.8	471.2	471.2
45°	446.0	450.0	451.7
47.5°	423.1	429.7	431.3
50°	402.8	407.6	408.5
52.5°	380.7	386.5	390.5
55°	357.9	363.6	366.1
57.5°	333.5	339.2	340.0
60°	306.6	312.3	313.9
62.5°	282.1	285.4	287.0
65°	251.9	256.8	260.1
67.5°	224.2	228.3	228.3
70°	194.0	195.7	198.1
72.5°	165.5	166.3	166.3
75°	134.5	136.2	137.0
77.5°	106.0	106.8	106.8
80°	78.3	77.5	77.5
82.5°	54.6	52.2	52.2
85°	31.0	30.2	31.0
87.5°	13.9	13.9	13.9
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	18.10	19.60	18.46	19.92	20.23	20.55	22.06	20.91	22.37	22.68
	3H	19.79	21.14	20.16	21.47	21.83	21.76	23.12	22.14	23.44	23.81
	4H	20.39	21.66	20.79	22.01	22.39	22.18	23.46	22.58	23.80	24.18
	6H	20.79	21.97	21.21	22.34	22.73	22.46	23.63	22.87	24.00	24.39
	8H	20.90	22.01	21.32	22.40	22.81	22.52	23.64	22.95	24.03	24.43
	12H	20.95	22.02	21.38	22.40	22.83	22.56	23.63	22.99	24.01	24.44
4H	2H	18.74	20.01	19.14	20.36	20.74	20.77	22.04	21.17	22.39	22.77
	3H	20.63	21.69	21.04	22.09	22.49	22.25	23.31	22.66	23.71	24.11
	4H	21.35	22.30	21.78	22.72	23.16	22.82	23.77	23.25	24.19	24.63
	6H	21.86	22.69	22.32	23.13	23.59	23.21	24.04	23.67	24.48	24.94
	8H	22.00	22.77	22.46	23.22	23.68	23.32	24.09	23.78	24.54	25.00
	12H	22.08	22.78	22.57	23.25	23.73	23.38	24.07	23.86	24.55	25.02
8H	4H	21.67	22.45	22.14	22.89	23.36	22.98	23.76	23.45	24.20	24.67
	6H	22.29	22.93	22.78	23.42	23.90	23.48	24.11	23.97	24.61	25.08
	8H	22.48	23.06	23.00	23.57	24.06	23.64	24.21	24.15	24.72	25.21
	12H	22.63	23.13	23.14	23.63	24.19	23.76	24.26	24.27	24.75	25.32
12H	4H	21.71	22.40	22.19	22.88	23.35	22.99	23.68	23.47	24.16	24.63
	6H	22.34	22.91	22.85	23.42	23.91	23.49	24.07	24.01	24.58	25.07
	8H	22.59	23.10	23.10	23.59	24.15	23.70	24.21	24.21	24.70	25.27