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## Numerical data on degree hours, running times and temperature

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# Numerical data on degree hours, running times and temperature frequencies

*Dennis Johansson*

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Avdelningen för installationsteknik  
Institutionen för bygg- och miljöteknologi  
Lunds tekniska högskola  
Lunds universitet, 2010  
Rapport TVIT--10/7050



# Lunds Universitet

Lunds Universitet, med nio fakulteter samt ett antal forskningscentra och specialhögskolor, är Skandinaviens största enhet för forskning och högre utbildning. Huvuddelen av universitetet ligger i Lund, som har 100 400 invånare. En del forsknings- och utbildningsinstitutioner är dock belägna i Malmö, Helsingborg och Ljungbyhed. Lunds Universitet grundades 1666 och har idag totalt 6 000 anställda och 41 000 studerande som deltar i ett 90-tal utbildningsprogram och ca 1000 fristående kurser erbjudna av 88 institutioner.

## Avdelningen för installationsteknik

Avdelningen för Installationsteknik tillhör institutionen för Bygg- och miljöteknologi på Lunds Tekniska Högskola, som utgör den tekniska fakulteten vid Lunds Universitet. Installationsteknik omfattar installationernas funktion vid påverkan av människor, verksamhet, byggnad och klimat. Forskningen har en systemanalytisk och metodutvecklande inriktning med syfte att utforma energieffektiva och funktions säkra installationssystem och byggnader som ger bra inneklimat.

Nuvarande forskning innefattar bl a utveckling av metoder för utveckling av beräkningsmetoder för godtyckliga flödessystem, konvertering av direktelvärmda hus till alternativa värmesystem, vädring och ventilation i skolor, system för brandsäkerhet, alternativa sätt att förhindra rökspredning vid brand, installationernas belastning på yttre miljön, att betrakta byggnad och installationer som ett byggnadstekniskt system, analysera och beräkna inneklimatet i olika typer av byggnader, effekter av brukarnas beteende för energianvändning, reglering av golvvärmsystem, bestämning av luftflöden i byggnader med hjälp av spårgasmetod. Vi utvecklar även användbara projekteringsverktyg för energi och inomhusklimat, system för individuell energimätning i flerbostadshus samt olika analysverktyg för optimering av ventilationsanläggningar hos industrin.

# Numerical data on degree hours, running times and temperature frequencies

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# 1 Introduction

A way to calculate the heating energy use is to use the degree hours,  $Gh$ . This can be used for non buffering processes dependant on outdoor temperature only and linear heat loss such as heating demand of a room with constant indoor temperature or heating of the supply air. The definition of degree hours for a normal year is given by Equation 1, where the right part is the commonly used way to calculate it discretely based on one hour measurements of outdoor temperature data.

$$Gh = \int_{i=1}^{8760} \max(t_g - t_{out,i}; 0) dT = \sum_{i=1}^{8760} \max(t_g - t_{out,i}; 0) \quad [Gh] = \text{°C}\cdot\text{h} = \text{K}\cdot\text{h} \quad (1)$$

$t_g$	limit indoor temperature when heating is needed	$[t_g] = \text{°C}$
$t_{out,i}$	outdoor temperature	$[t_{out,i}] = \text{°C}$
$i$	time since new year	$[i] = \text{h}$

Jensen (2008) gives the theoretical framework for calculations with the degree hour method. There, it is proven that the running time of a heating system,  $d$  with  $[d] = \text{h}$ , is described by the first  $t_g$  differentiate of  $Gh$ , while the frequency of the outdoor temperatures,  $f$  with  $[f] = \text{h}/\text{°C}$  is the second  $t_g$  differentiate of  $Gh$ . The mathematics of this theory is comprehensively examined by Jensen (2008). Cooling use is also described there.

This report presents data on  $Gh$ ,  $d$  and  $f$  respectively for 27 location in the northern hemisphere for varying  $t_g$  in  $\text{°C}$  from  $-50\text{°C}$  to  $50\text{°C}$ . For layout reasons the explanation  $t_g$  is not given in the tables, only the figures. The outdoor temperatures are all based on normal years of Meteororm 6.0 (Meteotest, 2003; Johansson, 2008).

## 2 References

Jensen, L., *Utetemperaturberoende årsenergibehov – Teoridel*, Building Services, Lund Univeristy, Sweden, Report TVIT--08/7023, In Swedish

Johansson, D. 2008, Comparison between synthetic outdoor climate data and readings – applicability of Meteororm in Sweden for building simulations, *Indoor Air 2008 conference*, Copenhagen, Denmark

Meteotest, 2003, *Meteororm handbook, manual and theoretical background*, Switzerland, <http://www.meteororm.com/>, 2009-02-01



