

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: P646656

Luminaire Tested: S123DRP-S775D940-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646656
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-S775D940-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

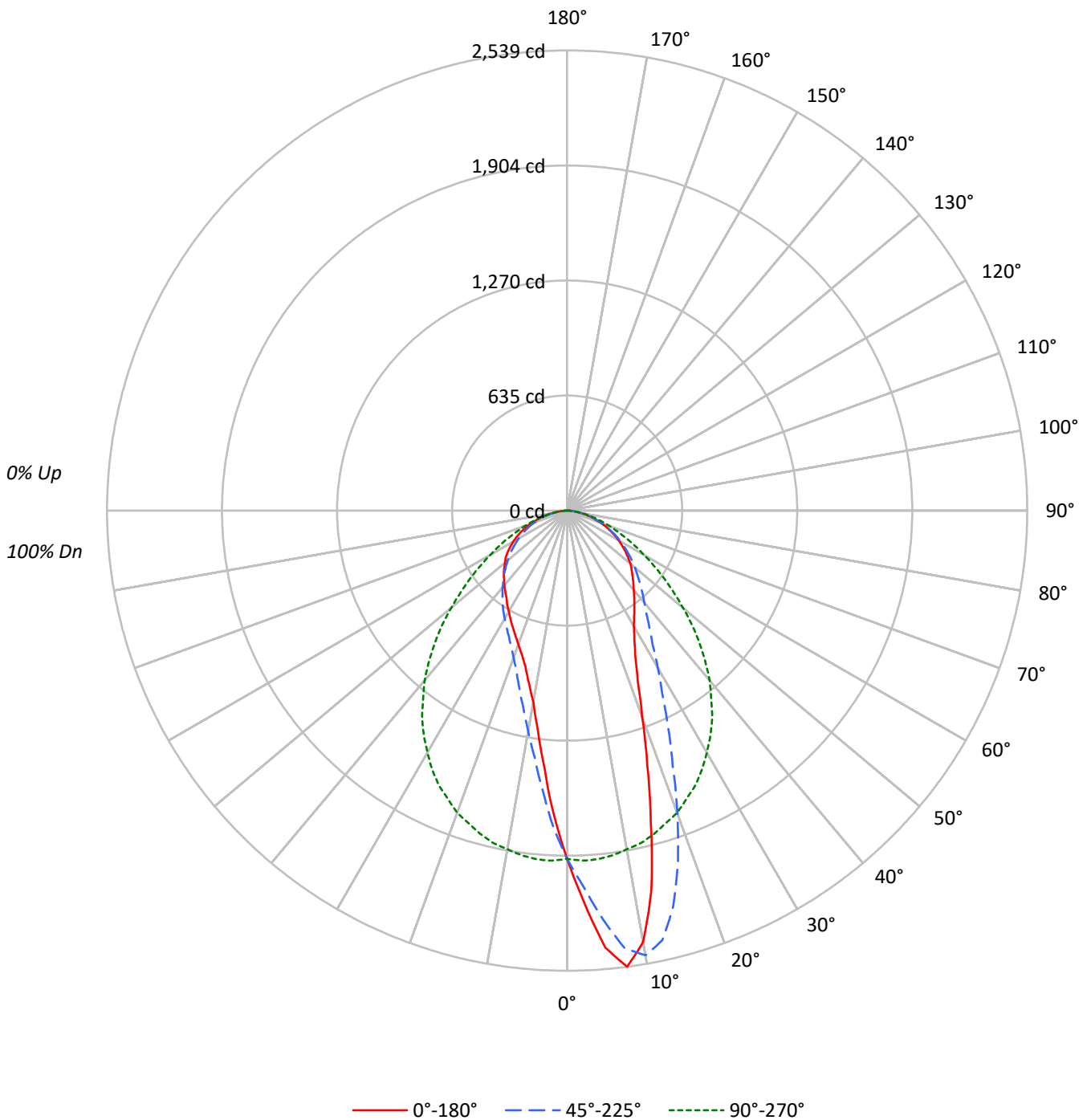
Lumens per Lamp: N/A
Luminaire Lumens: 3087.5 lumens
Efficiency: N/A
Efficacy: 120.1 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 25.7
Input Voltage (V): 120
Input Current (A_{in}): 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: P646656

