

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: P646614

Luminaire Tested: S123DRP-S1000D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646614
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-S1000D835-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

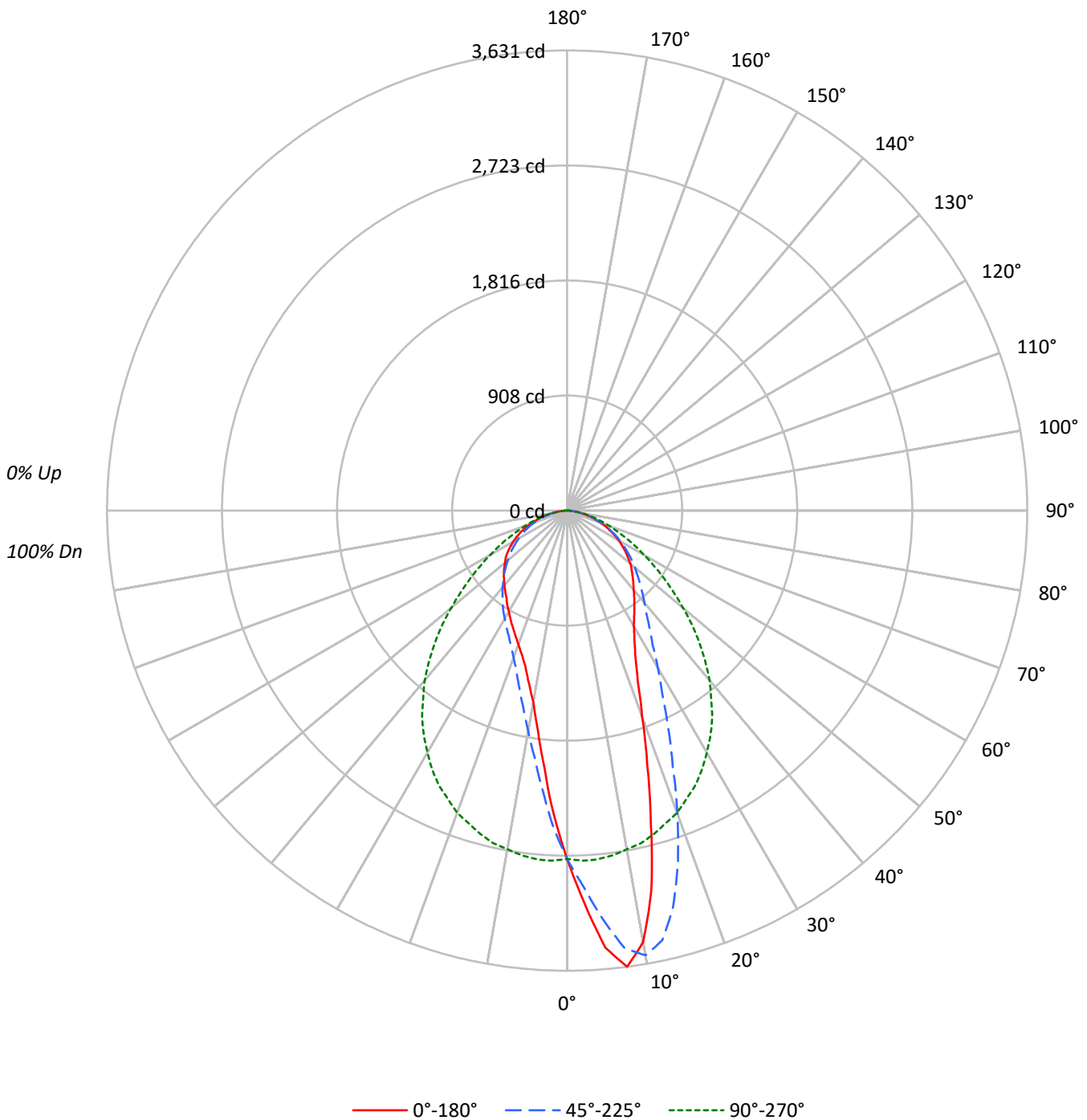
Lumens per Lamp: N/A
Luminaire Lumens: 4415.5 lumens
Efficiency: N/A
Efficacy: 128.0 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 34.5
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°	33114	33114	33114	33114	33114
5°	41877	39163	33409	26792	24741
10°	42283	43593	33188	21641	18754
15°	31847	40342	32961	18135	15860
20°	22189	32622	32540	15813	14406
25°	16920	25025	31822	14495	13513
30°	14638	19890	30677	13698	12793
35°	13581	16657	29357	13056	12287
40°	12857	14903	27501	12456	12115
45°	12429	13842	25143	11930	12039
50°	12216	13077	22352	11474	11976
55°	11760	12350	19610	11064	12029
60°	11341	11678	16903	10664	11832
65°	10652	10942	14580	10215	11598
70°	9840	10153	12401	9660	10918
75°	8906	9204	10628	8845	9972
80°	7341	7876	8403	7695	8403
85°	5820	6346	6166	6705	6705

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 28706 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	259.8	5.9
10°-20°	646.5	14.6
20°-30°	765.2	17.3
30°-40°	769.0	17.4
40°-50°	705.2	16.0
50°-60°	582.1	13.2
60°-70°	411.9	9.3
70°-80°	220.0	5.0
80°-90°	55.8	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°	1671.5	37.9
0°-40°	2440.5	55.3
0°-60°	3727.8	84.4
0°-90°	4415.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4415.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2748	2748	2748	2748	2748	
5°	3462	3238	2762	2215	2046	330
15°	2553	3234	2642	1454	1271	705
25°	1273	1882	2394	1090	1016	601
35°	923	1132	1996	888	835	580
45°	729	812	1476	700	706	565
55°	560	588	934	527	573	501
65°	374	384	511	358	407	371
75°	191	198	228	190	214	201
85°	42	46	45	48	48	50
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°	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2
2.5°	3097.6	3091.2	3059.3	3038.9	3044.0	2998.1	2970.1	2947.1	2931.8	2894.8	2875.7
5°	3462.3	3480.2	3459.7	3449.5	3397.3	3314.4	3237.9	3221.3	3149.9	3061.9	3031.3
7.5°	3630.6	3640.8	3628.1	3628.1	3611.5	3537.5	3484.0	3441.9	3319.5	3206.0	3153.7
10°	3455.9	3478.9	3528.6	3551.6	3584.7	3574.5	3563.0	3546.5	3463.6	3332.2	3272.3
12.5°	3072.1	3100.1	3199.6	3213.6	3327.1	3436.8	3472.5	3513.3	3521.0	3410.0	3345.0
