

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: P646662

Luminaire Tested: S123RDRP-S1000D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646662
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-S1000D927-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

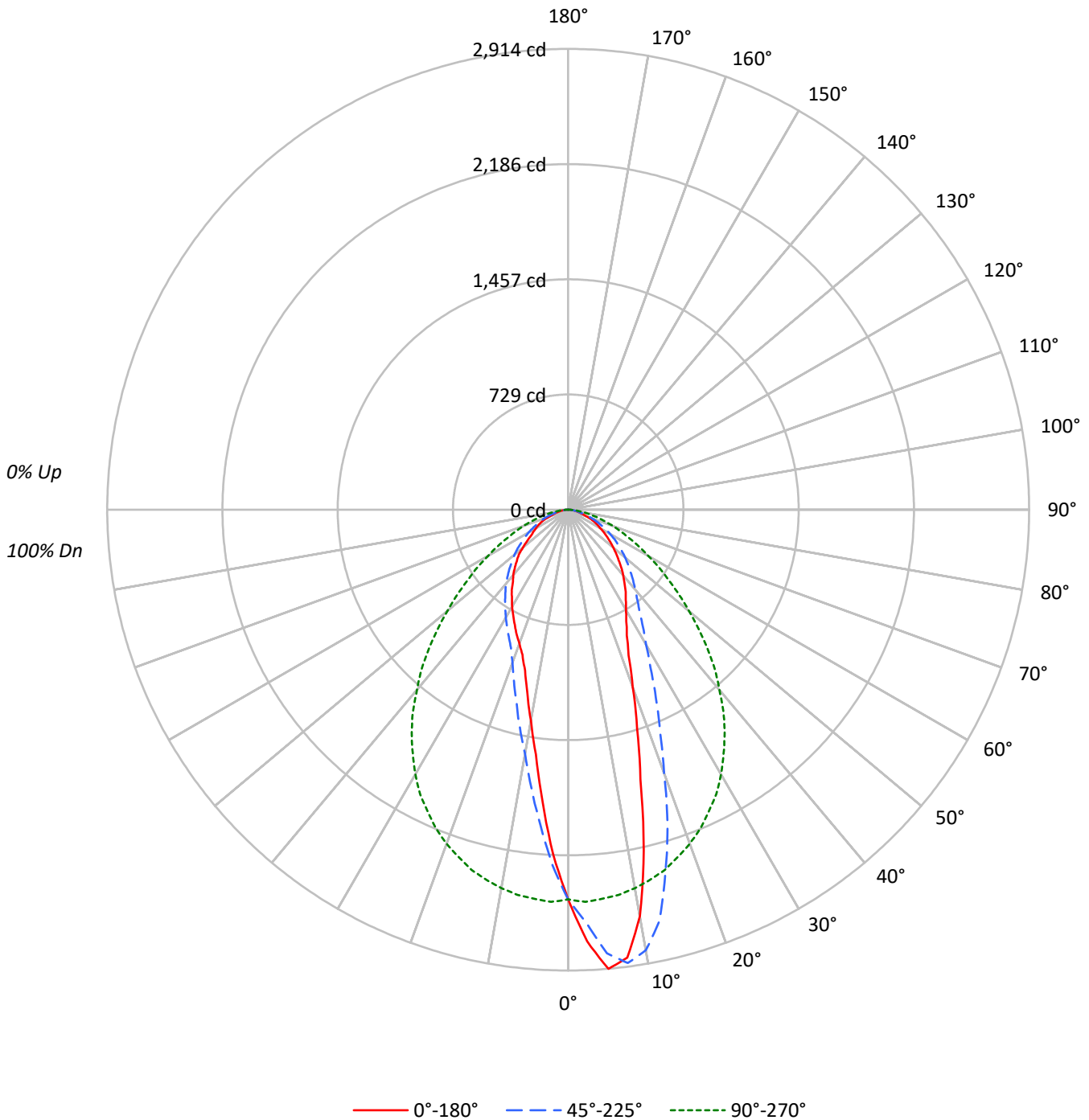
Lumens per Lamp: N/A
Luminaire Lumens: 3264.3 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 34.5
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	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°	29688	29688	29688	29688	29688
5°	35251	34054	29875	24230	22422
10°	31938	34608	29726	19183	16599
15°	21990	29640	29413	15752	13132
20°	15298	22733	28822	13199	11542
25°	11658	17447	27963	11792	10637
30°	10148	13718	26889	10964	9853
35°	9317	11545	25366	10223	9139
40°	8502	10361	23373	9598	8486
45°	7678	9485	21225	8917	7833
50°	6969	8806	18691	8295	7026
55°	6302	8086	16255	7577	6027
60°	5649	7352	14119	6938	5697
65°	5215	6538	12154	6164	5386
70°	4235	5587	10604	5587	4379
75°	3715	4516	8985	4655	3855
80°	3365	3789	7362	3927	3643
85°	3069	3207	5585	3498	3346

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 22396 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	224.6	6.9
10°-20°	519.6	15.9
20°-30°	596.1	18.3
30°-40°	587.2	18.0
40°-50°	517.5	15.9
50°-60°	398.3	12.2
60°-70°	261.9	8.0
70°-80°	127.2	3.9
80°-90°	32.1	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°	1340.2	41.1
0°-40°	1927.4	59.0
0°-60°	2843.2	87.1
0°-90°	3264.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3264.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2464	2464	2464	2464	2464	
5°	2914	2816	2470	2003	1854	266
15°	1763	2376	2358	1263	1053	498
25°	877	1312	2103	887	800	414
35°	633	785	1724	695	621	395
45°	451	557	1246	523	460	350
55°	300	385	774	361	287	269
65°	183	229	426	216	189	179
75°	80	97	193	100	83	86
85°	22	23	40	25	24	25
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°	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9
2.5°	2730.6	2713.5	2708.4	2702.4	2692.3	2655.9	2614.5	2618.5	2613.5	2582.1	2565.0
5°	2914.5	2916.5	2911.5	2907.4	2890.3	2845.8	2815.5	2797.3	2758.9	2700.3	2682.2
7.5°	2857.9	2890.3	2896.3	2903.4	2912.5	2902.4	2891.3	2884.2	2852.9	2789.2	2759.9
10°	2610.4	2608.4	2644.8	2674.1	2752.9	2808.4	2828.6	2857.9	2884.2	2839.7	2807.4
