

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: P646672

Luminaire Tested: S123RDRP-S1165D930-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646672
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-S1165D930-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

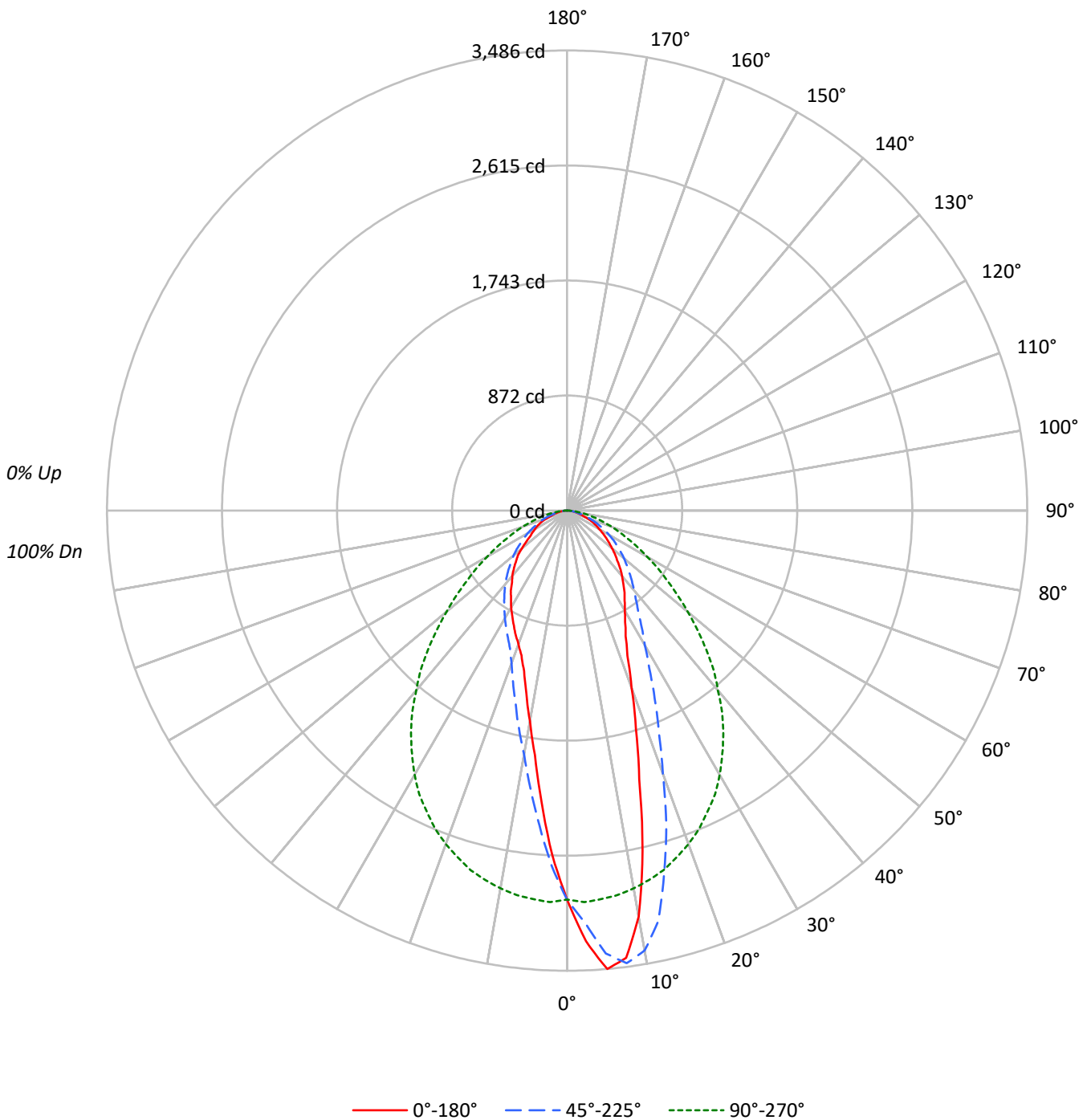
Lumens per Lamp: N/A
Luminaire Lumens: 3904.5 lumens
Efficiency: N/A
Efficacy: 97.4 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 40.1
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

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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°	35510	35510	35510	35510	35510
5°	42164	40732	35734	28981	26819
10°	38202	41395	35555	22944	19855
15°	26302	35452	35181	18841	15706
20°	18298	27191	34473	15788	13805
25°	13944	20868	33447	14104	12723
30°	12138	16408	32160	13113	11784
35°	11144	13811	30339	12228	10931
40°	10169	12391	27958	11479	10150
45°	9183	11345	25388	10665	9369
50°	8336	10533	22356	9922	8403
55°	7539	9672	19444	9062	7210
60°	6755	8793	16888	8299	6815
65°	6235	7821	14538	7373	6443
70°	5066	6683	12686	6683	5235
75°	4446	5400	10745	5568	4614
80°	4025	4531	8805	4698	4358
85°	3677	3843	6677	4175	4009

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 26787 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	268.6	6.9
10°-20°	621.5	15.9
20°-30°	713.0	18.3
30°-40°	702.3	18.0
40°-50°	619.0	15.9
50°-60°	476.4	12.2
60°-70°	313.3	8.0
70°-80°	152.1	3.9
80°-90°	38.4	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°	1603.0	41.1
0°-40°	2305.3	59.0
0°-60°	3400.7	87.1
0°-90°	3904.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3904.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2947	2947	2947	2947	2947	
5°	3486	3368	2954	2396	2217	319
15°	2108	2842	2820	1510	1259	595
25°	1049	1570	2516	1061	957	495
35°	758	939	2063	831	743	472
45°	539	666	1490	626	550	418
55°	359	460	926	431	343	322
65°	219	274	510	259	226	214
75°	96	116	231	120	99	103
85°	27	28	48	30	29	30
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°	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1
2.5°	3266.1	3245.6	3239.5	3232.3	3220.2	3176.7	3127.2	3132.0	3126.0	3088.5	3068.0
5°	3486.0	3488.5	3482.4	3477.6	3457.0	3403.9	3367.6	3345.9	3300.0	3229.9	3208.1
7.5°	3418.4	3457.0	3464.3	3472.8	3483.6	3471.5	3458.3	3449.8	3412.3	3336.2	3301.2
10°	3122.3	3119.9	3163.4	3198.5	3292.7	3359.2	3383.3	3418.4	3449.8	3396.6	3358.0