15°	2553.0	2630.8	2721.4	2764.7	2908.8	3139.7	3234.0	3345.0	3476.3	3430.4	3379.4
17.5°	2102.9	2132.2	2229.1	2321.0	2465.1	2731.6	2906.3	3072.1	3353.9	3399.8	3367.9
20°	1730.5	1757.3	1884.8	1878.4	2069.7	2369.4	2544.1	2735.4	3151.1	3300.3	3294.0
22.5°	1453.8	1495.9	1567.3	1606.8	1744.5	2011.1	2176.8	2415.3	2920.3	3156.2	3181.7
25°	1272.7	1303.3	1346.7	1381.1	1488.2	1707.6	1882.3	2078.7	2629.6	2967.5	3031.3
27.5°	1149.0	1161.8	1205.1	1225.5	1296.9	1485.7	1620.8	1800.6	2360.5	2755.8	2845.1
30°	1052.1	1061.0	1099.3	1105.6	1161.8	1298.2	1429.6	1576.2	2097.8	2537.7	2639.8
32.5°	984.5	990.9	1020.2	1022.7	1064.8	1164.3	1256.1	1393.8	1849.1	2304.4	2430.6
35°	923.3	927.1	948.8	955.2	981.9	1057.2	1132.4	1238.3	1651.4	2094.0	2233.0
37.5°	869.7	874.8	887.6	895.2	916.9	976.8	1027.8	1115.8	1461.4	1874.6	2028.9
40°	817.4	826.4	835.3	835.3	859.5	905.4	947.5	1020.2	1298.2	1683.3	1819.8
42.5°	772.8	781.7	785.6	786.8	799.6	841.7	877.4	927.1	1174.5	1513.7	1647.6
45°	729.4	733.3	737.1	739.6	748.6	785.6	812.3	859.5	1057.2	1356.9	1486.9
47.5°	689.9	689.9	692.5	696.3	702.7	729.4	752.4	786.8	956.4	1216.6	1323.7
50°	651.7	651.7	647.8	650.4	654.2	674.6	697.6	725.6	862.1	1087.8	1183.4
52.5°	605.7	605.7	607.0	603.2	607.0	624.9	642.7	670.8	781.7	969.2	1050.8
55°	559.8	564.9	561.1	558.6	563.7	575.1	587.9	612.1	706.5	874.8	939.9
57.5°	513.9	516.5	515.2	519.0	516.5	526.7	538.2	554.7	638.9	769.0	830.2
60°	470.6	470.6	468.0	470.6	470.6	475.7	484.6	501.2	570.0	678.4	729.4
62.5°	422.1	423.4	424.7	423.4	422.1	428.5	436.1	447.6	510.1	590.4	628.7
65°	373.6	374.9	378.7	377.5	376.2	382.6	383.8	396.6	443.8	512.6	540.7
67.5°	330.3	327.7	329.0	331.6	332.8	334.1	336.7	349.4	382.6	438.7	461.6
70°	279.3	281.8	280.6	284.4	281.8	285.7	288.2	297.1	329.0	366.0	381.3
72.5°	233.4	234.6	234.6	238.5	237.2	241.0	243.6	247.4	270.4	303.5	309.9
75°	191.3	191.3	193.8	195.1	195.1	195.1	197.7	200.2	219.3	239.7	246.1
77.5°	145.4	151.8	150.5	151.8	153.0	156.9	154.3	159.4	170.9	182.4	186.2
80°	105.8	105.8	107.1	108.4	110.9	113.5	113.5	118.6	123.7	130.1	133.9
82.5°	67.6	68.9	72.7	74.0	75.2	79.1	79.1	79.1	85.4	88.0	88.0
85°	42.1	39.5	42.1	43.4	44.6	45.9	45.9	48.5	49.7	51.0	51.0
87.5°	20.4	20.4	20.4	20.4	21.7	21.7	21.7	21.7	23.0	23.0	23.0
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°	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2	2748.2