Numerical data on degree hours, running times and temperature frequencies

Gh/ (°Ch)	Verho- jansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow- knife	Fair- banks	Karesu- ando	Karasjok	Kiruna	Gällivare	Storlien	Hapa- randa	Öster- sund
Max/°C	29.2	12.7	31.2	28	11.9	28.2	28.5	23.3	25.7	23.3	25.6	23.5	26.5	25.7
Med/°C	-8.6	-9.85	-5.1	-7.4	-1.2	-2.3	-0.3	-0.1	1.1	0.35	1.1	1.9	2.8	3
Av/°C	-10.88	-10.16	-8.6	-7.24	-3.77	-3.54	-1.57	-1.08	-0.28	-0.07	0.28	2.19	2.49	2.66
Min/°C	-51	-37.1	-49.6	-41.8	-32.7	-42.1	-39.2	-36.9	-35.4	-31.2	-34.6	-23.6	-29.4	-29.9
-50	9.3	0	0	0	0	0	0	0	0	0	0	0	0	0
-49	58.1	0	6.4	0	0	0	0	0	0	0	0	0	0	0
-48	143.3	0	45.2	0	0	0	0	0	0	0	0	0	0	0
-47	273	0	129.8	0	0	0	0	0	0	0	0	0	0	0
-46	450.2	0	261.3	0	0	0	0	0	0	0	0	0	0	0
-45	697.1	0	460.5	0	0	0	0	0	0	0	0	0	0	0
-44	1015	0	727	0	0	0	0	0	0	0	0	0	0	0
-43	1413.3	0	1076.1	0	0	0	0	0	0	0	0	0	0	0
-42	1884.9	0	1533	0	0	0.1	0	0	0	0	0	0	0	0
-41	2434.7	0	2120.5	2	0	2.4	0	0	0	0	0	0	0	0
-40	3110.8	0	2841.3	12.9	0	11.6	0	0	0	0	0	0	0	0
-39	3941.1	0	3721	41.9	0	27.6	0.2	0	0	0	0	0	0	0
-38	4907	0	4763.3	86.9	0	57.5	6.6	0	0	0	0	0	0	0
-37	5994.3	0.1	5971.8	153.4	0	105.6	27.2	0	0	0	0	0	0	0
-36	7251.9	3.4	7315.6	259.7	0	212.1	61	7.3	0	0	0	0	0	0
-35	8642	20.3	8799	412.2	0	347.8	110.5	29.7	0.5	0	0	0	0	0
-34	10141.4	69.9	10421.9	623.4	0	528.7	185.1	59.9	13.2	0	0.9	0	0	0
-33	11788.9	164.3	12181.2	898.8	0	762.1	283.6	94.5	52.6	0	11.9	0	0	0
-32	13564.8	304.6	14071.6	1249.9	3	1067.8	408.6	137.2	101.2	0	32.5	0	0	0
-31	15474.3	484.9	16079.5	1701.6	14.4	1424.9	589.4	192.5	157.5	0.2	60.2	0	0	0
-30	17530.2	749.7	18198	2300.2	58.6	1846.9	817.4	263	224.4	15.4	94	0	0	0
-29	19710.5	1146.2	20433.2	3029.7	151.4	2367.3	1110.8	356.9	309.2	50.2	134.8	0	0.7	1.6
-28	22028.2	1699	22775	3913.7	272.2	2988.2	1506.2	475.7	423.6	98.5	200.3	0	12.8	10.4
-27	24490.9	2398.9	25227.9	4947.6	434.2	3703.8	1962.6	630.2	568.3	155.9	283.9	0	38.3	29.1
-26	27071.7	3287	27783.4	6132.3	648.5	4525.8	2474.5	828	753.7	227.8	386.9	0	74	54.8
-25	29756.8	4387.2	30435.4	7469.5	901.1	5460	3061.2	1078.4	976	314.3	514.4	0	124.8	88.7
-24	32558.6	5671.5	33173.4	8971.6	1212.7	6504.9	3728.9	1392.4	1252	416	672.3	0	196.4	135.5
-23	35509.6	7161.3	35995	10638.9	1590.2	7671.1	4510.1	1799.6	1597.1	545.6	858.6	1.9	283.9	199
-22	38600.2	8893.4	38906.1	12473	2029.1	8969.3	5391.3	2288.2	2031.6	716.8	1090.5	17.2	384.8	268.7
