

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: P646649

Luminaire Tested: S123DRP-S775D830-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2024
Report Number: P646649
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-S775D830-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

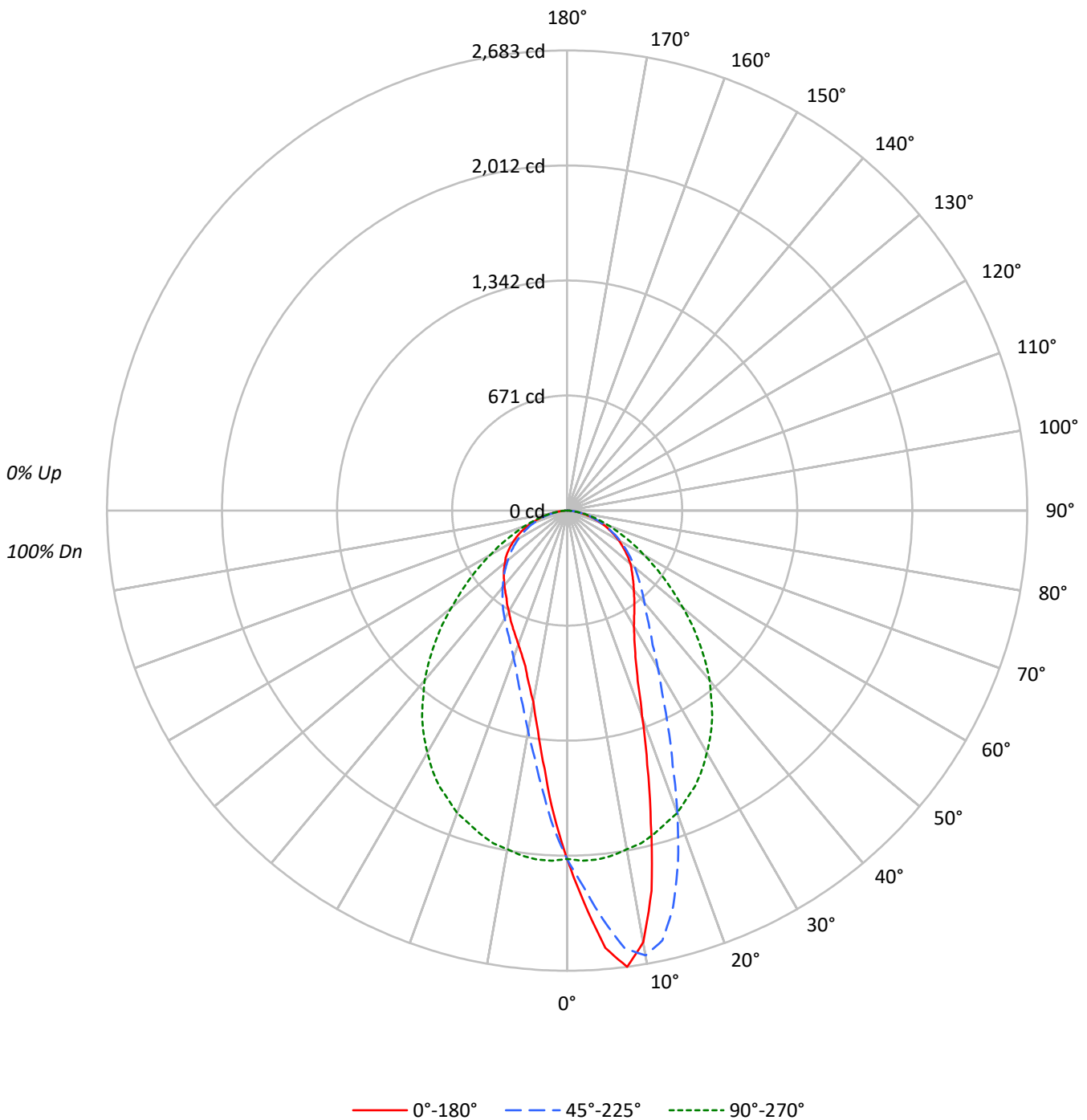
Lumens per Lamp: N/A
Luminaire Lumens: 3263.5 lumens
Efficiency: N/A
Efficacy: 127.0 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 25.7
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	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°	24474	24474	24474	24474	24474
5°	30952	28945	24692	19802	18286
10°	31252	32221	24529	15995	13861
15°	23539	29817	24361	13404	11722
20°	16400	24111	24051	11686	10648
25°	12506	18496	23521	10714	9987
30°	10819	14701	22674	10123	9455
35°	10038	12312	21698	9649	9082
40°	9504	11015	20325	9206	8955
45°	9186	10231	18582	8818	8898
50°	9028	9665	16520	8480	8851
55°	8693	9128	14493	8178	8890
60°	8381	8632	12493	7883	8745
65°	7875	8089	10777	7553	8573
70°	7271	7504	9163	7137	8068
75°	6583	6802	7854	6536	7370
80°	5426	5822	6210	5690	6210
85°	4300	4687	4562	4949	4949

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 21217 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	192.0	5.9
10°-20°	477.8	14.6
20°-30°	565.6	17.3
30°-40°	568.4	17.4
40°-50°	521.2	16.0
50°-60°	430.2	13.2
60°-70°	304.4	9.3
70°-80°	162.6	5.0
80°-90°	41.3	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°	1235.4	37.9
0°-40°	1803.8	55.3
0°-60°	2755.3	84.4
0°-90°	3263.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3263.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2031	2031	2031	2031	2031	
5°	2559	2393	2042	1637	1512	244
15°	1887	2390	1953	1074	940	521
25°	941	1391	1769	806	751	444
35°	682	837	1475	656	617	429
45°	539	600	1090	518	522	418
55°	414	434	690	389	423	370
65°	276	284	378	265	301	274
75°	141	146	169	140	158	149
85°	31	34	33	36	36	37
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°	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2
2.5°	2289.4	2284.7	2261.2	2246.1	2249.9	2215.9	2195.2	2178.2	2166.9	2139.6	2125.4
5°	2559.0	2572.2	2557.1	2549.6	2510.9	2449.7	2393.1	2380.9	2328.1	2263.0	2240.4
7.5°	2683.4	2691.0	2681.5	2681.5	2669.3	2614.6	2575.0	2543.9	2453.4	2369.6	2330.9
10°	2554.3	2571.3	2608.0	2625.0	2649.5	2641.9	2633.5	2621.2	2559.9	2462.9	2418.6
