

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: P646653

Luminaire Tested: S123DRP-S775D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2024  
Report Number: P646653  
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-S775D927-X4F0-XX-UDD-G-W  
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC  
STANDARD LIGHT ENGINE  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: -

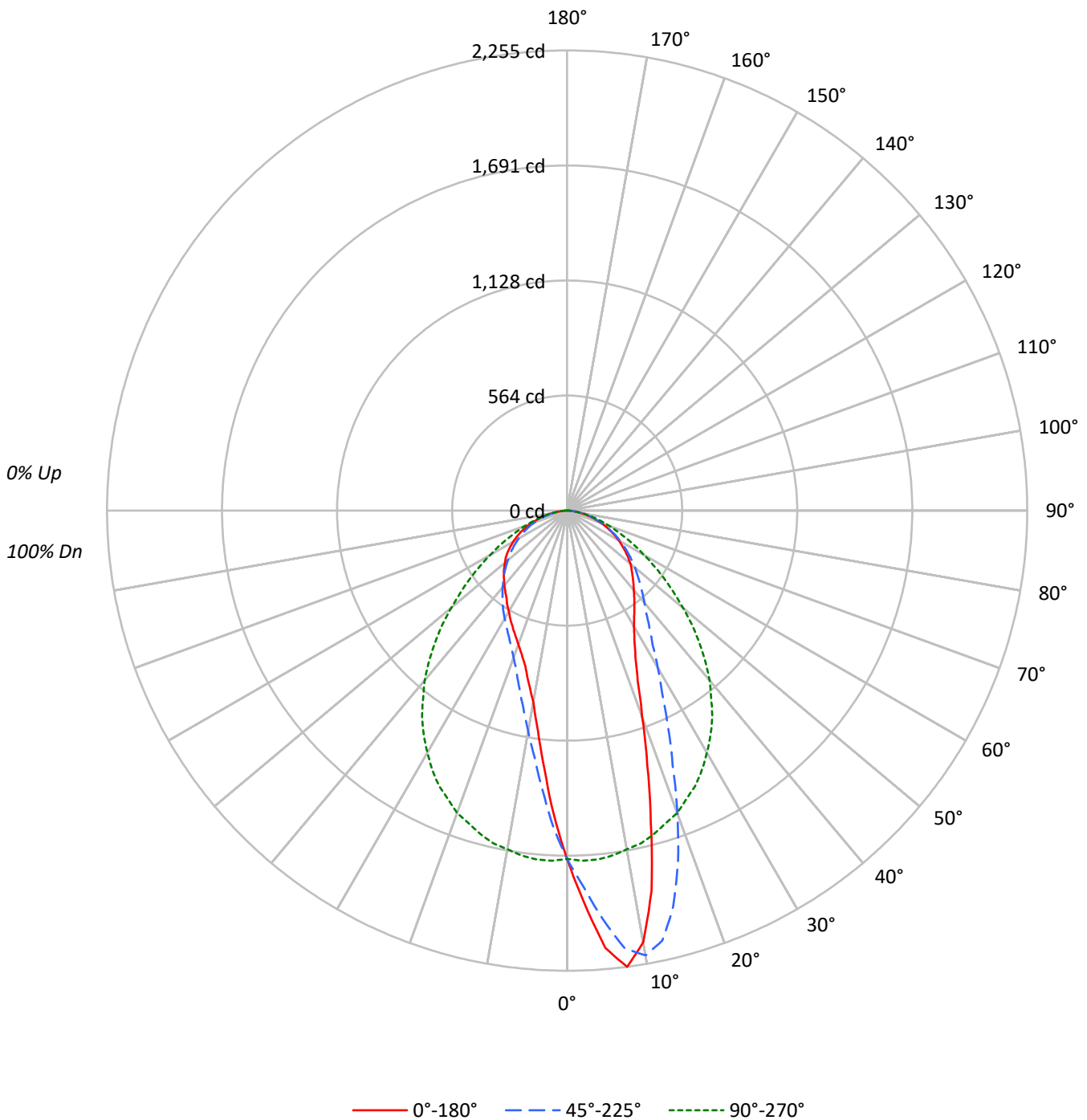
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2742.9 lumens  
Efficiency: N/A  
Efficacy: 106.7 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				
2	101	94	88	82	99	92	86	82	88	84	80	85	81	78	82	79	76					74				
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66					64				
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58					56				
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52					50				
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47					45				
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42					40				
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39					37				
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35					34				
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33					31				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	20570	20570	20570	20570	20570
5°	26014	24328	20754	16643	15369
10°	26266	27081	20616	13444	11650
15°	19783	25061	20475	11265	9852
20°	13784	20265	20213	9822	8949
25°	10511	15546	19768	9005	8394
30°	9094	12355	19057	8509	7947
35°	8436	10348	18237	8111	7633
40°	7987	9258	17083	7737	7526
45°	7721	8598	15619	7411	7479
50°	7588	8122	13885	7127	7440
55°	7306	7672	12182	6874	7472
60°	7044	7254	10500	6625	7350
65°	6617	6797	9058	6346	7205
70°	6112	6306	7701	6000	6782
75°	5531	5717	6601	5493	6196
80°	4566	4892	5225	4781	5225
85°	3608	3940	3829	4161	4161

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 17832 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.4	5.9
10°-20°	401.6	14.6
20°-30°	475.3	17.3
30°-40°	477.7	17.4
40°-50°	438.1	16.0
50°-60°	361.6	13.2
60°-70°	255.9	9.3
70°-80°	136.7	5.0
80°-90°	34.7	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°	1038.3	37.9
0°-40°	1516.0	55.3
0°-60°	2315.7	84.4
0°-90°	2742.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2742.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1707	1707	1707	1707	1707	
5°	2151	2011	1716	1376	1271	205
15°	1586	2009	1641	903	790	438
25°	791	1169	1487	677	631	373
35°	574	704	1240	551	519	360
45°	453	505	917	435	439	351
55°	348	365	580	327	356	311