-21	41813.2	10843	41904.5	14508	2556.2	10411.6	6362.8	2832.5	2525.8	945.4	1399.9	40.4	504.5	344
-20	45107.4	12985.5	44984.8	16756.4	3208.3	12003.9	7470	3451.5	3072.8	1232.3	1767.1	80.2	649	427.6
-19	48495.3	15290.4	48149.9	19174.8	3982.4	13740.9	8701.4	4154.3	3692.7	1613.6	2209.8	138.1	834.9	529.1
-18	51981.6	17862.3	51406.8	21759.4	4895.9	15612.4	10097.8	4930	4406	2104.6	2765.2	209.8	1077.3	662.6
-17	55571.4	20702.5	54754.8	24501.6	5937.7	17627.1	11658.6	5782.9	5199.7	2688.9	3409.5	298.3	1380.7	846.3
-16	59256.9	23775.8	58189.8	27389.5	7105.7	19803.2	13378.7	6723.8	6074.7	3357.9	4162.6	399.4	1796.4	1077.5
-15	63040.8	27058.4	61710.5	30461	8424.3	22117.6	15278.6	7797.5	7015.2	4134.1	5016.5	521.2	2311.1	1347.7
-14	66909.3	30530.1	65313.2	33771.6	9898.1	24586.8	17359.8	8993.6	8036.3	5030.9	5980.3	677.6	2937	1674.8
-13	70859.2	34202.3	69030.3	37262.3	11547.9	27201.9	19610.1	10318.4	9174.3	6072.2	7096.6	875.7	3659.6	2080.8
-12	74915.8	38039.8	72829	40917.5	13361	29978.8	22031.3	11787.9	10458.8	7262	8341.8	1138.7	4490.4	2568.7
-11	79060.9	42054.3	76704.6	44728.3	15345	32897.4	24607.3	13451.8	11897.6	8596.9	9782.8	1470.4	5441.2	3161.5
-10	83286.4	46291.9	80644.6	48703.7	17532.2	35954.4	27331.7	15337.4	13495	10147.6	11416.3	1929.1	6523.5	3890
-9	87586.8	50745.8	84665.8	52820	19924.3	39157.8	30231.3	17414.8	15265.5	11885.1	13269.3	2553.5	7732.7	4756
-8	91975.5	55384.7	88764.3	57067.4	22515.4	42529.3	33308.2	19711.3	17219.1	13864.3	15334.2	3352.5	9091.8	5802.9
-7	96467.4	60193.2	92950.8	61440.2	25301.4	46066.9	36569.1	22227.4	19365.1	16076.1	17624.5	4332.4	10654.2	7063.6
-6	101071.3	65150.8	97224.9	65942	28298.7	49778.9	40000.2	24945	21724.4	18513.4	20153.9	5524.7	12445.1	8559.3
-5	105806.2	70275.4	101577.4	70595.2	31550.6	53640.2	43585	27898.9	24299.9	21204.8	22899.7	6990.9	14487.7	10299.9
-4	110666.1	75599.8	106023.6	75400.5	35073.3	57695.3	47308.6	31074.2	27092.8	24193.8	25888.5	8802.4	16799.1	12299.9
-3	115657	81139.6	110563.9	80342.1	38842.6	61909.9	51183.4	34490.4	30149	27463.1	29122.7	10950	19392.7	14621.1
-2	120779.3	86915.2	115210.3	85447.7	42877	66263	55214.1	38166.6	33493.9	31026.1	32601.9	13441.1	22247.6	17234.2
-1	126022.2	92899.1	119986.6	90730.4	47171.1	70767.2	59391.7	42140.2	37100.3	34883.1	36324.8	16328.3	25333.9	20164.1
Gh/ (°Ch)	Verho- jansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow- knife	Fair- banks	Karesu- ando	Karasjok	Kiruna	Gällivare	Storlien	Hapa- randa	Öster- sund

