

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: P646701

Luminaire Tested: S123RDRP-S775D940-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2024  
Report Number: P646701  
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-S775D940-X4F0-XX-UDD-G-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC  
STANDARD LIGHT ENGINE  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: -

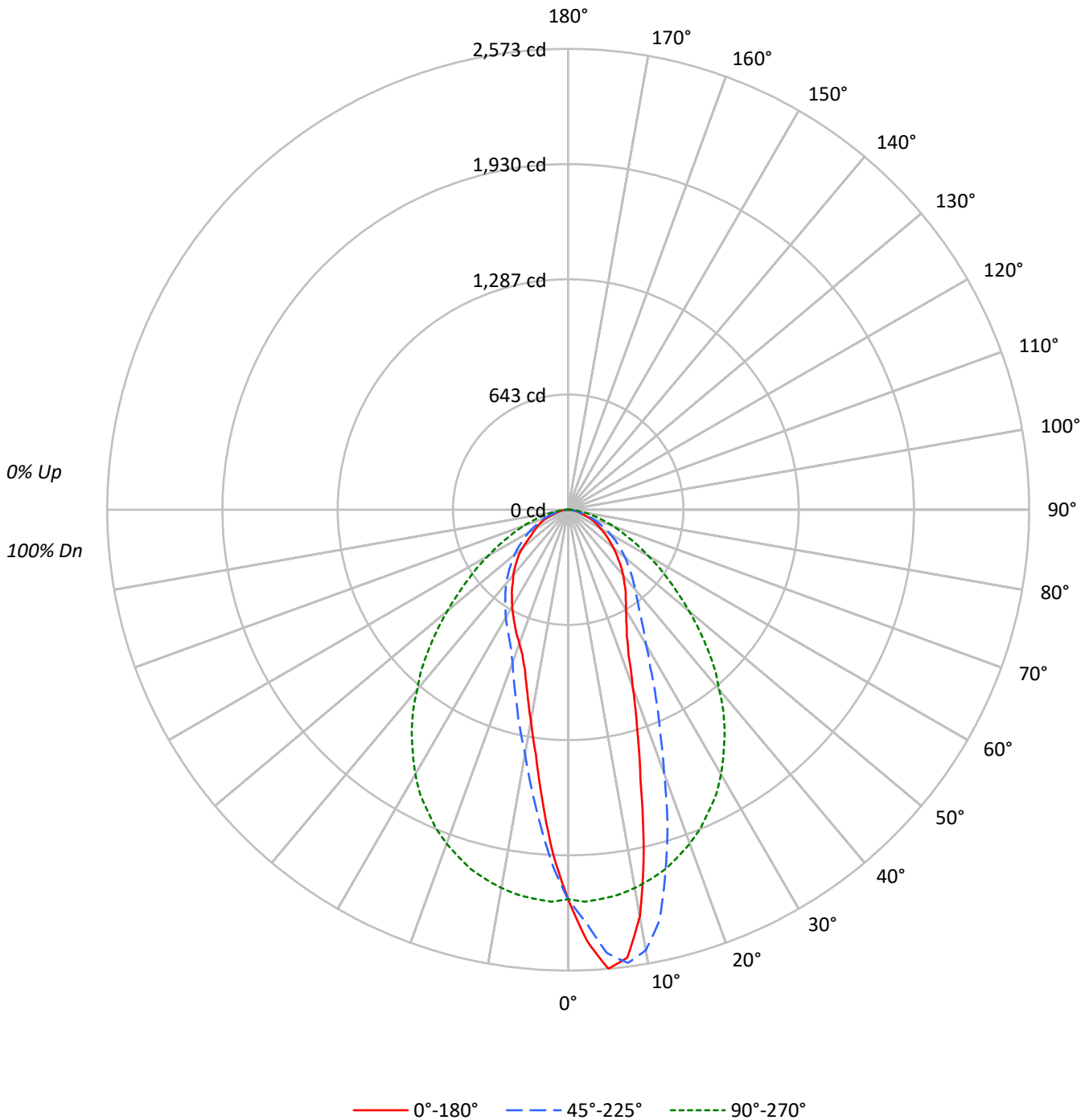
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2881.4 lumens  
Efficiency: N/A  
Efficacy: 110.8 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 (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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CATALOG NUMBER: S123RDRP-S775D940-X4F0-XX-UDD-G-W

### 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°	26206	26206	26206	26206	26206
5°	31116	30059	26370	21388	19791
10°	28192	30548	26239	16932	14653
15°	19410	26162	25963	13904	11591
20°	13503	20067	25441	11652	10187
25°	10290	15399	24682	10408	9389
30°	8957	12109	23733	9677	8697
35°	8224	10192	22391	9024	8067
40°	7504	9145	20632	8472	7490
45°	6777	8372	18736	7871	6913
50°	6150	7772	16498	7322	6201
55°	5563	7136	14350	6687	5319
60°	4986	6490	12464	6123	5029
65°	4602	5771	10729	5440	4753
70°	3738	4932	9360	4932	3865
75°	3277	3985	7928	4111	3403
80°	2970	3345	6495	3462	3220
85°	2710	2834	4935	3083	2959

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 19768 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	198.2	6.9
10°-20°	458.6	15.9
20°-30°	526.1	18.3
30°-40°	518.3	18.0
40°-50°	456.8	15.9
50°-60°	351.6	12.2
60°-70°	231.2	8.0
70°-80°	112.3	3.9
80°-90°	28.3	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°	1183.0	41.1
0°-40°	1701.3	59.0
0°-60°	2509.6	87.1
0°-90°	2881.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2881.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2175	2175	2175	2175	2175	
5°	2573	2485	2180	1768	1636	235
15°	1556	2097	2081	1115	929	439
25°	774	1158	1856	783	706	366
35°	559	693	1522	614	548	349
45°	398	491	1100	462	406	309
55°	265	340	683	318	253	238
65°	161	202	376	191	167	158
75°	70	86	170	88	73	76
85°	20	20	36	22	21	22
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°	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9
2.5°	2410.3	2395.1	2390.7	2385.3	2376.4	2344.3	2307.7	2311.3	2306.9	2279.2	2264.1
5°	2572.6	2574.4	2569.9	2566.3	2551.2	2511.9	2485.2	2469.1	2435.3	2383.5	2367.5