65°	232	238	318	223	253	231
75°	119	123	142	118	133	125
85°	26	28	28	30	30	31
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°	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2
2.5°	1924.2	1920.2	1900.4	1887.8	1890.9	1862.4	1845.0	1830.7	1821.2	1798.3	1786.4
5°	2150.8	2161.9	2149.2	2142.9	2110.4	2058.9	2011.4	2001.1	1956.7	1902.0	1883.0
7.5°	2255.3	2261.7	2253.8	2253.8	2243.5	2197.5	2164.2	2138.1	2062.0	1991.5	1959.1
10°	2146.8	2161.1	2192.0	2206.2	2226.8	2220.5	2213.4	2203.1	2151.6	2070.0	2032.7
12.5°	1908.4	1925.8	1987.6	1996.3	2066.8	2134.9	2157.1	2182.5	2187.2	2118.3	2077.9
15°	1585.9	1634.3	1690.5	1717.5	1807.0	1950.4	2009.0	2077.9	2159.5	2131.0	2099.3
17.5°	1306.3	1324.5	1384.7	1441.8	1531.3	1696.9	1805.4	1908.4	2083.4	2112.0	2092.2
20°	1075.0	1091.6	1170.8	1166.9	1285.7	1471.9	1580.4	1699.2	1957.5	2050.2	2046.2
22.5°	903.1	929.2	973.6	998.1	1083.7	1249.3	1352.3	1500.4	1814.1	1960.7	1976.5
25°	790.6	809.6	836.5	857.9	924.5	1060.7	1169.3	1291.3	1633.5	1843.4	1883.0
27.5°	713.8	721.7	748.6	761.3	805.6	922.9	1006.9	1118.6	1466.3	1711.9	1767.4
30°	653.6	659.1	682.9	686.8	721.7	806.4	888.0	979.1	1303.1	1576.4	1639.8
32.5°	611.6	615.5	633.7	635.3	661.5	723.3	780.3	865.9	1148.7	1431.5	1509.9
35°	573.5	575.9	589.4	593.3	610.0	656.7	703.5	769.2	1025.9	1300.8	1387.1
37.5°	540.3	543.4	551.4	556.1	569.6	606.8	638.5	693.2	907.8	1164.5	1260.4
40°	507.8	513.3	518.9	518.9	533.9	562.4	588.6	633.7	806.4	1045.7	1130.4
42.5°	480.1	485.6	488.0	488.8	496.7	522.8	545.0	575.9	729.6	940.3	1023.5
45°	453.1	455.5	457.9	459.5	465.0	488.0	504.6	533.9	656.7	842.9	923.7
47.5°	428.6	428.6	430.2	432.5	436.5	453.1	467.4	488.8	594.1	755.7	822.3
50°	404.8	404.8	402.4	404.0	406.4	419.1	433.3	450.8	535.5	675.7	735.1
52.5°	376.3	376.3	377.1	374.7	377.1	388.2	399.3	416.7	485.6	602.1	652.8
55°	347.8	350.9	348.6	347.0	350.1	357.3	365.2	380.2	438.9	543.4	583.8
57.5°	319.2	320.8	320.0	322.4	320.8	327.2	334.3	344.6	396.9	477.7	515.7
60°	292.3	292.3	290.7	292.3	292.3	295.5	301.0	311.3	354.1	421.4	453.1
62.5°	262.2	263.0	263.8	263.0	262.2	266.2	270.9	278.1	316.9	366.8	390.5
65°	232.1	232.9	235.3	234.5	233.7	237.7	238.4	246.4	275.7	318.5	335.9
67.5°	205.2	203.6	204.4	206.0	206.8	207.6	209.1	217.1	237.7	272.5	286.8
70°	173.5	175.1	174.3	176.7	175.1	177.4	179.0	184.6	204.4	227.4	236.9
72.5°	145.0	145.8	145.8	148.1	147.3	149.7	151.3	153.7	167.9	188.5	192.5
75°	118.8	118.8	120.4	121.2	121.2	121.2	122.8	124.4	136.3	148.9	152.9
77.5°	90.3	94.3	93.5	94.3	95.1	97.4	95.9	99.0	106.2	113.3	115.7