*Numerical data on degree hours, running times and temperature frequencies*

Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	Gh/ (°Ch)
26.2	25.8	27.2	28	27.4	30.3	26.9	26.2	27.8	34.4	36.9	34.6	34.9	Max/°C
3.7	4.4	5.4	6.3	6.9	6.9	8.1	8.4	8.4	11.4	16.3	17.9	27.6	Med/°C
3.67	4.34	5.72	6.4	7.2	7.53	7.78	8.45	8.65	11.88	16.71	17.84	27.73	Av/°C
-26.6	-24.6	-21.8	-19.3	-16.8	-18.7	-16.9	-9.4	-13.7	-7	5.1	5	21.9	Min/°C
0	0	0	0	0	0	0	0	0	0	0	0	0	-50
0	0	0	0	0	0	0	0	0	0	0	0	0	-49
0	0	0	0	0	0	0	0	0	0	0	0	0	-48
0	0	0	0	0	0	0	0	0	0	0	0	0	-47
0	0	0	0	0	0	0	0	0	0	0	0	0	-46
0	0	0	0	0	0	0	0	0	0	0	0	0	-45
0	0	0	0	0	0	0	0	0	0	0	0	0	-44
0	0	0	0	0	0	0	0	0	0	0	0	0	-43
0	0	0	0	0	0	0	0	0	0	0	0	0	-42
0	0	0	0	0	0	0	0	0	0	0	0	0	-41
0	0	0	0	0	0	0	0	0	0	0	0	0	-40
0	0	0	0	0	0	0	0	0	0	0	0	0	-39
0	0	0	0	0	0	0	0	0	0	0	0	0	-38
0	0	0	0	0	0	0	0	0	0	0	0	0	-37
0	0	0	0	0	0	0	0	0	0	0	0	0	-36
0	0	0	0	0	0	0	0	0	0	0	0	0	-35
0	0	0	0	0	0	0	0	0	0	0	0	0	-34
0	0	0	0	0	0	0	0	0	0	0	0	0	-33
0	0	0	0	0	0	0	0	0	0	0	0	0	-32
0	0	0	0	0	0	0	0	0	0	0	0	0	-31
0	0	0	0	0	0	0	0	0	0	0	0	0	-30
0	0	0	0	0	0	0	0	0	0	0	0	0	-29
0	0	0	0	0	0	0	0	0	0	0	0	0	-28
0	0	0	0	0	0	0	0	0	0	0	0	0	-27
1.3	0	0	0	0	0	0	0	0	0	0	0	0	-26
14.3	0	0	0	0	0	0	0	0	0	0	0	0	-25
38.1	0.8	0	0	0	0	0	0	0	0	0	0	0	-24
70.2	7.6	0	0	0	0	0	0	0	0	0	0	0	-23
114.6	20.1	0	0	0	0	0	0	0	0	0	0	0	-22
168.6	49.4	1.7	0	0	0	0	0	0	0	0	0	0	-21
226.4	85.9	7.8	0	0	0	0	0	0	0	0	0	0	-20
290.6	134.3	21.5	0.9	0	0	0	0	0	0	0	0	0	-19
378.9	201.4	47.6	12	0	0.9	0	0	0	0	0	0	0	-18
499.5	296.9	86.5	38.2	0	6.6	0	0	0	0	0	0	0	-17
680.8	428	132.1	76.2	1.9	28.6	5.3	0	0	0	0	0	0	-16
912.8	603.5	188.1	122.9	12.8	62.5	18	0	0	0	0	0	0	-15
1208.9	844	256.6	183.4	31.8	101.1	36	0	0	0	0	0	0	-14
1586	1135	361.4	269	66.4	148	58.9	0	6.4	0	0	0	0	-13
2062.7	1482	498.6	384.6	122.3	205.3	94.2	0	21.2	0	0	0	0	-12
2646.5	1917.2	661	526.5	203.9	274.6	152.7	0	39.3	0	0	0	0	-11
3341.8	2449	864.1	701.6	301.8	361.5	245.4	0	61.5	0	0	0	0	-10
4191.5	3128.9	1116.4	922.8	429.2	495.6	357.9	0.4	97.5	0	0	0	0	-9
5217	3973.8	1457.5	1221.2	594.1	701.4	502.7	13	159.8	0	0	0	0	-8
6385.5	4961.5	1926.2	1604.9	799.1	969.9	681.8	42.2	242.9	0	0	0	0	-7
7713.8	6110.2	2536.1	2121.2	1095.8	1305.1	921.7	93.3	362	2.4	0	0	0	-6
9216.5	7463.5	3330.8	2779.5	1529.3	1737.3	1247.4	185.4	528.6	12.8	0	0	0	-5
10947.5	9047.2	4339.5	3623.6	2119.3	2339.4	1692.1	325.2	761.4	37.6	0	0	0	-4
12943.3	10886.9	5566.1	4690.6	2891.9	3168.2	2320.9	557.2	1086.6	84.1	0	0	0	-3
15224.7	12987.5	7044.4	6052.8	3898.8	4235	3129.1	940.9	1593.3	181.8	0	0	0	-2
17846.3	15386.6	8817.1	7712.1	5176.6	5536.6	4173.8	1566.9	2319	339	0	0	0	-1
Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	Gh/ (°Ch)