7.5°	2522.7	2551.2	2556.5	2562.8	2570.8	2561.9	2552.1	2545.8	2518.2	2462.0	2436.2
10°	2304.2	2302.4	2334.5	2360.4	2429.9	2479.0	2496.8	2522.7	2545.8	2506.6	2478.1
12.5°	1947.5	1950.2	2055.4	2055.4	2145.5	2270.3	2350.6	2404.9	2504.8	2507.5	2490.5
15°	1556.0	1599.7	1693.4	1713.0	1828.9	1996.5	2097.3	2209.7	2403.2	2463.8	2460.2
17.5°	1277.8	1296.5	1386.6	1412.5	1515.0	1705.0	1844.1	1979.6	2250.7	2378.2	2401.4
20°	1053.1	1070.1	1135.1	1154.8	1258.2	1439.2	1565.0	1711.2	2066.1	2261.4	2302.4
22.5°	879.2	912.2	955.9	986.2	1045.1	1229.7	1337.6	1477.6	1852.1	2130.3	2178.4
25°	774.0	789.2	826.6	840.9	912.2	1034.4	1158.3	1281.4	1662.1	1966.2	2050.9
27.5°	702.7	707.1	734.8	747.3	790.1	903.3	992.5	1106.6	1468.6	1797.7	1896.7
30°	643.8	651.8	673.2	675.9	713.4	793.6	870.3	975.5	1299.2	1634.5	1736.2
32.5°	598.3	602.8	620.6	626.0	650.1	713.4	775.8	852.5	1142.3	1464.2	1581.0
35°	559.1	560.0	573.4	580.5	601.9	654.5	692.9	757.1	1016.6	1323.3	1425.8
37.5°	514.5	520.8	530.6	536.8	555.5	598.3	633.1	683.1	900.6	1189.5	1285.0
40°	477.1	482.4	494.0	496.7	513.6	552.9	581.4	626.0	800.8	1061.1	1158.3
42.5°	439.6	443.2	454.8	460.1	478.8	510.1	535.9	570.7	721.4	947.0	1042.4
45°	397.7	406.6	419.1	421.8	439.6	471.7	491.3	523.4	650.1	848.0	932.7
47.5°	362.9	367.4	378.1	382.5	403.1	431.6	452.1	479.7	588.5	758.0	840.9
50°	328.1	329.9	339.7	346.0	362.0	395.0	414.6	439.6	532.4	684.8	742.8
52.5°	295.2	299.6	309.4	313.9	324.6	358.5	376.3	402.2	478.8	609.9	667.9
55°	264.8	267.5	274.6	280.0	292.5	321.9	339.7	362.0	432.5	541.3	592.1
57.5°	236.3	239.9	245.2	249.7	261.3	287.1	305.0	327.3	388.8	478.8	518.1
60°	206.9	211.3	217.6	219.4	230.1	253.2	269.3	288.9	344.2	420.9	455.7
62.5°	185.5	186.4	191.7	194.4	200.6	219.4	236.3	255.0	304.1	364.7	393.2
65°	161.4	164.1	166.7	168.5	173.9	189.9	202.4	216.7	264.8	317.4	337.1
67.5°	136.4	139.1	143.6	145.3	149.8	160.5	171.2	185.5	225.6	270.2	288.0
70°	106.1	106.1	113.2	116.8	123.9	132.0	140.0	152.5	187.3	225.6	239.0
72.5°	86.5	87.4	88.3	88.3	94.5	107.9	112.4	120.4	148.0	184.6	196.2
75°	70.4	71.3	72.2	73.1	74.0	78.5	85.6	92.7	113.2	140.0	150.7
77.5°	56.2	57.1	58.0	58.0	59.7	61.5	63.3	66.9	81.1	100.8	109.7
80°	42.8	43.7	44.6	44.6	45.5	47.3	48.2	49.9	54.4	67.8	72.2
82.5°	31.2	31.2	31.2	32.1	33.0	33.0	34.8	34.8	37.5	41.0	43.7
85°	19.6	19.6	20.5	20.5	20.5	21.4	20.5	21.4	22.3	23.2	25.0
87.5°	8.9	8.0	8.9	8.9	8.9	9.8	9.8	9.8	9.8	10.7	10.7