12.5°	2270.6	2291.3	2364.8	2375.2	2459.1	2540.2	2566.5	2596.7	2602.4	2520.4	2472.3
15°	1887.0	1944.5	2011.4	2043.4	2149.9	2320.5	2390.3	2472.3	2569.4	2535.4	2497.7
17.5°	1554.3	1575.9	1647.6	1715.4	1821.9	2018.9	2148.1	2270.6	2478.9	2512.8	2489.3
20°	1279.0	1298.8	1393.1	1388.4	1529.7	1751.2	1880.4	2021.8	2329.0	2439.3	2434.6
22.5°	1074.5	1105.6	1158.4	1187.6	1289.4	1486.4	1608.9	1785.2	2158.4	2332.8	2351.6
25°	940.7	963.3	995.3	1020.8	1099.9	1262.1	1391.2	1536.3	1943.5	2193.3	2240.4
27.5°	849.2	858.7	890.7	905.8	958.6	1098.1	1198.0	1330.9	1744.6	2036.8	2102.8
30°	777.6	784.2	812.5	817.2	858.7	959.5	1056.6	1165.0	1550.5	1875.7	1951.1
32.5°	727.6	732.4	754.0	755.9	787.0	860.5	928.4	1030.2	1366.7	1703.2	1796.5
35°	682.4	685.2	701.3	706.0	725.8	781.4	837.0	915.2	1220.6	1547.7	1650.4
37.5°	642.8	646.6	656.0	661.7	677.7	722.0	759.7	824.7	1080.2	1385.5	1499.6
40°	604.2	610.8	617.4	617.4	635.3	669.2	700.3	754.0	959.5	1244.2	1345.0
42.5°	571.2	577.8	580.6	581.5	591.0	622.1	648.5	685.2	868.1	1118.8	1217.8
45°	539.1	542.0	544.8	546.7	553.3	580.6	600.4	635.3	781.4	1002.9	1099.0
47.5°	509.9	509.9	511.8	514.6	519.3	539.1	556.1	581.5	706.9	899.2	978.4
50°	481.6	481.6	478.8	480.7	483.5	498.6	515.6	536.3	637.2	804.0	874.7
52.5°	447.7	447.7	448.7	445.8	448.7	461.8	475.0	495.8	577.8	716.3	776.7
55°	413.8	417.5	414.7	412.8	416.6	425.1	434.5	452.4	522.2	646.6	694.7
57.5°	379.8	381.7	380.8	383.6	381.7	389.3	397.8	410.0	472.2	568.4	613.6
60°	347.8	347.8	345.9	347.8	347.8	351.6	358.2	370.4	421.3	501.4	539.1
62.5°	312.0	312.9	313.9	312.9	312.0	316.7	322.3	330.8	377.0	436.4	464.7
65°	276.2	277.1	279.9	279.0	278.1	282.8	283.7	293.1	328.0	378.9	399.6
67.5°	244.1	242.2	243.2	245.1	246.0	246.9	248.8	258.3	282.8	324.2	341.2
70°	206.4	208.3	207.4	210.2	208.3	211.1	213.0	219.6	243.2	270.5	281.8
72.5°	172.5	173.4	173.4	176.3	175.3	178.1	180.0	182.9	199.8	224.3	229.0
75°	141.4	141.4	143.3	144.2	144.2	144.2	146.1	148.0	162.1	177.2	181.9
77.5°	107.4	112.2	111.2	112.2	113.1	115.9	114.0	117.8	126.3	134.8	137.6
80°	78.2	78.2	79.2	80.1	82.0	83.9	83.9	87.7	91.4	96.1	99.0
82.5°	50.0	50.9	53.7	54.7	55.6	58.4	58.4	58.4	63.2	65.0	65.0
85°	31.1	29.2	31.1	32.0	33.0	33.9	33.9	35.8	36.8	37.7	37.7
87.5°	15.1	15.1	15.1	15.1	16.0	16.0	16.0	16.0	17.0	17.0	17.0
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°	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2	2031.2