Gh/ (°Ch)	Verho- jansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow- knife	Fair- banks	Karesu- ando	Karasjok	Kiruna	Gällivare	Storlien	Hapa- randa	Öster- sund
0	131406.6	99107.5	124884	96180.9	51750.9	75441.8	63732.5	46381.8	40974.5	39022.7	40310.2	19639.6	28697.5	23449.8
1	136950.3	105569.4	129895.3	101795.1	56651	80290.7	68250.9	50922.3	45161.8	43443.6	44546.2	23402.6	32394.9	27022.7
2	142653.5	112318.4	135025	107570.2	61983.1	85306.7	72955.3	55735.8	49690	48145.3	49013.7	27598.5	36390.7	30911.9
3	148523	119375	140285.5	113501.4	67716.8	90500.9	77839.9	60836.5	54557.8	53150.4	53736.3	32219.9	40676.2	35122.7
4	154545.4	126782.9	145689.3	119589.9	73922.9	95850.7	82870.5	66281	59772.4	58465	58749.6	37241.6	45286.7	39659.5
5	160719.1	134523	151247.2	125844.7	80663.6	101374.5	88071	71994.6	65318.7	64086.2	64052.3	42670.5	50208.8	44535.1
6	167045.7	142558.8	156958.7	132270	87894.6	107068.2	93436.5	77965.2	71197.5	69955.5	69630	48478.7	55419.9	49733.4
7	173511.9	150845.5	162839.1	138865.8	95561.1	112942.4	98983.6	84196.8	77386.7	76058.5	75477.2	54607.8	60924.9	55241.2
8	180121.4	159328.5	168886	145625	103654.5	119001.7	104726.5	90690.8	83823.5	82426.3	81641.9	61047.2	66672.5	61048
9	186887.9	167931.7	175078.9	152547.2	112087.1	125245.8	110674.8	97439.9	90501.6	89063.2	88093.2	67791.9	72675.5	67171.1
10	193819.6	176615.9	181412.9	159661.6	120714.2	131675.9	116833.1	104436.4	97421.9	95976.6	94789.1	74833.9	78931.9	73604.7
11	200919.4	185340.8	187907	166969.8	129422.4	138277.3	123207.3	111670.2	104577.5	103149.8	101732.3	82120.5	85417.3	80351.8
12	208172.2	194083.1	194573.5	174440.5	138179.5	145090.9	129794.9	119130.6	111982.8	110567.7	108910	89647.9	92138.7	87445.9
13	215581.9	202839.1	201390.7	182071.1	146939.5	152104.9	136599.1	126799.3	119622.7	118186.8	116306.5	97417.2	99069.4	94845.6
14	223169.6	211599.1	208354.8	189848.9	155699.5	159342.3	143631.6	134645.8	127494.2	125993.9	123904.8	105399	106234.1	102506.1
15	230916.1	220359.1	215475.6	197763.8	164459.5	166801.1	150896.8	142675.1	135582.8	133975	131695.2	113556.1	113658.7	110396.8
16	238800.3	229119.1	222748.7	205820.1	173219.5	174465	158380.3	150877.3	143832.8	142123.5	139675.4	121872	121310.4	118478.4
17	246835.6	237879.1	230189.6	214014.1	181979.5	182330.6	166074.6	159228.2	152211.6	150410.7	147827.2	130314.6	129186.2	126721.8
18	254985.2	246639.1	237799.9	222324.1	190739.5	190398.3	173948.3	167690.7	160676.1	158814.8	156135.9	138849.3	137278	135108.7
19	263233.3	255399.1	245565	230741.6	199499.5	198623.4	181995.5	176232.1	169218.6	167325.7	164587.5	147447.7	145544	143607
20	271580.2	264159.1	253470.2	239230.5	208259.5	206985.1	190197.4	184846	177826.5	175928.2	173122.1	156102.6	153950.4	152184.8
21	280012.9	272919.1	261506.9	247790.8	217019.5	215460.9	198531.7	193517.3	186485.3	184599.4	181727.2	164799	162469.9	160823.9
22	288519.1	281679.1	269671.5	256404.6	225779.5	224032.7	206995.4	202227.1	195188.3	193314.7	190383	173535.2	171069.4	169500.8
23	297095.7	290439.1	277962.3	265054.7	234539.5	232668.5	215555.9	210964.5	203921.6	202059.4	199078.3	182288.4	179737.4	178219.4
24	305727.1	299199.1	286365.8	273747.2	243299.5	241347	224178	219723.2	212671.2	210818.7	207806	191047	188454.1	186960.6
25	314402.9	307959.1	294856.4	282469	252059.5	250057.8	232849.2	228483.2	221426.4	219578.7	216548.8	199807	197197.7	195713.9