80°	65.8	65.8	66.5	67.3	68.9	70.5	70.5	73.7	76.8	80.8	83.2
82.5°	42.0	42.8	45.2	45.9	46.7	49.1	49.1	49.1	53.1	54.7	54.7
85°	26.1	24.6	26.1	26.9	27.7	28.5	28.5	30.1	30.9	31.7	31.7
87.5°	12.7	12.7	12.7	12.7	13.5	13.5	13.5	13.5	14.3	14.3	14.3
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°	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2	1707.2
2.5°	1746.8	1717.5	1673.9	1638.2	1639.8	1607.3	1583.6	1552.7	1543.2	1533.7	1521.0
5°	1783.2	1715.9	1625.6	1553.5	1531.3	1477.4	1409.3	1376.0	1356.2	1321.4	1307.9
7.5°	1828.4	1704.8	1566.9	1454.4	1429.9	1340.4	1259.6	1220.0	1182.7	1158.2	1128.1
10°	1857.7	1685.0	1507.5	1358.6	1334.8	1232.6	1127.3	1098.8	1052.0	1021.9	993.4
12.5°	1879.8	1669.9	1446.5	1273.0	1234.2	1135.2	1029.0	990.2	956.2	912.6	892.0
15°	1899.7	1641.4	1383.9	1183.5	1143.1	1036.2	937.9	903.1	872.2	834.2	815.9
17.5°	1892.5	1606.5	1315.0	1104.3	1063.9	958.5	864.3	824.7	804.1	770.8	758.1
20°	1883.8	1576.4	1250.1	1029.0	984.7	886.5	794.6	766.0	745.4	724.1	713.0
22.5°	1856.1	1528.9	1184.3	960.1	918.1	819.9	741.5	717.7	701.9	686.8	677.3
25°	1809.3	1486.9	1120.1	891.2	857.9	766.0	699.5	677.3	667.0	652.0	643.3
27.5°	1751.5	1431.5	1056.0	835.0	796.9	715.3	658.3	644.0	633.0	621.1	612.4
30°	1678.6	1369.7	993.4	780.3	745.4	673.4	624.2	611.6	601.3	589.4	579.1
32.5°	1585.9	1307.1	934.8	729.6	700.3	637.7	592.6	582.3	573.5	559.3	553.7
35°	1482.2	1239.8	876.9	681.3	653.6	598.9	561.7	551.4	542.6	530.8	526.0
37.5°	1376.8	1159.8	819.9	640.1	615.5	566.4	530.8	520.5	512.5	502.2	499.9
40°	1265.1	1086.1	763.7	598.1	576.7	534.7	499.9	491.9	484.0	477.7	476.1
42.5°	1152.6	1001.3	714.5	563.2	540.3	501.5	469.8	461.0	456.3	453.1	453.9
45°	1046.5	916.6	663.8	522.8	507.0	471.3	442.0	434.9	430.9	428.6	431.7
47.5°	931.6	830.2	616.3	488.8	472.9	441.2	413.5	407.2	405.6	404.8	410.4
50°	830.2	740.7	564.8	453.9	440.5	408.0	385.8	380.2	378.7	381.0	389.0
52.5°	734.4	657.5	518.1	421.4	408.0	378.7	358.1	354.1	353.3	358.9	366.8
55°	639.3	579.9	467.4	385.8	372.3	347.0	331.1	327.2	326.4	337.5	344.6
57.5°	558.5	504.6	419.9	351.7	341.4	317.7	303.4	300.2	302.6	312.9	320.0
60°	479.3	435.7	376.3	315.3	307.4	286.8	275.7	274.9	277.3	289.1	296.3
62.5°	408.0	374.7	329.5	282.0	276.5	258.3	248.0	249.5	251.9	263.8	270.1
65°	347.0	317.7	283.6	248.7	241.6	228.9	221.8	222.6	227.4	237.7	244.0
67.5°	287.6	263.8	244.8	217.1	211.5	200.4	194.9	198.0	200.4	210.7	217.1
70°	237.7	218.6	204.4	183.8	179.8	170.3	166.4	170.3	172.7	181.4	189.3
72.5°	190.9	179.0	167.9	152.9	148.9	142.6	141.8	143.4	147.3	156.1	159.2
