

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: P646698

Luminaire Tested: S123RDRP-S775D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2024  
Report Number: P646698  
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-S775D927-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: -

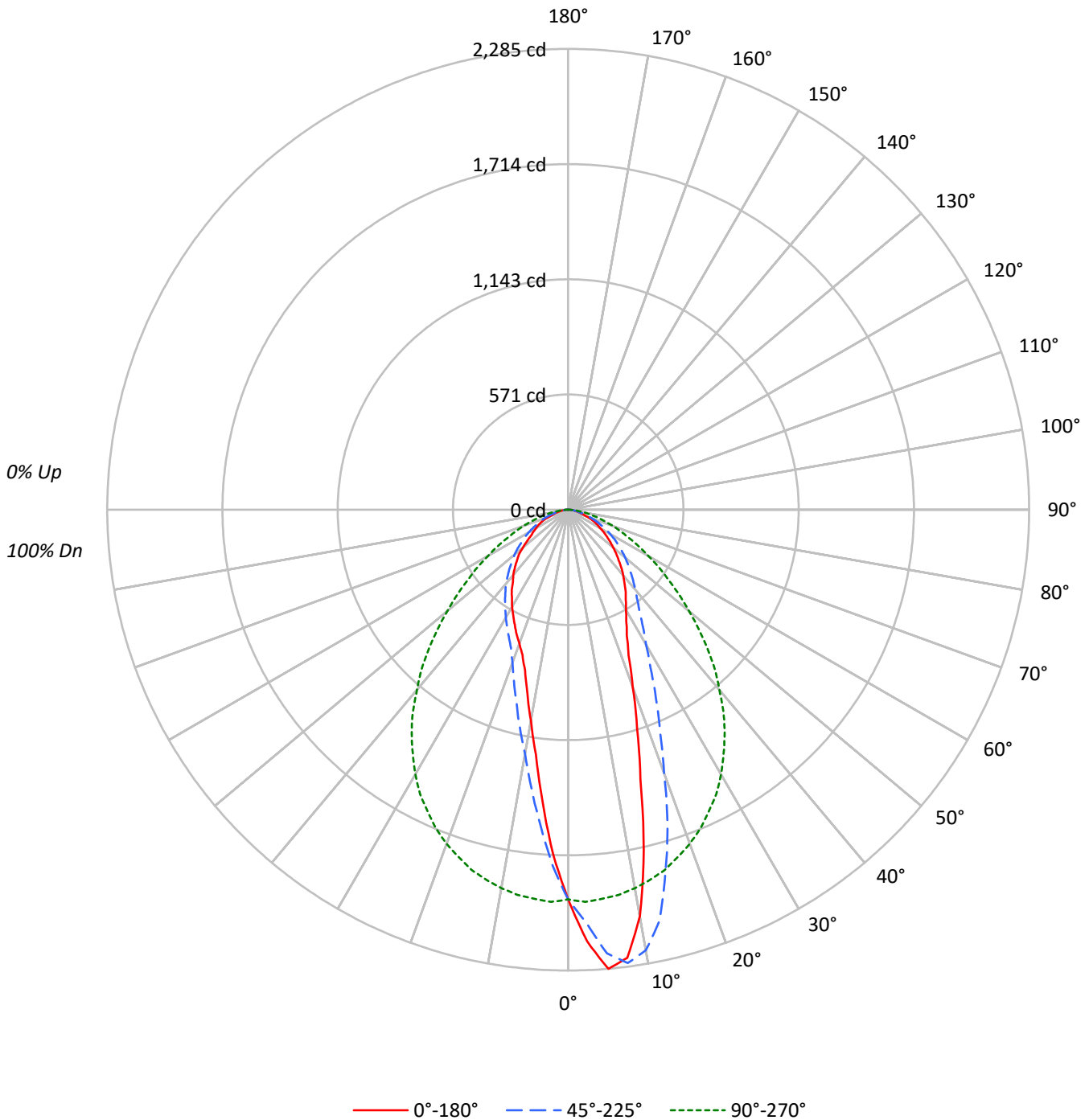
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2559.8 lumens  
Efficiency: N/A  
Efficacy: 98.5 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): 26  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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	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°	23280	23280	23280	23280	23280
5°	27642	26704	23427	19000	17583
10°	25045	27139	23310	15043	13017
15°	17244	23242	23065	12352	10297
20°	11997	17827	22601	10350	9050
25°	9142	13680	21927	9247	8341
30°	7958	10758	21084	8597	7726
35°	7306	9054	19891	8017	7166
40°	6666	8124	18329	7526	6653
45°	6020	7438	16645	6993	6141
50°	5464	6906	14657	6505	5509
55°	4943	6340	12747	5941	4727
60°	4429	5764	11073	5441	4468
65°	4088	5126	9531	4833	4222
70°	3322	4383	8318	4383	3431
75°	2914	3538	7044	3650	3026
80°	2637	2970	5773	3081	2859
85°	2406	2516	4382	2737	2627

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 17562 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	176.1	6.9
10°-20°	407.4	15.9
20°-30°	467.4	18.3
30°-40°	460.4	18.0
40°-50°	405.8	15.9
50°-60°	312.3	12.2
60°-70°	205.4	8.0
70°-80°	99.7	3.9
80°-90°	25.1	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°	1050.9	41.1
0°-40°	1511.4	59.0
0°-60°	2229.5	87.1
0°-90°	2559.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2559.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1932	1932	1932	1932	1932	
5°	2285	2208	1937	1571	1454	209
15°	1382	1863	1849	990	826	390
25°	688	1029	1649	696	627	325
35°	497	616	1352	545	487	310
45°	353	436	977	410	360	274
55°	235	302	607	283	225	211
65°	143	180	334	170	148	141
75°	63	76	151	78	65	67
85°	17	18	32	20	19	20
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°	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1
2.5°	2141.3	2127.8	2123.8	2119.1	2111.2	2082.6	2050.2	2053.3	2049.4	2024.8	2011.3
5°	2285.4	2287.0	2283.1	2279.9	2266.4	2231.6	2207.8	2193.6	2163.4	2117.5	2103.2
7.5°	2241.1	2266.4	2271.2	2276.7	2283.9	2275.9	2267.2	2261.7	2237.1	2187.2	2164.2