26	323107.7	316719.1	303414.3	291207.4	260819.5	258788.7	241554.6	237243.2	230184.6	228338.7	225306	208567	205950	204471.6
27	331837.4	325479.1	312040.9	299951.8	269579.5	267532.4	250284.9	246003.2	238944.6	237098.7	234066	217327	214708.5	213231.6
28	340581.5	334239.1	320704.8	308704.3	278339.5	276286.4	259032.9	254763.2	247704.6	245858.7	242826	226087	223468.5	221991.6
29	349333.3	342999.1	329404.7	317464.3	287099.5	285046.1	267791.4	263523.2	256464.6	254618.7	251586	234847	232228.5	230751.6
30	358092.8	351759.1	338130.1	326224.3	295859.5	293806.1	276551.4	272283.2	265224.6	263378.7	260346	243607	240988.5	239511.6
31	366852.8	360519.1	346881.6	334984.3	304619.5	302566.1	285311.4	281043.2	273984.6	272138.7	269106	252367	249748.5	248271.6
32	375612.8	369279.1	355641.3	343744.3	313379.5	311326.1	294071.4	289803.2	282744.6	280898.7	277866	261127	258508.5	257031.6
33	384372.8	378039.1	364401.3	352504.3	322139.5	320086.1	302831.4	298563.2	291504.6	289658.7	286626	269887	267268.5	265791.6
34	393132.8	386799.1	373161.3	361264.3	330899.5	328846.1	311591.4	307323.2	300264.6	298418.7	295386	278647	276028.5	274551.6
35	401892.8	395559.1	381921.3	370024.3	339659.5	337606.1	320351.4	316083.2	309024.6	307178.7	304146	287407	284788.5	283311.6
36	410652.8	404319.1	390681.3	378784.3	348419.5	346366.1	329111.4	324843.2	317784.6	315938.7	312906	296167	293548.5	292071.6
37	419412.8	413079.1	399441.3	387544.3	357179.5	355126.1	337871.4	333603.2	326544.6	324698.7	321666	304927	302308.5	300831.6
38	428172.8	421839.1	408201.3	396304.3	365939.5	363886.1	346631.4	342363.2	335304.6	333458.7	330426	313687	311068.5	309591.6
39	436932.8	430599.1	416961.3	405064.3	374699.5	372646.1	355391.4	351123.2	344064.6	342218.7	339186	322447	319828.5	318351.6
40	445692.8	439359.1	425721.3	413824.3	383459.5	381406.1	364151.4	359883.2	352824.6	350978.7	347946	331207	328588.5	327111.6
41	454452.8	448119.1	434481.3	422584.3	392219.5	390166.1	372911.4	368643.2	361584.6	359738.7	356706	339967	337348.5	335871.6
42	463212.8	456879.1	443241.3	431344.3	400979.5	398926.1	381671.4	377403.2	370344.6	368498.7	365466	348727	346108.5	344631.6
43	471972.8	465639.1	452001.3	440104.3	409739.5	407686.1	390431.4	386163.2	379104.6	377258.7	374226	357487	354868.5	353391.6
44	480732.8	474399.1	460761.3	448864.3	418499.5	416446.1	399191.4	394923.2	387864.6	386018.7	382986	366247	363628.5	362151.6
45	489492.8	483159.1	469521.3	457624.3	427259.5	425206.1	407951.4	403683.2	396624.6	394778.7	391746	375007	372388.5	370911.6
46	498252.8	491919.1	478281.3	466384.3	436019.5	433966.1	416711.4	412443.2	405384.6	403538.7	400506	383767	381148.5	379671.6
47	507012.8	500679.1	487041.3	475144.3	444779.5	442726.1	425471.4	421203.2	414144.6	412298.7	409266	392527	389908.5	388431.6
48	515772.8	509439.1	495801.3	483904.3	453539.5	451486.1	434231.4	429963.2	422904.6	421058.7	418026	401287	398668.5	397191.6
49	524532.8	518199.1	504561.3	492664.3	462299.5	460246.1	442991.4	438723.2	431664.6	429818.7	426786	410047	407428.5	405951.6
50	533292.8	526959.1	513321.3	501424.3	471059.5	469006.1	451751.4	447483.2	440424.6	438578.7	435546	418807	416188.5	414711.6
Gh/ (°Ch)	Verho- jansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow- knife	Fair- banks	Karesu- ando	Karasjok	Kiruna	Gällivare	Storlien	Hapa- randa	Öster- sund