12.5°	2206.3	2209.4	2328.6	2328.6	2430.6	2572.0	2663.0	2724.6	2837.7	2840.8	2821.6
15°	1762.8	1812.3	1918.4	1940.6	2072.0	2261.9	2376.1	2503.3	2722.6	2791.3	2787.2
17.5°	1447.7	1468.9	1570.9	1600.2	1716.4	1931.6	2089.1	2242.7	2549.8	2694.3	2720.5
20°	1193.1	1212.3	1286.0	1308.2	1425.4	1630.5	1772.9	1938.6	2340.7	2561.9	2608.4
22.5°	996.1	1033.5	1083.0	1117.3	1184.0	1393.1	1515.3	1673.9	2098.2	2413.4	2468.0
25°	876.9	894.1	936.5	952.6	1033.5	1171.9	1312.3	1451.7	1883.1	2227.6	2323.5
27.5°	796.1	801.1	832.4	846.6	895.1	1023.4	1124.4	1253.7	1663.8	2036.6	2148.8
30°	729.4	738.5	762.7	765.8	808.2	899.1	986.0	1105.2	1471.9	1851.7	1966.9
32.5°	677.9	682.9	703.1	709.2	736.5	808.2	878.9	965.8	1294.1	1658.8	1791.1
35°	633.4	634.4	649.6	657.7	681.9	741.5	784.9	857.7	1151.7	1499.2	1615.4
37.5°	582.9	590.0	601.1	608.2	629.4	677.9	717.3	773.8	1020.3	1347.6	1455.7
40°	540.5	546.5	559.7	562.7	581.9	626.3	658.7	709.2	907.2	1202.2	1312.3
42.5°	498.0	502.1	515.2	521.3	542.5	577.8	607.1	646.5	817.3	1072.9	1181.0
45°	450.6	460.7	474.8	477.8	498.0	534.4	556.6	593.0	736.5	960.7	1056.7
47.5°	411.2	416.2	428.3	433.4	456.6	488.9	512.2	543.5	666.7	858.7	952.6
50°	371.8	373.8	384.9	392.0	410.2	447.5	469.8	498.0	603.1	775.9	841.5
52.5°	334.4	339.4	350.5	355.6	367.7	406.1	426.3	455.6	542.5	691.0	756.7
55°	300.0	303.1	311.1	317.2	331.4	364.7	384.9	410.2	490.0	613.2	670.8
57.5°	267.7	271.8	277.8	282.9	296.0	325.3	345.5	370.8	440.5	542.5	586.9
60°	234.4	239.4	246.5	248.5	260.6	286.9	305.1	327.3	389.9	476.8	516.2
62.5°	210.1	211.1	217.2	220.2	227.3	248.5	267.7	288.9	344.5	413.2	445.5
65°	182.9	185.9	188.9	190.9	197.0	215.2	229.3	245.5	300.0	359.6	381.9
67.5°	154.6	157.6	162.6	164.7	169.7	181.8	194.0	210.1	255.6	306.1	326.3
70°	120.2	120.2	128.3	132.3	140.4	149.5	158.6	172.7	212.1	255.6	270.7
72.5°	98.0	99.0	100.0	100.0	107.1	122.2	127.3	136.4	167.7	209.1	222.2
75°	79.8	80.8	81.8	82.8	83.8	88.9	97.0	105.1	128.3	158.6	170.7
77.5°	63.6	64.7	65.7	65.7	67.7	69.7	71.7	75.8	91.9	114.2	124.3
80°	48.5	49.5	50.5	50.5	51.5	53.5	54.6	56.6	61.6	76.8	81.8
82.5°	35.4	35.4	35.4	36.4	37.4	37.4	39.4	39.4	42.4	46.5	49.5
85°	22.2	22.2	23.2	23.2	23.2	24.2	23.2	24.2	25.3	26.3	28.3
87.5°	10.1	9.1	10.1	10.1	10.1	11.1	11.1	11.1	11.1	12.1	12.1
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°	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9	2463.9