CATALOG NUMBER: S123DRP-S775D940-X4F0-XX-UDD-G-W

Luminous Intensity Polar Plot



TEST NUMBER: P646656

CATALOG NUMBER: S123DRP-S775D940-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°	23154	23154	23154	23154	23154
5°	29282	27385	23361	18734	17300
10°	29566	30482	23206	15132	13114
15°	22269	28209	23047	12681	11090
20°	15516	22811	22753	11057	10073
25°	11831	17499	22251	10136	9449
30°	10236	13908	21451	9578	8945
35°	9496	11647	20527	9129	8592
40°	8991	10421	19229	8711	8472
45°	8692	9679	17580	8341	8418
50°	8542	9144	15630	8023	8373
55°	8224	8636	13711	7737	8411
60°	7928	8167	11818	7456	8273
65°	7450	7652	10195	7145	8111
70°	6880	7099	8670	6753	7634
75°	6229	6434	7430	6187	6974
80°	5135	5509	5877	5385	5877
85°	4065	4438	4313	4687	4687

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 20073 cd/sqm



TEST NUMBER: P646656

CATALOG NUMBER: S123DRP-S775D940-X4F0-XX-UDD-G-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	181.7	5.9
10°-20°	452.0	14.6
20°-30°	535.1	17.3
30°-40°	537.7	17.4
40°-50°	493.1	16.0
50°-60°	407.0	13.2
60°-70°	288.0	9.3
70°-80°	153.8	5.0
80°-90°	39.0	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°	1168.8	37.9
0°-40°	1706.5	55.3
0°-60°	2606.7	84.4
0°-90°	3087.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3087.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1922	1922	1922	1922	1922	
5°	2421	2264	1931	1549	1430	231
15°	1785	2261	1848	1017	889	493
25°	890	1316	1674	762	711	420
35°	646	792	1396	621	584	406
45°	510	568	1032	490	494	395
55°	392	411	653	368	400	350
65°	261	268	358	251	284	260
75°	134	138	160	133	150	141
85°	29	32	31	34	34	35
90°	0	0	0	0	0	