12.5°	2639.0	2642.6	2785.2	2785.2	2907.3	3076.4	3185.2	3258.9	3394.2	3397.8	3374.9
15°	2108.5	2167.8	2294.6	2321.2	2478.3	2705.5	2842.0	2994.3	3256.5	3338.6	3333.8
17.5°	1731.5	1756.9	1879.0	1914.0	2053.0	2310.3	2498.8	2682.5	3049.8	3222.6	3254.0
20°	1427.0	1450.0	1538.2	1564.8	1705.0	1950.3	2120.6	2318.8	2799.7	3064.3	3119.9
22.5°	1191.4	1236.1	1295.3	1336.4	1416.2	1666.3	1812.5	2002.2	2509.7	2886.7	2952.0
25°	1048.8	1069.4	1120.1	1139.5	1236.1	1401.7	1569.6	1736.4	2252.3	2664.4	2779.2
27.5°	952.2	958.2	995.7	1012.6	1070.6	1224.0	1344.9	1499.5	1990.1	2436.0	2570.1
30°	872.4	883.3	912.3	915.9	966.7	1075.4	1179.3	1321.9	1760.5	2214.9	2352.6
32.5°	810.8	816.8	841.0	848.3	880.9	966.7	1051.3	1155.2	1547.9	1984.1	2142.4
35°	757.6	758.8	777.0	786.6	815.6	886.9	938.9	1025.9	1377.5	1793.2	1932.1
37.5°	697.2	705.7	719.0	727.4	752.8	810.8	857.9	925.6	1220.4	1611.9	1741.2
40°	646.5	653.7	669.4	673.0	696.0	749.2	787.8	848.3	1085.1	1437.9	1569.6
42.5°	595.7	600.5	616.3	623.5	648.9	691.2	726.2	773.3	977.5	1283.3	1412.5
45°	538.9	551.0	567.9	571.5	595.7	639.2	665.8	709.3	880.9	1149.1	1263.9
47.5°	491.8	497.8	512.3	518.4	546.2	584.8	612.6	650.1	797.5	1027.1	1139.5
50°	444.7	447.1	460.4	468.8	490.6	535.3	561.9	595.7	721.4	928.0	1006.5
52.5°	400.0	406.0	419.3	425.3	439.8	485.8	509.9	545.0	648.9	826.5	905.0
55°	358.9	362.5	372.2	379.4	396.3	436.2	460.4	490.6	586.0	733.5	802.3
57.5°	320.2	325.0	332.3	338.3	354.0	389.1	413.3	443.5	526.8	648.9	702.0
60°	280.3	286.4	294.8	297.3	311.8	343.2	364.9	391.5	466.4	570.3	617.5
62.5°	251.3	252.5	259.8	263.4	271.9	297.3	320.2	345.6	412.0	494.2	532.9
65°	218.7	222.3	226.0	228.4	235.6	257.4	274.3	293.6	358.9	430.2	456.8
67.5°	184.9	188.5	194.5	197.0	203.0	217.5	232.0	251.3	305.7	366.1	390.3
70°	143.8	143.8	153.5	158.3	168.0	178.8	189.7	206.6	253.8	305.7	323.8
72.5°	117.2	118.4	119.6	119.6	128.1	146.2	152.3	163.1	200.6	250.1	265.8
75°	95.5	96.7	97.9	99.1	100.3	106.3	116.0	125.7	153.5	189.7	204.2
77.5°	76.1	77.3	78.5	78.5	81.0	83.4	85.8	90.6	110.0	136.5	148.6
80°	58.0	59.2	60.4	60.4	61.6	64.0	65.3	67.7	73.7	91.8	97.9
82.5°	42.3	42.3	42.3	43.5	44.7	44.7	47.1	47.1	50.8	55.6	59.2
85°	26.6	26.6	27.8	27.8	27.8	29.0	27.8	29.0	30.2	31.4	33.8
87.5°	12.1	10.9	12.1	12.1	12.1	13.3	13.3	13.3	13.3	14.5	14.5
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°	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1	2947.1