10°	2047.0	2045.4	2073.9	2096.9	2158.7	2202.3	2218.1	2241.1	2261.7	2226.8	2201.5
12.5°	1730.1	1732.5	1826.0	1826.0	1906.0	2016.9	2088.2	2136.5	2225.2	2227.6	2212.6
15°	1382.4	1421.2	1504.4	1521.8	1624.8	1773.7	1863.2	1963.0	2134.9	2188.8	2185.6
17.5°	1135.2	1151.8	1231.8	1254.8	1345.9	1514.7	1638.2	1758.6	1999.5	2112.7	2133.3
20°	935.6	950.6	1008.4	1025.9	1117.8	1278.6	1390.3	1520.2	1835.5	2009.0	2045.4
22.5°	781.1	810.4	849.2	876.2	928.4	1092.4	1188.3	1312.6	1645.4	1892.5	1935.3
25°	687.6	701.1	734.4	747.0	810.4	918.9	1029.0	1138.4	1476.6	1746.8	1822.0
27.5°	624.2	628.2	652.8	663.8	701.9	802.5	881.7	983.1	1304.7	1597.0	1685.0
30°	572.0	579.1	598.1	600.5	633.7	705.0	773.2	866.6	1154.2	1452.1	1542.4
32.5°	531.6	535.5	551.4	556.1	577.5	633.7	689.2	757.3	1014.8	1300.8	1404.5
35°	496.7	497.5	509.4	515.7	534.7	581.5	615.5	672.6	903.1	1175.6	1266.7
37.5°	457.1	462.6	471.3	476.9	493.5	531.6	562.4	606.8	800.1	1056.8	1141.5
40°	423.8	428.6	438.9	441.2	456.3	491.2	516.5	556.1	711.4	942.7	1029.0
42.5°	390.5	393.7	404.0	408.8	425.4	453.1	476.1	507.0	640.9	841.3	926.1
45°	353.3	361.2	372.3	374.7	390.5	419.1	436.5	465.0	577.5	753.4	828.6
47.5°	322.4	326.4	335.9	339.8	358.1	383.4	401.6	426.2	522.8	673.4	747.0
50°	291.5	293.1	301.8	307.4	321.6	350.9	368.4	390.5	472.9	608.4	659.9
52.5°	262.2	266.2	274.9	278.8	288.4	318.5	334.3	357.3	425.4	541.9	593.3
55°	235.3	237.7	244.0	248.7	259.8	286.0	301.8	321.6	384.2	480.9	526.0
57.5°	209.9	213.1	217.8	221.8	232.1	255.1	270.9	290.7	345.4	425.4	460.3
60°	183.8	187.7	193.3	194.9	204.4	225.0	239.2	256.7	305.8	373.9	404.8
62.5°	164.8	165.6	170.3	172.7	178.2	194.9	209.9	226.6	270.1	324.0	349.4
65°	143.4	145.8	148.1	149.7	154.5	168.7	179.8	192.5	235.3	282.0	299.4
67.5°	121.2	123.6	127.5	129.1	133.1	142.6	152.1	164.8	200.4	240.0	255.9
70°	94.3	94.3	100.6	103.8	110.1	117.2	124.4	135.5	166.4	200.4	212.3
72.5°	76.8	77.6	78.4	78.4	84.0	95.9	99.8	106.9	131.5	164.0	174.3
75°	62.6	63.4	64.2	65.0	65.8	69.7	76.0	82.4	100.6	124.4	133.9
77.5°	49.9	50.7	51.5	51.5	53.1	54.7	56.2	59.4	72.1	89.5	97.4
80°	38.0	38.8	39.6	39.6	40.4	42.0	42.8	44.4	48.3	60.2	64.2
82.5°	27.7	27.7	27.7	28.5	29.3	29.3	30.9	30.9	33.3	36.4	38.8
85°	17.4	17.4	18.2	18.2	18.2	19.0	18.2	19.0	19.8	20.6	22.2
87.5°	7.9	7.1	7.9	7.9	7.9	8.7	8.7	8.7	8.7	9.5	9.5
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):**

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1