75°	148.1	141.8	132.3	122.8	120.4	117.2	116.5	118.0	122.0	126.7	129.9
77.5°	112.5	106.9	99.8	95.9	92.7	91.1	91.9	94.3	95.9	100.6	103.0
80°	81.6	75.3	73.7	68.1	67.3	66.5	68.1	68.9	71.3	74.5	76.0
82.5°	53.9	49.1	47.5	46.7	45.9	45.2	47.5	48.3	49.9	52.3	53.1
85°	29.3	27.7	27.7	26.9	27.7	29.3	29.3	30.1	30.1	30.9	30.1
87.5°	13.5	11.9	12.7	12.7	12.7	13.5	13.5	14.3	14.3	14.3	13.5
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°	1707.2	1707.2	1707.2
2.5°	1520.2	1514.7	1492.5
5°	1296.0	1277.0	1270.7
7.5°	1124.9	1123.3	1090.0
10°	979.9	982.3	952.2
12.5°	888.8	869.0	866.6
15°	811.2	793.0	789.8
17.5°	753.4	742.3	739.1
20°	709.8	703.5	697.9
22.5°	674.9	667.0	662.3
25°	640.1	633.0	631.4
27.5°	610.0	601.3	601.3
30°	579.1	573.5	571.2
32.5°	551.4	546.6	546.6
35°	524.4	522.0	518.9
37.5°	499.9	499.9	498.3
40°	476.1	478.5	478.5
42.5°	455.5	457.9	457.9
45°	433.3	437.3	438.9
47.5°	411.1	417.5	419.1
50°	391.3	396.1	396.9
52.5°	369.9	375.5	379.5
55°	347.8	353.3	355.7
57.5°	324.0	329.5	330.3
60°	297.9	303.4	305.0
62.5°	274.1	277.3	278.8
65°	244.8	249.5	252.7
67.5°	217.9	221.8	221.8
70°	188.5	190.1	192.5
72.5°	160.8	161.6	161.6
75°	130.7	132.3	133.1
77.5°	103.0	103.8	103.8
80°	76.0	75.3	75.3
82.5°	53.1	50.7	50.7
85°	30.1	29.3	30.1
87.5°	13.5	13.5	13.5
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	17.99	19.50	18.36	19.82	20.13	20.45	21.96	20.81	22.27	22.58
	3H	19.69	21.04	20.06	21.37	21.73	21.66	23.02	22.04	23.34	23.71
	4H	20.29	21.56	20.69	21.91	22.29	22.08	23.36	22.48	23.70	24.08
	6H	20.69	21.87	21.11	22.24	22.63	22.36	23.53	22.77	23.90	24.29
	8H	20.80	21.92	21.22	22.30	22.71	22.42	23.54	22.85	23.93	24.33
	12H	20.85	21.92	21.28	22.31	22.73	22.46	23.53	22.89	23.91	24.34
4H	2H	18.64	19.91	19.04	20.26	20.64	20.67	21.94	21.07	22.29	22.67
	3H	20.53	21.59	20.94	21.99	22.39	22.15	23.21	22.56	23.61	24.01
	4H	21.25	22.20	21.68	22.62	23.06	22.72	23.67	23.15	24.09	24.52
	6H	21.76	22.59	22.22	23.03	23.49	23.11	23.94	23.57	24.38	24.84
	8H	21.90	22.67	22.36	23.12	23.58	23.22	23.99	23.68	24.44	24.90
	12H	21.98	22.68	22.47	23.15	23.63	23.28	23.97	23.76	24.45	24.92
8H	4H	21.57	22.35	22.04	22.79	23.26	22.88	23.66	23.35	24.10	24.57
	6H	22.19	22.83	22.68	23.32	23.80	23.38	24.01	23.87	24.51	24.98
	8H	22.38	22.96	22.90	23.47	23.96	23.54	24.11	24.05	24.62	25.11
	12H	22.53	23.03	23.04	23.53	24.09	23.66	24.16	24.17	24.65	25.22
12H	4H	21.61	22.30	22.09	22.78	23.25	22.89	23.58	23.37	24.06	24.53
	6H	22.24	22.81	22.75	23.32	23.81	23.39	23.97	23.91	24.48	24.97
	8H	22.49	23.00	23.00	23.49	24.05	23.60	24.11	24.11	24.60	25.17