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):**

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9	2174.9
2.5°	2222.1	2190.9	2138.3	2105.3	2092.8	2054.5	2017.9	1987.6	1972.5	1970.7	1943.0
5°	2265.8	2180.2	2071.4	1980.5	1959.1	1892.2	1805.7	1768.3	1719.2	1699.6	1676.4
7.5°	2301.5	2167.7	2007.2	1869.9	1829.8	1729.0	1618.5	1569.4	1532.0	1473.1	1438.3
10°	2326.5	2144.6	1928.8	1751.3	1694.3	1576.5	1442.8	1383.9	1349.2	1281.4	1253.7
12.5°	2336.3	2115.1	1850.3	1628.3	1578.3	1438.3	1307.2	1246.6	1194.9	1133.4	1106.6
15°	2332.7	2081.3	1770.0	1515.0	1452.6	1310.8	1171.7	1114.6	1066.5	1005.0	970.2
17.5°	2308.6	2033.1	1682.7	1405.3	1345.6	1199.4	1058.5	1005.8	963.0	903.3	876.6
20°	2268.5	1984.1	1606.0	1305.5	1237.7	1097.7	964.8	908.7	871.2	839.1	819.5
22.5°	2213.2	1926.1	1512.3	1206.5	1147.6	1006.7	879.2	833.7	811.5	785.6	771.3
25°	2129.4	1856.5	1427.6	1123.6	1064.7	924.7	813.2	782.9	760.6	743.7	728.5
27.5°	2039.3	1789.7	1342.9	1039.7	984.4	850.7	761.5	738.3	718.7	697.3	683.9
30°	1935.0	1705.8	1262.7	965.7	912.2	790.9	716.9	695.5	679.5	656.3	642.9
32.5°	1812.0	1614.0	1187.8	894.4	844.5	739.2	675.9	652.7	639.4	617.1	603.7
35°	1684.4	1522.2	1105.7	828.4	782.9	693.8	635.8	613.5	599.2	576.9	563.6
37.5°	1559.6	1424.1	1032.6	770.4	729.4	648.3	593.9	575.2	561.8	538.6	522.5
40°	1427.6	1311.7	961.3	716.0	677.7	608.1	555.5	538.6	520.8	500.2	484.2
42.5°	1289.4	1212.7	895.3	667.9	632.2	568.9	517.2	499.4	484.2	460.1	453.0
45°	1160.1	1099.5	825.7	617.1	588.5	529.7	479.7	461.9	445.0	424.5	417.3
47.5°	1045.1	988.9	762.4	572.5	543.9	491.3	442.3	423.6	411.1	395.0	384.3
50°	926.5	880.1	692.9	528.8	502.0	450.3	403.1	390.6	376.3	356.7	348.7
52.5°	815.9	780.2	635.8	486.9	461.9	415.5	367.4	354.9	341.5	324.6	313.0
55°	718.7	683.1	570.7	439.6	420.9	377.2	334.4	318.3	307.6	288.0	273.8
57.5°	618.8	601.9	508.3	400.4	382.5	338.9	300.5	288.0	274.6	253.2	239.0
60°	536.8	517.2	450.3	357.6	340.6	304.1	266.6	254.1	241.7	221.1	214.9
62.5°	459.2	445.0	394.1	317.4	303.2	267.5	234.5	222.9	210.4	197.1	192.6
65°	388.8	376.3	338.0	276.4	264.8	233.6	203.3	190.8	182.8	176.6	172.1
67.5°	322.8	315.7	286.2	238.1	229.2	201.5	174.8	165.0	160.5	153.4	149.8
70°	263.1	265.7	239.0	203.3	193.5	171.2	148.0	140.0	134.6	128.4	121.3
72.5°	214.9	214.0	198.0	165.9	158.7	140.9	123.1	117.7	111.5	99.0	91.0
75°	166.7	170.3	155.2	137.3	130.2	112.4	95.4	88.3	82.0	77.6	74.9
77.5°	127.5	129.3	122.2	105.2	99.0	83.8	70.4	66.9	64.2	61.5	60.6