TEST NUMBER: P646656

CATALOG NUMBER: S123DRP-S775D940-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6
2.5°	2166.0	2161.5	2139.2	2124.9	2128.5	2096.4	2076.8	2060.7	2050.0	2024.2	2010.8
5°	2421.0	2433.5	2419.2	2412.1	2375.5	2317.6	2264.1	2252.5	2202.5	2141.0	2119.6
7.5°	2538.7	2545.8	2536.9	2536.9	2525.3	2473.6	2436.2	2406.7	2321.1	2241.8	2205.2
10°	2416.5	2432.6	2467.4	2483.4	2506.6	2499.5	2491.4	2479.8	2421.9	2330.0	2288.1
12.5°	2148.1	2167.8	2237.3	2247.1	2326.5	2403.2	2428.1	2456.7	2462.0	2384.4	2339.0
15°	1785.2	1839.6	1902.9	1933.2	2034.0	2195.4	2261.4	2339.0	2430.8	2398.7	2363.0
17.5°	1470.4	1490.9	1558.7	1622.9	1723.7	1910.0	2032.2	2148.1	2345.2	2377.3	2355.0
20°	1210.1	1228.8	1317.9	1313.5	1447.2	1656.8	1779.0	1912.7	2203.4	2307.7	2303.3
22.5°	1016.6	1046.0	1095.9	1123.6	1219.9	1406.2	1522.2	1688.9	2042.0	2207.0	2224.8
25°	889.9	911.3	941.6	965.7	1040.6	1194.0	1316.2	1453.5	1838.7	2075.0	2119.6
27.5°	803.4	812.3	842.7	856.9	906.9	1038.8	1133.4	1259.1	1650.6	1927.0	1989.4
30°	735.7	741.9	768.7	773.1	812.3	907.8	999.6	1102.2	1466.9	1774.5	1845.8
32.5°	688.4	692.9	713.4	715.2	744.6	814.1	878.3	974.6	1293.0	1611.3	1699.6
35°	645.6	648.3	663.4	667.9	686.6	739.2	791.8	865.9	1154.8	1464.2	1561.4
37.5°	608.1	611.7	620.6	626.0	641.1	683.1	718.7	780.2	1021.9	1310.8	1418.7
40°	571.6	577.8	584.1	584.1	601.0	633.1	662.5	713.4	907.8	1177.1	1272.5
42.5°	540.4	546.6	549.3	550.2	559.1	588.5	613.5	648.3	821.3	1058.5	1152.1
45°	510.1	512.7	515.4	517.2	523.4	549.3	568.0	601.0	739.2	948.8	1039.7
47.5°	482.4	482.4	484.2	486.9	491.3	510.1	526.1	550.2	668.8	850.7	925.6
50°	455.7	455.7	453.0	454.8	457.4	471.7	487.8	507.4	602.8	760.6	827.5
52.5°	423.6	423.6	424.5	421.8	424.5	436.9	449.4	469.0	546.6	677.7	734.8
55°	391.5	395.0	392.4	390.6	394.1	402.2	411.1	428.0	494.0	611.7	657.2
57.5°	359.4	361.1	360.3	362.9	361.1	368.3	376.3	387.9	446.7	537.7	580.5
60°	329.0	329.0	327.3	329.0	329.0	332.6	338.9	350.4	398.6	474.4	510.1
62.5°	295.2	296.0	296.9	296.0	295.2	299.6	305.0	313.0	356.7	412.9	439.6
65°	261.3	262.2	264.8	263.9	263.1	267.5	268.4	277.3	310.3	358.5	378.1
67.5°	231.0	229.2	230.1	231.8	232.7	233.6	235.4	244.3	267.5	306.7	322.8
70°	195.3	197.1	196.2	198.9	197.1	199.7	201.5	207.8	230.1	255.9	266.6
72.5°	163.2	164.1	164.1	166.8	165.9	168.5	170.3	173.0	189.0	212.2	216.7
75°	133.8	133.8	135.5	136.4	136.4	136.4	138.2	140.0	153.4	167.6	172.1
77.5°	101.7	106.1	105.2	106.1	107.0	109.7	107.9	111.5	119.5	127.5	130.2
80°	74.0	74.0	74.9	75.8	77.6	79.4	79.4	82.9	86.5	91.0	93.6
82.5°	47.3	48.2	50.8	51.7	52.6	55.3	55.3	55.3	59.7	61.5	61.5
85°	29.4	27.6	29.4	30.3	31.2	32.1	32.1	33.9	34.8	35.7	35.7
87.5°	14.3	14.3	14.3	14.3	15.2	15.2	15.2	15.2	16.1	16.1	16.1
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: P646656