2.5°	2517.5	2482.1	2422.5	2385.1	2371.0	2327.6	2286.1	2251.8	2234.6	2232.6	2201.3
5°	2567.0	2470.0	2346.8	2243.7	2219.5	2143.7	2045.7	2003.3	1947.7	1925.5	1899.2
7.5°	2607.4	2455.9	2274.0	2118.4	2073.0	1958.8	1833.6	1778.0	1735.6	1668.9	1629.5
10°	2635.7	2429.6	2185.1	1984.1	1919.4	1786.1	1634.5	1567.9	1528.5	1451.7	1420.4
12.5°	2646.8	2396.3	2096.2	1844.7	1788.1	1629.5	1481.0	1412.3	1353.7	1284.0	1253.7
15°	2642.8	2357.9	2005.3	1716.4	1645.7	1485.0	1327.4	1262.8	1208.2	1138.5	1099.1
17.5°	2615.5	2303.3	1906.3	1592.1	1524.4	1358.8	1199.1	1139.5	1091.0	1023.4	993.1
20°	2570.0	2247.8	1819.4	1479.0	1402.2	1243.6	1093.1	1029.4	987.0	950.6	928.4
22.5°	2507.4	2182.1	1713.3	1366.8	1300.2	1140.5	996.1	944.6	919.3	890.0	873.8
25°	2412.4	2103.3	1617.4	1272.9	1206.2	1047.6	921.3	887.0	861.7	842.5	825.4
27.5°	2310.4	2027.5	1521.4	1177.9	1115.3	963.8	862.7	836.5	814.2	790.0	774.8
30°	2192.2	1932.6	1430.5	1094.1	1033.5	896.1	812.2	788.0	769.8	743.5	728.4
32.5°	2052.8	1828.5	1345.6	1013.3	956.7	837.5	765.8	739.5	724.3	699.1	683.9
35°	1908.3	1724.5	1252.7	938.5	887.0	786.0	720.3	695.0	678.9	653.6	638.5
37.5°	1766.9	1613.3	1169.8	872.8	826.4	734.4	672.8	651.6	636.4	610.2	592.0
40°	1617.4	1486.0	1089.0	811.2	767.8	689.0	629.4	610.2	590.0	566.7	548.6
42.5°	1460.8	1373.9	1014.3	756.7	716.3	644.5	585.9	565.7	548.6	521.3	513.2
45°	1314.3	1245.6	935.5	699.1	666.7	600.1	543.5	523.3	504.1	480.9	472.8
47.5°	1184.0	1120.3	863.7	648.6	616.2	556.6	501.1	479.9	465.7	447.5	435.4
50°	1049.6	997.1	784.9	599.1	568.8	510.2	456.6	442.5	426.3	404.1	395.0
52.5°	924.4	883.9	720.3	551.6	523.3	470.8	416.2	402.1	386.9	367.7	354.6
55°	814.2	773.8	646.5	498.0	476.8	427.3	378.8	360.7	348.5	326.3	310.1
57.5°	701.1	681.9	575.8	453.6	433.4	383.9	340.4	326.3	311.1	286.9	270.7
60°	608.2	585.9	510.2	405.1	385.9	344.5	302.1	287.9	273.8	250.5	243.5
62.5°	520.3	504.1	446.5	359.6	343.5	303.1	265.7	252.6	238.4	223.3	218.2
65°	440.5	426.3	382.9	313.2	300.0	264.7	230.3	216.2	207.1	200.0	195.0
67.5°	365.7	357.6	324.3	269.7	259.6	228.3	198.0	186.9	181.8	173.8	169.7
70°	298.0	301.0	270.7	230.3	219.2	194.0	167.7	158.6	152.5	145.5	137.4
72.5°	243.5	242.5	224.3	187.9	179.8	159.6	139.4	133.3	126.3	112.1	103.0
75°	188.9	193.0	175.8	155.6	147.5	127.3	108.1	100.0	92.9	87.9	84.9
77.5°	144.5	146.5	138.4	119.2	112.1	95.0	79.8	75.8	72.7	69.7	68.7
80°	103.0	106.1	98.0	85.9	79.8	65.7	57.6	56.6	55.6	53.5	52.5