2.5°	1974.1	1946.4	1899.7	1870.3	1859.3	1825.2	1792.7	1765.8	1752.3	1750.7	1726.2
5°	2012.9	1936.9	1840.2	1759.4	1740.4	1681.0	1604.2	1570.9	1527.3	1509.9	1489.3
7.5°	2044.6	1925.8	1783.2	1661.2	1625.6	1536.0	1437.8	1394.2	1361.0	1308.7	1277.8
10°	2066.8	1905.2	1713.5	1555.8	1505.1	1400.6	1281.8	1229.5	1198.6	1138.4	1113.8
12.5°	2075.5	1879.1	1643.8	1446.5	1402.2	1277.8	1161.3	1107.5	1061.5	1006.9	983.1
15°	2072.3	1849.0	1572.5	1345.9	1290.5	1164.5	1040.9	990.2	947.4	892.8	861.9
17.5°	2051.0	1806.2	1494.8	1248.5	1195.4	1065.5	940.3	893.6	855.6	802.5	778.7
20°	2015.3	1762.6	1426.7	1159.8	1099.5	975.2	857.1	807.2	774.0	745.4	728.0
22.5°	1966.2	1711.1	1343.5	1071.8	1019.5	894.4	781.1	740.7	720.9	697.9	685.2
25°	1891.7	1649.3	1268.3	998.1	945.9	821.5	722.5	695.5	675.7	660.7	647.2
27.5°	1811.7	1589.9	1193.0	923.7	874.6	755.7	676.5	655.9	638.5	619.5	607.6
30°	1719.0	1515.4	1121.7	857.9	810.4	702.7	636.9	617.9	603.6	583.0	571.2
32.5°	1609.7	1433.8	1055.2	794.6	750.2	656.7	600.5	579.9	568.0	548.2	536.3
35°	1496.4	1352.3	982.3	735.9	695.5	616.3	564.8	545.0	532.3	512.5	500.7
37.5°	1385.5	1265.1	917.3	684.4	648.0	575.9	527.6	511.0	499.1	478.5	464.2
40°	1268.3	1165.3	854.0	636.1	602.1	540.3	493.5	478.5	462.6	444.4	430.2
42.5°	1145.5	1077.4	795.4	593.3	561.7	505.4	459.5	443.6	430.2	408.8	402.4
45°	1030.6	976.8	733.6	548.2	522.8	470.6	426.2	410.4	395.3	377.1	370.7
47.5°	928.4	878.5	677.3	508.6	483.2	436.5	392.9	376.3	365.2	350.9	341.4
50°	823.1	781.9	615.5	469.8	446.0	400.1	358.1	347.0	334.3	316.9	309.7
52.5°	724.8	693.2	564.8	432.5	410.4	369.2	326.4	315.3	303.4	288.4	278.1
55°	638.5	606.8	507.0	390.5	373.9	335.1	297.1	282.8	273.3	255.9	243.2
57.5°	549.8	534.7	451.5	355.7	339.8	301.0	267.0	255.9	244.0	225.0	212.3
60°	476.9	459.5	400.1	317.7	302.6	270.1	236.9	225.8	214.7	196.5	190.9
62.5°	408.0	395.3	350.1	282.0	269.3	237.7	208.3	198.0	187.0	175.1	171.1
65°	345.4	334.3	300.2	245.6	235.3	207.6	180.6	169.5	162.4	156.9	152.9
67.5°	286.8	280.4	254.3	211.5	203.6	179.0	155.3	146.6	142.6	136.3	133.1
70°	233.7	236.1	212.3	180.6	171.9	152.1	131.5	124.4	119.6	114.1	107.7
72.5°	190.9	190.1	175.9	147.3	141.0	125.2	109.3	104.6	99.0	87.9	80.8
75°	148.1	151.3	137.8	122.0	115.7	99.8	84.8	78.4	72.9	68.9	66.5
77.5°	113.3	114.9	108.5	93.5	87.9	74.5	62.6	59.4	57.0	54.7	53.9
80°	80.8	83.2	76.8	67.3	62.6	51.5	45.2	44.4	43.6	42.0	41.2