*Numerical data on degree hours, running times and temperature frequencies*

Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	Gh/ (°C·h)
20785.8	18145.7	10983.1	9690.3	6764.5	7183	5501	2470.8	3308.5	595.8	0	0	0	0
24065.2	21279.9	13572.9	11996.3	8698.5	9197.2	7187	3722.2	4644.7	1001.3	0	0	0	1
27698.4	24729.8	16536.5	14666.5	11011.1	11632.5	9216.8	5376.3	6334.5	1593.9	0	0	0	2
31669.7	28489.8	19859.6	17716.4	13698.2	14417.2	11595.4	7457.1	8416.9	2434.9	0	0	0	3
35983.6	32571	23551.6	21137.2	16803.7	17547.5	14333.8	9947.2	10932.3	3554	0	0	0	4
40653.8	36993.6	27617.1	24898.7	20331.1	21058.8	17418.2	12852.3	13874.9	4964.2	0	0	0	5
45648.4	41763.4	32045.2	29026.3	24213.2	24929.4	20848	16171.2	17226	6732	21.1	12.2	0	6
50936.3	46840.8	36833.5	33501.7	28434.6	29149.6	24665.8	19880.8	20952.8	8864.6	95.3	63	0	7
56506.7	52230.1	41966.5	38307.5	33029.4	33714.3	28846.4	23946.6	25041.7	11375.4	271.6	178.5	0	8
62363.7	57924.6	47406.5	43410.9	37970.8	38567.9	33417.3	28362.1	29465.3	14360.1	624.2	411.9	0	9
68481.4	63901.7	53158.1	48869.9	43271.6	43706.1	38406.6	33168.7	34219.4	17838.3	1284.2	836.2	0	10
74867.4	70124.3	59210.3	54684.4	48924.1	49128.7	43789.8	38378.2	39271.8	21809.4	2358.3	1498.6	0	11
81512.5	76592	65548.1	60799.3	54897.3	54856.9	49564.8	44014.6	44655.7	26235.1	3916.3	2451.3	0	12
88433	83300.2	72168.4	67239.8	61202.9	60867.8	55677.2	50104.1	50424.3	31082.9	6029.5	3773.1	0	13
95615.9	90295.9	79061.3	73982.3	67805.7	67160	62123.4	56575.9	56583.1	36338.1	8702.1	5496	0	14
103049.2	97588.7	86239.1	81026.8	74688.8	73757	68924.9	63390.9	63104.6	41985.2	11975.6	7689.2	0	15
110724.9	105169.8	93725.8	88360.4	81883.5	80637.7	76071	70542.2	69986.4	48004	15826.5	10428	0	16
118616.7	113014.2	101462.4	95942.9	89354.7	87816.1	83545.3	78009	77205.6	54386.6	20301	13823.8	0	17
126722.3	121097.5	109421.5	103781.4	97075.7	95299.6	91342.7	85754.3	84749.6	61118.3	25403.3	17934.4	0	18
135023.7	129349.7	117566.8	111845.9	105032.8	103060.1	99408.3	93739.8	92569.4	68163.6	31083.3	22747.6	0	19
143478.2	137735.1	125865.5	120102.5	113194.9	111043	107683	101946.4	100657.9	75495.7	37250.2	28251.3	0	20
152049.2	146249.5	134308.6	128501.2	121533.8	119216.3	116142	110331.4	108938.5	83129.3	43856.4	34391.9	0	21
160696.7	154850.3	142859.2	137012.1	130010	127552.1	124722.9	118876.8	117387.1	91007.7	50879.8	41122.2	0.1	22
169403.7	163513.4	151499.9	145608.7	138599.1	136007.3	133376.9	127520	125947.1	99077.7	58281.3	48359.7	19	23
178138.1	172220.8	160193	154274.9	147263.6	144554.4	142084.9	136220.7	134579.1	107307.7	66018.3	56026.2	271	24
186888	180955.1	168922.2	162996.6	155974.8	153169	150822.3	144949.3	143257.8	115670.6	74045.2	64027.6	1110.7	25
195643.6	189709.4	177666	171737.8	164715	161842.8	159576.5	153695.6	151970.9	124160.5	82296.4	72282	2893.6	26
204403.3	198469.4	186418.6	180492.2	173468.3	170556.6	168333.5	162455	160715.7	132737.5	90708.2	80714.2	5842.3	27
213163.3	207229.4	195178.3	189249.7	182227.5	179297.9	177093.5	171215	169471.8	141380.4	99240.5	89273.5	10135.9	28
221923.3	215989.4	203938.3	198009.7	190987.5	188050.7	185853.5	179975	178231.8	150070.3	107847.3	97918.4	15655.6	29
230683.3	224749.4	212698.3	206769.7	199747.5	196805.9	194613.5	188735	186991.8	158786.8	116507.6	106611.4	22259	30
239443.3	233509.4	221458.3	215529.7	208507.5	205565.2	203373.5	197495	195751.8	167523.6	125214.2	115335.5	29739.5	31
248203.3	242269.4	230218.3	224289.7	217267.5	214325.2	212133.5	206255	204511.8	176268.4	133943.5	124076	37836.7	32
256963.3	251029.4	238978.3	233049.7	226027.5	223085.2	220893.5	215015	213271.8	185018.4	142685	132826.6	46298.2	33
265723.3	259789.4	247738.3	241809.7	234787.5	231845.2	229653.5	223775	222031.8	193774.1	151433.4	141582.8	54974.6	34
274483.3	268549.4	256498.3	250569.7	243547.5	240605.2	238413.5	232535	230791.8	202533.3	160186.6	150341.7	63728.2	35
283243.3	277309.4	265258.3	259329.7	252307.5	249365.2	247173.5	241295	239551.8	211293.3	168941.6	159101.7	72488.2	36
292003.3	286069.4	274018.3	268089.7	261067.5	258125.2	255933.5	250055	248311.8	220053.3	177699.2	167861.7	81248.2	37
300763.3	294829.4	282778.3	276849.7	269827.5	266885.2	264693.5	258815	257071.8	228813.3	186459.2	176621.7	90008.2	38
309523.3	303589.4	291538.3	285609.7	278587.5	275645.2	273453.5	267575	265831.8	237573.3	195219.2	185381.7	98768.2	39
318283.3	312349.4	300298.3	294369.7	287347.5	284405.2	282213.5	276335	274591.8	246333.3	203979.2	194141.7	107528.2	40
327043.3	321109.4	309058.3	303129.7	296107.5	293165.2	290973.5	285095	283351.8	255093.3	212739.2	202901.7	116288.2	41
335803.3	329869.4	317818.3	311889.7	304867.5	301925.2	299733.5	293855	292111.8	263853.3	221499.2	211661.7	125048.2	42
344563.3	338629.4	326578.3	320649.7	313627.5	310685.2	308493.5	302615	300871.8	272613.3	230259.2	220421.7	133808.2	43
353323.3	347389.4	335338.3	329409.7	322387.5	319445.2	317253.5	311375	309631.8	281373.3	239019.2	229181.7	142568.2	44
362083.3	356149.4	344098.3	338169.7	331147.5	328205.2	326013.5	320135	318391.8	290133.3	247779.2	237941.7	151328.2	45
370843.3	364909.4	352858.3	346929.7	339907.5	336965.2	334773.5	328895	327151.8	298893.3	256539.2	246701.7	160088.2	46
379603.3	373669.4	361618.3	355689.7	348667.5	345725.2	343533.5	337655	335911.8	307653.3	265299.2	255461.7	168848.2	47
388363.3	382429.4	370378.3	364449.7	357427.5	354485.2	352293.5	346415	344671.8	316413.3	274059.2	264221.7	177608.2	48
397123.3	391189.4	379138.3	373209.7	366187.5	363245.2	361053.5	355175	353431.8	325173.3	282819.2	272981.7	186368.2	49
405883.3	399949.4	387898.3	381969.7	374947.5	372005.2	369813.5	363935	362191.8	333933.3	291579.2	281741.7	195128.2	50
Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	Gh/ (°C·h)