82.5°	66.7	70.7	66.7	53.5	50.5	43.4	41.4	41.4	40.4	39.4	38.4
85°	36.4	40.4	38.4	31.3	29.3	27.3	26.3	25.3	25.3	25.3	25.3
87.5°	14.1	19.2	16.2	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
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°	2463.9	2463.9	2463.9
2.5°	2194.2	2184.1	2180.1
5°	1892.2	1860.8	1853.8
7.5°	1617.4	1604.2	1560.8
10°	1415.3	1374.9	1356.7
12.5°	1233.5	1196.1	1190.0
15°	1088.0	1061.7	1052.7
17.5°	992.0	973.9	962.7
20°	921.3	908.2	900.1
22.5°	867.8	857.7	851.6
25°	820.3	805.2	800.1
27.5°	771.8	758.7	753.6
30°	726.4	715.2	708.2
32.5°	678.9	665.7	661.7
35°	633.4	625.3	621.3
37.5°	589.0	578.9	572.8
40°	547.5	542.5	539.5
42.5°	510.2	501.1	500.1
45°	470.8	461.7	459.7
47.5°	433.4	425.3	424.3
50°	394.0	382.9	374.8
52.5°	346.5	336.4	329.3
55°	304.1	293.0	286.9
57.5°	268.7	263.7	260.6
60°	241.4	238.4	236.4
62.5°	217.2	214.2	214.2
65°	195.0	191.9	188.9
67.5°	167.7	161.6	160.6
70°	134.4	125.3	124.3
72.5°	102.0	101.0	99.0
75°	84.9	82.8	82.8
77.5°	68.7	66.7	66.7
80°	52.5	51.5	52.5
82.5°	38.4	38.4	37.4
85°	25.3	24.2	24.2
87.5°	12.1	12.1	12.1
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	16.48	17.94	16.85	18.25	18.56	21.57	23.03	21.94	23.34	23.66
	3H	17.81	19.12	18.19	19.44	19.81	22.85	24.15	23.23	24.48	24.85
	4H	18.21	19.43	18.61	19.78	20.16	23.30	24.52	23.70	24.87	25.25
	6H	18.52	19.64	18.93	20.01	20.40	23.59	24.72	24.00	25.08	25.48
	8H	18.62	19.69	19.05	20.08	20.48	23.67	24.74	24.10	25.13	25.53
	12H	18.69	19.71	19.12	20.09	20.52	23.71	24.73	24.14	25.11	25.54
4H	2H	17.33	18.55	17.73	18.90	19.28	21.61	22.83	22.01	23.18	23.56
	3H	18.80	19.81	19.21	20.21	20.62	23.10	24.11	23.51	24.51	24.92
	4H	19.27	20.17	19.70	20.59	21.03	23.66	24.57	24.09	24.98	25.42
	6H	19.65	20.44	20.11	20.89	21.35	24.10	24.89	24.56	25.33	25.79
	8H	19.78	20.52	20.25	20.96	21.43	24.22	24.95	24.68	25.40	25.87
	12H	19.88	20.54	20.37	21.02	21.49	24.30	24.95	24.78	25.43	25.90
8H	4H	19.65	20.39	20.12	20.83	21.30	23.67	24.40	24.13	24.85	25.31
	6H	20.12	20.73	20.62	21.22	21.70	24.15	24.76	24.65	25.25	25.73
	8H	20.31	20.85	20.82	21.36	21.85	24.32	24.86	24.83	25.37	25.86
	12H	20.47	20.95	20.98	21.44	22.01	24.45	24.92	24.96	25.42	25.98
12H	4H	19.70	20.36	20.18	20.84	21.31	23.64	24.30	24.13	24.78	25.25
	6H	20.19	20.73	20.70	21.24	21.73	24.13	24.67	24.64	25.18	25.67
	8H	20.42	20.90	20.93	21.39	21.96	24.32	24.80	24.84	25.30	25.86