CATALOG NUMBER: S123DRP-S775D940-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6	1921.6
2.5°	1966.2	1933.2	1884.2	1844.1	1845.8	1809.3	1782.5	1747.8	1737.1	1726.4	1712.1
5°	2007.2	1931.4	1829.8	1748.6	1723.7	1663.0	1586.4	1548.9	1526.6	1487.4	1472.2
7.5°	2058.1	1919.0	1763.8	1637.2	1609.5	1508.8	1417.8	1373.2	1331.3	1303.7	1269.8
10°	2091.1	1896.7	1696.9	1529.3	1502.5	1387.5	1268.9	1236.8	1184.2	1150.3	1118.2
12.5°	2116.0	1879.7	1628.3	1433.0	1389.3	1277.8	1158.3	1114.6	1076.3	1027.3	1004.1
15°	2138.3	1847.6	1557.8	1332.2	1286.7	1166.4	1055.8	1016.6	981.8	939.0	918.5
17.5°	2130.3	1808.4	1480.2	1243.0	1197.6	1079.0	972.9	928.3	905.1	867.6	853.4
20°	2120.5	1774.5	1407.1	1158.3	1108.4	997.8	894.4	862.3	839.1	815.0	802.5
22.5°	2089.3	1721.0	1333.1	1080.8	1033.5	922.9	834.6	807.9	790.1	773.1	762.4
25°	2036.7	1673.7	1260.9	1003.2	965.7	862.3	787.4	762.4	750.8	733.9	724.1
27.5°	1971.6	1611.3	1188.7	939.9	897.1	805.2	741.0	725.0	712.5	699.1	689.3
30°	1889.5	1541.8	1118.2	878.3	839.1	758.0	702.7	688.4	676.8	663.4	651.8
32.5°	1785.2	1471.3	1052.2	821.3	788.3	717.8	667.0	655.4	645.6	629.5	623.3
35°	1668.4	1395.5	987.1	766.9	735.7	674.1	632.2	620.6	610.8	597.4	592.1
37.5°	1549.8	1305.5	922.9	720.5	692.9	637.6	597.4	585.9	576.9	565.3	562.7
40°	1424.1	1222.5	859.6	673.2	649.2	601.9	562.7	553.8	544.8	537.7	535.9
42.5°	1297.4	1127.1	804.3	634.0	608.1	564.5	528.8	519.0	513.6	510.1	511.0
45°	1178.0	1031.7	747.3	588.5	570.7	530.6	497.6	489.5	485.1	482.4	486.0
47.5°	1048.7	934.5	693.8	550.2	532.4	496.7	465.5	458.3	456.6	455.7	461.9
50°	934.5	833.8	635.8	511.0	495.8	459.2	434.3	428.0	426.2	428.9	437.8
52.5°	826.6	740.1	583.2	474.4	459.2	426.2	403.1	398.6	397.7	403.9	412.9
55°	719.6	652.7	526.1	434.3	419.1	390.6	372.7	368.3	367.4	379.9	387.9
57.5°	628.7	568.0	472.6	395.9	384.3	357.6	341.5	338.0	340.6	352.2	360.3
60°	539.5	490.4	423.6	354.9	346.0	322.8	310.3	309.4	312.1	325.5	333.5
62.5°	459.2	421.8	371.0	317.4	311.2	290.7	279.1	280.9	283.6	296.9	304.1
65°	390.6	357.6	319.2	280.0	272.0	257.7	249.7	250.6	255.9	267.5	274.6
67.5°	323.7	296.9	275.5	244.3	238.1	225.6	219.4	222.9	225.6	237.2	244.3
70°	267.5	246.1	230.1	206.9	202.4	191.7	187.3	191.7	194.4	204.2	213.1
72.5°	214.9	201.5	189.0	172.1	167.6	160.5	159.6	161.4	165.9	175.7	179.2
75°	166.8	159.6	148.9	138.2	135.5	132.0	131.1	132.9	137.3	142.7	146.2
77.5°	126.6	120.4	112.4	107.9	104.3	102.5	103.4	106.1	107.9	113.2	115.9
80°	91.8	84.7	82.9	76.7	75.8	74.9	76.7	77.6	80.3	83.8	85.6
82.5°	60.6	55.3	53.5	52.6	51.7	50.8	53.5	54.4	56.2	58.9	59.7
85°	33.0	31.2	31.2	30.3	31.2	33.0	33.0	33.9	33.9	34.8	33.9
87.5°	15.2	13.4	14.3	14.3	14.3	15.2	15.2	16.1	16.1	16.1	15.2
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: P646656