2.5°	2811.9	2764.7	2694.6	2637.2	2639.8	2587.5	2549.2	2499.5	2484.2	2468.9	2448.5
5°	2870.6	2762.2	2616.8	2500.8	2465.1	2378.3	2268.7	2215.1	2183.2	2127.1	2105.4
7.5°	2943.3	2744.3	2522.4	2341.4	2301.8	2157.7	2027.6	1963.9	1903.9	1864.4	1816.0
10°	2990.5	2712.5	2426.8	2187.0	2148.8	1984.3	1814.7	1768.8	1693.5	1645.1	1599.2
12.5°	3026.2	2688.2	2328.6	2049.3	1986.8	1827.4	1656.5	1594.1	1539.2	1469.1	1435.9
15°	3058.0	2642.3	2227.9	1905.2	1840.2	1668.0	1509.9	1453.8	1404.0	1342.8	1313.5
17.5°	3046.6	2586.2	2116.9	1777.7	1712.7	1543.0	1391.3	1327.5	1294.4	1240.8	1220.4
20°	3032.5	2537.7	2012.3	1656.5	1585.1	1427.0	1279.1	1233.2	1200.0	1165.6	1147.7
22.5°	2987.9	2461.2	1906.5	1545.6	1478.0	1319.9	1193.6	1155.4	1129.9	1105.6	1090.3
25°	2912.7	2393.6	1803.2	1434.7	1381.1	1233.2	1126.0	1090.3	1073.8	1049.5	1035.5
27.5°	2819.6	2304.4	1699.9	1344.1	1282.9	1151.5	1059.7	1036.8	1018.9	999.8	985.8
30°	2702.2	2204.9	1599.2	1256.1	1200.0	1084.0	1004.9	984.5	967.9	948.8	932.2
32.5°	2553.0	2104.2	1504.8	1174.5	1127.3	1026.6	953.9	937.3	923.3	900.3	891.4
35°	2386.0	1995.8	1411.7	1096.7	1052.1	964.1	904.2	887.6	873.5	854.4	846.8
37.5°	2216.4	1867.0	1319.9	1030.4	990.9	911.8	854.4	837.8	825.1	808.5	804.7
40°	2036.6	1748.4	1229.3	962.8	928.4	860.8	804.7	791.9	779.2	769.0	766.4
42.5°	1855.5	1611.9	1150.3	906.7	869.7	807.2	756.2	742.2	734.5	729.4	730.7
45°	1684.6	1475.5	1068.7	841.7	816.2	758.8	711.6	700.1	693.7	689.9	695.0
47.5°	1499.7	1336.5	992.1	786.8	761.3	710.3	665.7	655.5	652.9	651.7	660.6
50°	1336.5	1192.4	909.3	730.7	709.0	656.8	621.0	612.1	609.6	613.4	626.1
52.5°	1182.2	1058.5	834.0	678.4	656.8	609.6	576.4	570.0	568.8	577.7	590.4
55°	1029.1	933.5	752.4	621.0	599.4	558.6	533.1	526.7	525.4	543.3	554.7
57.5°	899.0	812.3	675.9	566.2	549.6	511.4	488.4	483.3	487.1	503.7	515.2
60°	771.5	701.4	605.7	507.5	494.8	461.6	443.8	442.5	446.3	465.5	476.9
62.5°	656.8	603.2	530.5	454.0	445.1	415.7	399.2	401.7	405.5	424.7	434.9
65°	558.6	511.4	456.5	400.4	389.0	368.5	357.1	358.3	366.0	382.6	392.8
67.5°	462.9	424.7	394.1	349.4	340.5	322.6	313.7	318.8	322.6	339.2	349.4
70°	382.6	352.0	329.0	295.9	289.5	274.2	267.8	274.2	278.0	292.0	304.8
72.5°	307.3	288.2	270.4	246.1	239.7	229.5	228.3	230.8	237.2	251.2	256.3
75°	238.5	228.3	213.0	197.7	193.8	188.7	187.5	190.0	196.4	204.0	209.1
77.5°	181.1	172.2	160.7	154.3	149.2	146.7	147.9	151.8	154.3	162.0	165.8
80°	131.4	121.1	118.6	109.7	108.4	107.1	109.7	110.9	114.8	119.9	122.4