82.5°	52.3	55.5	52.3	42.0	39.6	34.1	32.5	32.5	31.7	30.9	30.1
85°	28.5	31.7	30.1	24.6	23.0	21.4	20.6	19.8	19.8	19.8	19.8
87.5°	11.1	15.1	12.7	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
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):**

	160°	170°	180°
0°	1932.1	1932.1	1932.1
2.5°	1720.6	1712.7	1709.5
5°	1483.8	1459.2	1453.7
7.5°	1268.3	1258.0	1223.9
10°	1109.8	1078.2	1063.9
12.5°	967.3	937.9	933.2
15°	853.2	832.6	825.5
17.5°	777.9	763.7	754.9
20°	722.5	712.2	705.8
22.5°	680.5	672.6	667.8
25°	643.3	631.4	627.4
27.5°	605.2	594.9	591.0
30°	569.6	560.9	555.3
32.5°	532.3	522.0	518.9
35°	496.7	490.4	487.2
37.5°	461.8	453.9	449.2
40°	429.4	425.4	423.0
42.5°	400.1	392.9	392.1
45°	369.2	362.0	360.4
47.5°	339.8	333.5	332.7
50°	309.0	300.2	293.9
52.5°	271.7	263.8	258.3
55°	238.4	229.7	225.0
57.5°	210.7	206.8	204.4
60°	189.3	187.0	185.4
62.5°	170.3	167.9	167.9
65°	152.9	150.5	148.1
67.5°	131.5	126.7	126.0
70°	105.4	98.2	97.4
72.5°	80.0	79.2	77.6
75°	66.5	65.0	65.0
77.5°	53.9	52.3	52.3
80°	41.2	40.4	41.2
82.5°	30.1	30.1	29.3
85°	19.8	19.0	19.0
87.5°	9.5	9.5	9.5
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	15.63	17.09	16.00	17.40	17.72	20.73	22.19	21.09	22.50	22.81
	3H	16.97	18.27	17.35	18.60	18.96	22.01	23.31	22.39	23.64	24.00
	4H	17.37	18.59	17.77	18.94	19.32	22.45	23.67	22.85	24.02	24.40
	6H	17.67	18.80	18.09	19.17	19.56	22.75	23.87	23.16	24.24	24.63
	8H	17.77	18.84	18.20	19.23	19.64	22.82	23.89	23.25	24.28	24.69
	12H	17.84	18.87	18.27	19.25	19.68	22.86	23.89	23.29	24.27	24.70
4H	2H	16.49	17.70	16.89	18.05	18.43	20.77	21.99	21.17	22.34	22.72
	3H	17.96	18.97	18.37	19.37	19.77	22.26	23.27	22.67	23.67	24.07
	4H	18.42	19.33	18.86	19.75	20.19	22.81	23.72	23.25	24.14	24.58
	6H	18.81	19.60	19.27	20.04	20.50	23.25	24.04	23.71	24.49	24.95
	8H	18.94	19.67	19.40	20.12	20.59	23.37	24.11	23.84	24.55	25.02
	12H	19.04	19.69	19.52	20.17	20.64	23.45	24.10	23.93	24.58	25.06
8H	4H	18.81	19.55	19.28	19.99	20.46	22.82	23.56	23.29	24.00	24.47
	6H	19.28	19.88	19.78	20.38	20.86	23.31	23.91	23.81	24.41	24.89
	8H	19.46	20.00	19.98	20.52	21.01	23.47	24.01	23.99	24.53	25.02
	12H	19.62	20.10	20.13	20.59	21.16	23.60	24.08	24.11	24.57	25.14
12H	4H	18.86	19.51	19.34	19.99	20.46	22.80	23.45	23.28	23.93	24.40
	6H	19.34	19.89	19.86	20.40	20.89	23.28	23.83	23.80	24.34	24.83
	8H	19.58	20.06	20.09	20.55	21.12	23.48	23.96	23.99	24.45	25.02