CATALOG NUMBER: S123DRP-S775D940-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

	160°	170°	180°
0°	1921.6	1921.6	1921.6
2.5°	1711.2	1705.0	1680.0
5°	1458.8	1437.4	1430.3
7.5°	1266.2	1264.4	1227.0
10°	1103.0	1105.7	1071.8
12.5°	1000.5	978.2	975.5
15°	913.1	892.6	889.0
17.5°	848.0	835.5	832.0
20°	799.0	791.8	785.6
22.5°	759.7	750.8	745.5
25°	720.5	712.5	710.7
27.5°	686.6	676.8	676.8
30°	651.8	645.6	642.9
32.5°	620.6	615.3	615.3
35°	590.3	587.6	584.1
37.5°	562.7	562.7	560.9
40°	535.9	538.6	538.6
42.5°	512.7	515.4	515.4
45°	487.8	492.2	494.0
47.5°	462.8	469.9	471.7
50°	440.5	445.9	446.7
52.5°	416.4	422.7	427.1
55°	391.5	397.7	400.4
57.5°	364.7	371.0	371.8
60°	335.3	341.5	343.3
62.5°	308.5	312.1	313.9
65°	275.5	280.9	284.5
67.5°	245.2	249.7	249.7
70°	212.2	214.0	216.7
72.5°	181.0	181.9	181.9
75°	147.1	148.9	149.8
77.5°	115.9	116.8	116.8
80°	85.6	84.7	84.7
82.5°	59.7	57.1	57.1
85°	33.9	33.0	33.9
87.5°	15.2	15.2	15.2
90°	0.0	0.0	0.0



TEST NUMBER: P646656
 CATALOG NUMBER: S123DRP-S775D940-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	18.41	19.91	18.77	20.23	20.54	20.86	22.37	21.22	22.68	23.00
	3H	20.10	21.45	20.48	21.78	22.14	22.07	23.43	22.45	23.76	24.12
	4H	20.70	21.97	21.10	22.32	22.70	22.49	23.77	22.89	24.12	24.49
	6H	21.11	22.28	21.52	22.65	23.04	22.77	23.94	23.18	24.31	24.70
	8H	21.21	22.33	21.63	22.72	23.12	22.84	23.95	23.26	24.34	24.75
	12H	21.26	22.33	21.69	22.72	23.15	22.87	23.94	23.30	24.32	24.75
4H	2H	19.05	20.33	19.45	20.67	21.05	21.08	22.35	21.48	22.70	23.08
	3H	20.94	22.00	21.35	22.40	22.80	22.56	23.62	22.97	24.02	24.42
	4H	21.66	22.61	22.09	23.03	23.47	23.13	24.08	23.56	24.50	24.94
	6H	22.17	23.00	22.63	23.44	23.90	23.52	24.35	23.98	24.80	25.25
	8H	22.31	23.08	22.77	23.53	24.00	23.63	24.40	24.09	24.85	25.31
	12H	22.40	23.09	22.88	23.57	24.04	23.69	24.39	24.18	24.86	25.33
8H	4H	21.98	22.76	22.45	23.20	23.67	23.29	24.07	23.76	24.51	24.98
	6H	22.60	23.24	23.10	23.73	24.21	23.79	24.43	24.28	24.92	25.39
	8H	22.80	23.37	23.31	23.88	24.37	23.95	24.52	24.46	25.03	25.52
	12H	22.94	23.45	23.45	23.94	24.50	24.07	24.57	24.58	25.06	25.63
12H	4H	22.02	22.71	22.50	23.19	23.66	23.30	23.99	23.78	24.47	24.94
	6H	22.65	23.23	23.17	23.74	24.22	23.80	24.38	24.32	24.89	25.38
	8H	22.90	23.41	23.41	23.90	24.46	24.01	24.52	24.52	25.01	25.58