2.5°	3011.2	2968.9	2897.6	2852.9	2836.0	2784.0	2734.5	2693.4	2672.8	2670.4	2633.0
5°	3070.4	2954.4	2807.0	2683.7	2654.7	2564.1	2446.9	2396.1	2329.7	2303.1	2271.7
7.5°	3118.7	2937.5	2720.0	2533.9	2479.5	2343.0	2193.1	2126.7	2075.9	1996.2	1949.0
10°	3152.5	2906.0	2613.6	2373.2	2295.8	2136.3	1955.1	1875.3	1828.2	1736.4	1698.9
12.5°	3165.8	2866.2	2507.3	2206.4	2138.8	1949.0	1771.4	1689.3	1619.2	1535.8	1499.5
15°	3161.0	2820.3	2398.5	2053.0	1968.4	1776.3	1587.8	1510.4	1445.2	1361.8	1314.7
17.5°	3128.4	2755.0	2280.1	1904.3	1823.4	1625.2	1434.3	1363.0	1305.0	1224.0	1187.8
20°	3074.0	2688.5	2176.2	1769.0	1677.2	1487.5	1307.4	1231.3	1180.5	1137.0	1110.5
22.5°	2999.1	2610.0	2049.3	1634.9	1555.1	1364.2	1191.4	1129.8	1099.6	1064.5	1045.2
25°	2885.5	2515.8	1934.5	1522.5	1442.8	1253.0	1102.0	1060.9	1030.7	1007.8	987.2
27.5°	2763.5	2425.1	1819.8	1408.9	1334.0	1152.8	1031.9	1000.5	973.9	944.9	926.8
30°	2622.1	2311.5	1711.0	1308.6	1236.1	1071.8	971.5	942.5	920.8	889.3	871.2
32.5°	2455.3	2187.1	1609.5	1212.0	1144.3	1001.7	915.9	884.5	866.4	836.2	818.0
35°	2282.5	2062.6	1498.3	1122.5	1060.9	940.1	861.5	831.3	812.0	781.8	763.7
37.5°	2113.4	1929.7	1399.3	1044.0	988.4	878.5	804.8	779.4	761.3	729.8	708.1
40°	1934.5	1777.5	1302.6	970.3	918.3	824.1	752.8	729.8	705.7	677.9	656.1
42.5°	1747.3	1643.3	1213.2	905.0	856.7	770.9	700.8	676.7	656.1	623.5	613.8
45°	1572.0	1489.9	1118.9	836.2	797.5	717.8	650.1	625.9	603.0	575.2	565.5
47.5°	1416.2	1340.0	1033.1	775.8	737.1	665.8	599.3	574.0	557.0	535.3	520.8
50°	1255.5	1192.6	938.9	716.5	680.3	610.2	546.2	529.3	509.9	483.3	472.5
52.5°	1105.6	1057.3	861.5	659.8	625.9	563.1	497.8	480.9	462.8	439.8	424.1
55°	973.9	925.6	773.3	595.7	570.3	511.1	453.1	431.4	416.9	390.3	371.0
57.5°	838.6	815.6	688.8	542.5	518.4	459.2	407.2	390.3	372.2	343.2	323.8
60°	727.4	700.8	610.2	484.5	461.6	412.0	361.3	344.4	327.5	299.7	291.2
62.5°	622.3	603.0	534.1	430.2	410.8	362.5	317.8	302.1	285.2	267.0	261.0
65°	526.8	509.9	458.0	374.6	358.9	316.6	275.5	258.6	247.7	239.3	233.2
67.5°	437.4	427.8	387.9	322.6	310.5	273.1	236.8	223.5	217.5	207.8	203.0
70°	356.5	360.1	323.8	275.5	262.2	232.0	200.6	189.7	182.5	174.0	164.3
72.5°	291.2	290.0	268.3	224.8	215.1	190.9	166.8	159.5	151.0	134.1	123.3
75°	226.0	230.8	210.3	186.1	176.4	152.3	129.3	119.6	111.2	105.1	101.5
77.5°	172.8	175.2	165.5	142.6	134.1	113.6	95.5	90.6	87.0	83.4	82.2
80°	123.3	126.9	117.2	102.7	95.5	78.5	68.9	67.7	66.5	64.0	62.8