2.5°	2078.3	2043.4	1991.6	1949.2	1951.1	1912.4	1884.1	1847.4	1836.1	1824.8	1809.7
5°	2121.7	2041.5	1934.1	1848.3	1821.9	1757.8	1676.8	1637.2	1613.6	1572.2	1556.1
7.5°	2175.4	2028.4	1864.4	1730.5	1701.3	1594.8	1498.6	1451.5	1407.2	1378.0	1342.2
10°	2210.3	2004.8	1793.7	1616.5	1588.2	1466.6	1341.2	1307.3	1251.7	1215.9	1181.9
12.5°	2236.7	1986.9	1721.1	1514.7	1468.5	1350.7	1224.4	1178.2	1137.6	1085.8	1061.3
15°	2260.2	1952.9	1646.6	1408.2	1360.1	1232.8	1116.0	1074.5	1037.7	992.5	970.8
17.5°	2251.7	1911.5	1564.6	1313.9	1265.8	1140.5	1028.3	981.2	956.7	917.1	902.0
20°	2241.4	1875.7	1487.3	1224.4	1171.6	1054.7	945.4	911.4	886.9	861.5	848.3
22.5°	2208.4	1819.1	1409.1	1142.4	1092.4	975.5	882.2	853.9	835.1	817.2	805.9
25°	2152.8	1769.2	1332.8	1060.4	1020.8	911.4	832.3	805.9	793.6	775.7	765.3
27.5°	2084.0	1703.2	1256.4	993.4	948.2	851.1	783.3	766.3	753.1	739.0	728.6
30°	1997.2	1629.7	1181.9	928.4	886.9	801.2	742.7	727.6	715.4	701.3	689.0
32.5°	1887.0	1555.2	1112.2	868.1	833.2	758.7	705.0	692.8	682.4	665.4	658.8
35°	1763.5	1475.1	1043.4	810.6	777.6	712.6	668.3	656.0	645.6	631.5	625.8
37.5°	1638.1	1379.9	975.5	761.6	732.4	673.9	631.5	619.3	609.8	597.6	594.7
40°	1505.2	1292.2	908.6	711.6	686.2	636.2	594.7	585.3	575.9	568.4	566.5
42.5°	1371.4	1191.4	850.2	670.1	642.8	596.6	558.9	548.6	542.9	539.1	540.1
45°	1245.1	1090.5	789.9	622.1	603.2	560.8	525.9	517.5	512.7	509.9	513.7
47.5°	1108.4	987.8	733.3	581.5	562.7	525.0	492.0	484.5	482.6	481.6	488.2
50°	987.8	881.3	672.0	540.1	524.1	485.4	459.0	452.4	450.5	453.4	462.8
52.5°	873.7	782.3	616.4	501.4	485.4	450.5	426.0	421.3	420.4	427.0	436.4
55°	760.6	689.9	556.1	459.0	443.0	412.8	394.0	389.3	388.3	401.5	410.0
57.5°	664.5	600.4	499.5	418.5	406.2	378.0	361.0	357.2	360.1	372.3	380.8
60°	570.2	518.4	447.7	375.1	365.7	341.2	328.0	327.1	329.9	344.0	352.5
62.5°	485.4	445.8	392.1	335.5	328.9	307.3	295.0	296.9	299.7	313.9	321.4
65°	412.8	378.0	337.4	296.0	287.5	272.4	263.9	264.9	270.5	282.8	290.3
67.5°	342.1	313.9	291.2	258.3	251.7	238.5	231.9	235.6	238.5	250.7	258.3
70°	282.8	260.1	243.2	218.7	214.0	202.6	197.9	202.6	205.5	215.8	225.3
72.5°	227.2	213.0	199.8	181.9	177.2	169.7	168.7	170.6	175.3	185.7	189.5
75°	176.3	168.7	157.4	146.1	143.3	139.5	138.6	140.4	145.2	150.8	154.6
77.5°	133.8	127.2	118.8	114.0	110.3	108.4	109.3	112.2	114.0	119.7	122.5
80°	97.1	89.5	87.7	81.1	80.1	79.2	81.1	82.0	84.8	88.6	90.5