80°	91.0	93.6	86.5	75.8	70.4	58.0	50.8	49.9	49.0	47.3	46.4
82.5°	58.9	62.4	58.9	47.3	44.6	38.3	36.6	36.6	35.7	34.8	33.9
85°	32.1	35.7	33.9	27.6	25.9	24.1	23.2	22.3	22.3	22.3	22.3
87.5°	12.5	16.9	14.3	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
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°	2174.9	2174.9	2174.9
2.5°	1936.8	1927.9	1924.3
5°	1670.2	1642.5	1636.3
7.5°	1427.6	1416.0	1377.7
10°	1249.3	1213.6	1197.6
12.5°	1088.8	1055.8	1050.4
15°	960.4	937.2	929.2
17.5°	875.7	859.6	849.8
20°	813.2	801.6	794.5
22.5°	766.0	757.1	751.7
25°	724.1	710.7	706.2
27.5°	681.3	669.7	665.2
30°	641.1	631.3	625.1
32.5°	599.2	587.6	584.1
35°	559.1	552.0	548.4
37.5°	519.9	511.0	505.6
40°	483.3	478.8	476.2
42.5°	450.3	442.3	441.4
45°	415.5	407.5	405.7
47.5°	382.5	375.4	374.5
50°	347.8	338.0	330.8
52.5°	305.9	296.9	290.7
55°	268.4	258.6	253.2
57.5°	237.2	232.7	230.1
60°	213.1	210.4	208.7
62.5°	191.7	189.0	189.0
65°	172.1	169.4	166.7
67.5°	148.0	142.7	141.8
70°	118.6	110.6	109.7
72.5°	90.1	89.2	87.4
75°	74.9	73.1	73.1
77.5°	60.6	58.9	58.9
80°	46.4	45.5	46.4
82.5°	33.9	33.9	33.0
85°	22.3	21.4	21.4
87.5°	10.7	10.7	10.7
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	16.05	17.50	16.41	17.82	18.13	21.14	22.60	21.51	22.91	23.22
	3H	17.38	18.68	17.76	19.01	19.37	22.42	23.72	22.80	24.05	24.41
	4H	17.78	19.00	18.18	19.35	19.73	22.86	24.08	23.26	24.43	24.81
	6H	18.08	19.21	18.50	19.58	19.97	23.16	24.28	23.57	24.65	25.04
	8H	18.19	19.26	18.61	19.65	20.05	23.24	24.31	23.66	24.70	25.10
	12H	18.25	19.28	18.69	19.66	20.09	23.27	24.30	23.71	24.68	25.11
4H	2H	16.90	18.12	17.30	18.47	18.85	21.18	22.40	21.58	22.75	23.13
	3H	18.37	19.38	18.78	19.78	20.18	22.67	23.68	23.08	24.08	24.48
	4H	18.83	19.74	19.27	20.16	20.60	23.23	24.13	23.66	24.55	24.99
	6H	19.22	20.01	19.68	20.45	20.91	23.67	24.45	24.12	24.90	25.36
	8H	19.35	20.09	19.82	20.53	21.00	23.79	24.52	24.25	24.97	25.43
	12H	19.45	20.10	19.93	20.58	21.06	23.86	24.52	24.35	25.00	25.47
8H	4H	19.22	19.96	19.69	20.40	20.87	23.23	23.97	23.70	24.41	24.88
	6H	19.69	20.30	20.19	20.79	21.27	23.72	24.33	24.22	24.82	25.30
	8H	19.87	20.42	20.39	20.93	21.42	23.88	24.43	24.40	24.94	25.43
	12H	20.03	20.51	20.55	21.00	21.57	24.01	24.49	24.52	24.98	25.55
12H	4H	19.27	19.92	19.75	20.40	20.87	23.21	23.86	23.69	24.34	24.82
	6H	19.76	20.30	20.27	20.81	21.30	23.69	24.24	24.21	24.75	25.24
	8H	19.99	20.47	20.50	20.96	21.53	23.89	24.37	24.40	24.86	25.43