82.5°	86.7	79.1	76.5	75.2	74.0	72.7	76.5	77.8	80.3	84.2	85.4
85°	47.2	44.6	44.6	43.4	44.6	47.2	47.2	48.5	48.5	49.7	48.5
87.5°	21.7	19.1	20.4	20.4	20.4	21.7	21.7	23.0	23.0	23.0	21.7
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):

	160°	170°	180°
0°	2748.2	2748.2	2748.2
2.5°	2447.2	2438.3	2402.6
5°	2086.3	2055.7	2045.5
7.5°	1810.9	1808.3	1754.7
10°	1577.5	1581.3	1532.8
12.5°	1430.8	1398.9	1395.1
15°	1305.9	1276.5	1271.4
17.5°	1212.8	1194.9	1189.8
20°	1142.6	1132.4	1123.5
22.5°	1086.5	1073.8	1066.1
25°	1030.4	1018.9	1016.4
27.5°	981.9	967.9	967.9
30°	932.2	923.3	919.5
32.5°	887.6	879.9	879.9
35°	844.2	840.4	835.3
37.5°	804.7	804.7	802.1
40°	766.4	770.2	770.2
42.5°	733.3	737.1	737.1
45°	697.6	703.9	706.5
47.5°	661.9	672.1	674.6
50°	630.0	637.6	638.9
52.5°	595.5	604.5	610.8
55°	559.8	568.8	572.6
57.5°	521.6	530.5	531.8
60°	479.5	488.4	491.0
62.5°	441.2	446.3	448.9
65°	394.1	401.7	406.8
67.5°	350.7	357.1	357.1
70°	303.5	306.1	309.9
72.5°	258.9	260.2	260.2
75°	210.4	213.0	214.2
77.5°	165.8	167.1	167.1
80°	122.4	121.1	121.1
82.5°	85.4	81.6	81.6
85°	48.5	47.2	48.5
87.5°	21.7	21.7	21.7
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	19.65	21.16	20.01	21.47	21.79	22.10	23.61	22.47	23.92	24.24
	3H	21.34	22.70	21.72	23.02	23.39	23.32	24.67	23.69	25.00	25.36
	4H	21.94	23.21	22.34	23.56	23.94	23.74	25.01	24.14	25.36	25.74
	6H	22.35	23.52	22.76	23.89	24.28	24.01	25.18	24.42	25.55	25.94
	8H	22.45	23.57	22.88	23.96	24.36	24.08	25.20	24.51	25.59	25.99
	12H	22.51	23.58	22.94	23.96	24.39	24.11	25.18	24.54	25.57	26.00
4H	2H	20.30	21.57	20.70	21.92	22.30	22.32	23.59	22.72	23.94	24.32
	3H	22.18	23.24	22.59	23.64	24.04	23.81	24.86	24.22	25.26	25.67
	4H	22.90	23.86	23.33	24.27	24.71	24.37	25.32	24.80	25.74	26.18
	6H	23.41	24.24	23.87	24.69	25.15	24.77	25.60	25.22	26.04	26.50
	8H	23.55	24.33	24.01	24.77	25.24	24.87	25.65	25.33	26.09	26.56
	12H	23.64	24.33	24.12	24.81	25.28	24.94	25.63	25.42	26.11	26.58
8H	4H	23.23	24.00	23.69	24.45	24.91	24.54	25.31	25.00	25.76	26.22
	6H	23.84	24.48	24.34	24.97	25.45	25.03	25.67	25.53	26.16	26.64
	8H	24.04	24.61	24.55	25.12	25.61	25.19	25.76	25.71	26.27	26.76
	12H	24.18	24.69	24.69	25.18	25.75	25.31	25.82	25.82	26.31	26.87
12H	4H	23.26	23.95	23.74	24.43	24.90	24.54	25.23	25.02	25.71	26.18
	6H	23.89	24.47	24.41	24.98	25.47	25.05	25.62	25.56	26.13	26.62
	8H	24.14	24.65	24.65	25.14	25.71	25.26	25.76	25.77	26.26	26.82