82.5°	64.1	58.4	56.6	55.6	54.7	53.7	56.6	57.5	59.4	62.2	63.2
85°	34.9	33.0	33.0	32.0	33.0	34.9	34.9	35.8	35.8	36.8	35.8
87.5°	16.0	14.1	15.1	15.1	15.1	16.0	16.0	17.0	17.0	17.0	16.0
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):

	160°	170°	180°
0°	2031.2	2031.2	2031.2
2.5°	1808.7	1802.1	1775.8
5°	1542.0	1519.4	1511.8
7.5°	1338.4	1336.5	1296.9
10°	1165.9	1168.8	1132.9
12.5°	1057.5	1034.0	1031.1
15°	965.2	943.5	939.7
17.5°	896.4	883.2	879.4
20°	844.5	837.0	830.4
22.5°	803.0	793.6	788.0
25°	761.6	753.1	751.2
27.5°	725.8	715.4	715.4
30°	689.0	682.4	679.6
32.5°	656.0	650.4	650.4
35°	624.0	621.1	617.4
37.5°	594.7	594.7	592.9
40°	566.5	569.3	569.3
42.5°	542.0	544.8	544.8
45°	515.6	520.3	522.2
47.5°	489.2	496.7	498.6
50°	465.6	471.3	472.2
52.5°	440.2	446.8	451.5
55°	413.8	420.4	423.2
57.5°	385.5	392.1	393.0
60°	354.4	361.0	362.9
62.5°	326.1	329.9	331.8
65°	291.2	296.9	300.7
67.5°	259.2	263.9	263.9
70°	224.3	226.2	229.0
72.5°	191.3	192.3	192.3
75°	155.5	157.4	158.3
77.5°	122.5	123.5	123.5
80°	90.5	89.5	89.5
82.5°	63.2	60.3	60.3
85°	35.8	34.9	35.8
87.5°	16.0	16.0	16.0
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	18.60	20.11	18.96	20.42	20.74	21.05	22.56	21.42	22.87	23.19
	3H	20.29	21.65	20.67	21.97	22.34	22.27	23.62	22.64	23.95	24.31
	4H	20.89	22.16	21.29	22.51	22.89	22.69	23.96	23.09	24.31	24.69
	6H	21.30	22.47	21.71	22.84	23.23	22.96	24.13	23.37	24.50	24.89
	8H	21.40	22.52	21.83	22.91	23.31	23.03	24.15	23.45	24.54	24.94
	12H	21.46	22.53	21.89	22.91	23.34	23.06	24.13	23.49	24.52	24.95
4H	2H	19.25	20.52	19.65	20.87	21.25	21.27	22.54	21.67	22.89	23.27
	3H	21.13	22.19	21.54	22.59	22.99	22.76	23.81	23.17	24.21	24.62
	4H	21.85	22.81	22.28	23.22	23.66	23.32	24.27	23.75	24.69	25.13
	6H	22.36	23.19	22.82	23.64	24.10	23.72	24.55	24.17	24.99	25.45
	8H	22.50	23.28	22.96	23.72	24.19	23.82	24.60	24.28	25.04	25.51
	12H	22.59	23.28	23.07	23.76	24.23	23.89	24.58	24.37	25.06	25.53
8H	4H	22.18	22.95	22.64	23.40	23.86	23.49	24.26	23.95	24.71	25.17
	6H	22.79	23.43	23.29	23.92	24.40	23.98	24.62	24.48	25.11	25.59
	8H	22.99	23.56	23.50	24.07	24.56	24.14	24.71	24.65	25.22	25.71
	12H	23.13	23.64	23.64	24.13	24.69	24.26	24.76	24.77	25.26	25.82
12H	4H	22.21	22.90	22.69	23.38	23.85	23.49	24.18	23.97	24.66	25.13
	6H	22.84	23.42	23.36	23.93	24.42	24.00	24.57	24.51	25.08	25.57
	8H	23.09	23.60	23.60	24.09	24.66	24.21	24.71	24.72	25.21	25.77