82.5°	79.8	84.6	79.8	64.0	60.4	52.0	49.5	49.5	48.3	47.1	45.9
85°	43.5	48.3	45.9	37.5	35.0	32.6	31.4	30.2	30.2	30.2	30.2
87.5°	16.9	23.0	19.3	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
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°	2947.1	2947.1	2947.1
2.5°	2624.5	2612.4	2607.6
5°	2263.2	2225.8	2217.3
7.5°	1934.5	1918.8	1866.9
10°	1692.9	1644.5	1622.8
12.5°	1475.4	1430.7	1423.4
15°	1301.4	1270.0	1259.1
17.5°	1186.6	1164.8	1151.5
20°	1102.0	1086.3	1076.6
22.5°	1038.0	1025.9	1018.6
25°	981.2	963.0	957.0
27.5°	923.2	907.5	901.4
30°	868.8	855.5	847.0
32.5°	812.0	796.3	791.5
35°	757.6	748.0	743.1
37.5°	704.5	692.4	685.1
40°	654.9	648.9	645.3
42.5°	610.2	599.3	598.1
45°	563.1	552.2	549.8
47.5°	518.4	508.7	507.5
50°	471.3	458.0	448.3
52.5°	414.5	402.4	393.9
55°	363.7	350.4	343.2
57.5°	321.4	315.4	311.8
60°	288.8	285.2	282.8
62.5°	259.8	256.2	256.2
65°	233.2	229.6	226.0
67.5°	200.6	193.3	192.1
70°	160.7	149.8	148.6
72.5°	122.0	120.8	118.4
75°	101.5	99.1	99.1
77.5°	82.2	79.8	79.8
80°	62.8	61.6	62.8
82.5°	45.9	45.9	44.7
85°	30.2	29.0	29.0
87.5°	14.5	14.5	14.5
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	17.10	18.56	17.47	18.87	19.19	22.20	23.65	22.56	23.97	24.28
	3H	18.44	19.74	18.81	20.07	20.43	23.47	24.78	23.85	25.11	25.47
	4H	18.83	20.05	19.23	20.40	20.78	23.92	25.14	24.32	25.49	25.87
	6H	19.14	20.27	19.55	20.63	21.03	24.21	25.34	24.63	25.71	26.10
	8H	19.24	20.31	19.67	20.70	21.10	24.29	25.36	24.72	25.75	26.15
	12H	19.31	20.33	19.74	20.72	21.15	24.33	25.35	24.76	25.74	26.17
4H	2H	17.95	19.17	18.35	19.52	19.90	22.24	23.46	22.64	23.81	24.18
	3H	19.43	20.44	19.84	20.84	21.24	23.73	24.74	24.14	25.14	25.54
	4H	19.89	20.80	20.32	21.21	21.65	24.28	25.19	24.72	25.61	26.05
	6H	20.28	21.06	20.74	21.51	21.97	24.72	25.51	25.18	25.95	26.41
	8H	20.41	21.14	20.87	21.59	22.05	24.84	25.58	25.31	26.02	26.49
	12H	20.51	21.16	20.99	21.64	22.11	24.92	25.57	25.40	26.05	26.52
8H	4H	20.28	21.01	20.74	21.46	21.93	24.29	25.02	24.75	25.47	25.94
	6H	20.75	21.35	21.25	21.84	22.32	24.78	25.38	25.28	25.87	26.35
	8H	20.93	21.47	21.45	21.98	22.47	24.94	25.48	25.46	25.99	26.48
	12H	21.09	21.57	21.60	22.06	22.63	25.07	25.55	25.58	26.04	26.61
12H	4H	20.32	20.98	20.81	21.46	21.93	24.27	24.92	24.75	25.40	25.87
	6H	20.81	21.35	21.33	21.86	22.35	24.75	25.29	25.27	25.80	26.29
	8H	21.04	21.52	21.56	22.02	22.58	24.95	25.42	25.46	25.92	26.48