d/h	Verho-jansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow-knife	Fair-banks	Karesu-ando	Karasjok	Kiruna	Gällivare	Storlien	Hapa-randa	Öster-sund
-50	29.05	0	3.2	0	0	0	0	0	0	0	0	0	0	0
-49	67	0	22.6	0	0	0	0	0	0	0	0	0	0	0
-48	107.45	0	61.7	0	0	0	0	0	0	0	0	0	0	0
-47	153.45	0	108.05	0	0	0	0	0	0	0	0	0	0	0
-46	212.05	0	165.35	0	0	0	0	0	0	0	0	0	0	0
-45	282.4	0	232.85	0	0	0	0	0	0	0	0	0	0	0
-44	358.1	0	307.8	0	0	0	0	0	0	0	0	0	0	0
-43	434.95	0	403	0	0	0.05	0	0	0	0	0	0	0	0
-42	510.7	0	522.2	1	0	1.2	0	0	0	0	0	0	0	0
-41	612.95	0	654.15	6.45	0	5.75	0	0	0	0	0	0	0	0
-40	753.2	0	800.25	19.95	0	12.6	0.1	0	0	0	0	0	0	0
-39	898.1	0	961	37	0	22.95	3.3	0	0	0	0	0	0	0
-38	1026.6	0.05	1125.4	55.75	0	39	13.5	0	0	0	0	0	0	0
-37	1172.45	1.7	1276.15	86.4	0	77.3	27.2	3.65	0	0	0	0	0	0
-36	1323.85	10.1	1413.6	129.4	0	121.1	41.65	14.85	0.25	0	0	0	0	0
-35	1444.75	33.25	1553.15	181.85	0	158.3	62.05	26.3	6.6	0	0.45	0	0	0
-34	1573.45	72	1691.1	243.3	0	207.15	86.55	32.4	26.05	0	5.95	0	0	0
-33	1711.7	117.35	1824.85	313.25	1.5	269.55	111.75	38.65	44	0	15.8	0	0	0
-32	1842.7	160.3	1949.15	401.4	7.2	331.4	152.9	49	52.45	0.1	24.15	0	0	0
-31	1982.7	222.55	2063.2	525.15	27.8	389.55	204.4	62.9	61.6	7.7	30.75	0	0	0
-30	2118.1	330.65	2176.85	664.05	68.5	471.2	260.7	82.2	75.85	25	37.3	0	0.35	0.8
-29	2249	474.65	2288.5	806.75	106.8	570.65	344.4	106.35	99.6	41.55	53.15	0	6.4	5.2
-28	2390.2	626.35	2397.35	958.95	141.4	668.25	425.9	136.65	129.55	52.85	74.55	0	18.8	13.75
-27	2521.75	794	2504.2	1109.3	188.15	768.8	484.15	176.15	165.05	64.65	93.3	0	30.6	22.2
-26	2632.95	994.15	2603.75	1260.95	233.45	878.1	549.3	224.1	203.85	79.2	115.25	0	43.25	29.8
-25	2743.45	1192.25	2695	1419.65	282.1	989.55	627.2	282.2	249.15	94.1	142.7	0	61.2	40.35
-24	2876.4	1387.05	2779.8	1584.7	344.55	1105.55	724.45	360.6	310.55	115.65	172.1	0.95	79.55	55.15
-23	3020.8	1610.95	2866.35	1750.7	408.2	1232.2	831.2	447.9	389.8	150.4	209.1	8.6	94.2	66.6
-22	3151.8	1840.85	2954.75	1934.55	483	1370.25	926.35	516.45	464.35	199.9	270.65	19.25	110.3	72.5
-21	3253.6	2046.05	3039.35	2141.7	589.6	1517.3	1039.35	581.65	520.6	257.75	338.3	31.5	132.1	79.45
-20	3341.05	2223.7	3122.7	2333.4	713.1	1664.65	1169.3	660.9	583.45	334.1	404.95	48.85	165.2	92.55
-19	3437.1	2438.4	3211	2501.5	843.8	1804.25	1313.9	739.25	666.6	436.15	499.05	64.8	214.15	117.5
-18	3538.05	2706.05	3302.45	2663.4	977.65	1943.1	1478.6	814.3	753.5	537.65	599.85	80.1	272.9	158.6
-17	3637.65	2956.75	3391.5	2815.05	1104.9	2095.4	1640.45	896.9	834.35	626.65	698.7	94.8	359.55	207.45
-16	3734.7	3177.95	3477.85	2979.7	1243.3	2245.25	1810	1007.3	907.75	722.6	803.5	111.45	465.2	250.7
-15	3826.2	3377.15	3561.7	3191.05	1396.2	2391.8	1990.55	1134.9	980.8	836.5	908.85	139.1	570.3	298.65
-14	3909.2	3571.95	3659.9	3400.65	1561.8	2542.15	2165.75	1260.45	1079.55	969.05	1040.05	177.25	674.25	366.55
-13	4003.25	3754.85	3757.9	3572.95	1731.45	2696	2335.75	1397.15	1211.25	1115.55	1180.75	230.55	776.7	446.95
-12	4100.85	3926	3837.15	3733	1898.55	2847.75	2498.6	1566.7	1361.65	1262.35	1343.1	297.35	890.8	540.35
-11	4185.3	4126.05	3907.8	3893.1	2085.6	2987.8	2650.2	1774.75	1518.1	1442.8	1537.25	395.2	1016.55	660.65
-10	4262.95	4345.75	3980.6	4045.85	2289.65	3130.2	2812	1981.5	1683.95	1644.1	1743.25	541.55	1145.75	797.25
-9	4344.55	4546.4	4059.85	4181.85	2491.6	3287.45	2988.25	2186.95	1862.05	1858.35	1958.95	711.7	1284.15	956.45
-8	4440.3	4723.7	4142.5	4310.1	2688.55	3454.55	3168.9	2406.3	2049.8	2095.5	2177.6	889.45	1460.75	1153.8
-7	4547.9	4883.05	4230.3	4437.3	2891.65	3624.8	3346	2616.85	2252.65	2324.55	2409.85	1086.1	1676.65	1378.2
-6	4669.4	5041.1	4313.3	4577.5	3124.6	3786.65	3507.95	2835.75	2467.4	2564.35	2637.6	1329.25	1916.75	1618.15
-5	4797.4	5224.5	4399.35	4729.25	3387.3	3958.2	3654.2	3064.6	2684.2	2840.2	2867.3	1638.85	2177	1870.3
-4	4925.4	5432.1	4493.25	4873.45	3646	4134.85	3799.2	3295.75	2924.55	3129.15	3111.5	1979.55	2452.5	2160.6
-3	5056.6	5657.7	4593.35	5023.6	3901.85	4283.85	3952.75	3546.2	3200.55	3416.15	3356.7	2319.35	2724.25	2467.15
-2	5182.6	5879.75	4711.35	5194.15	4164.25	4428.65	4104.15	3824.9	3475.65	3710	3601.05	2689.15	2970.6	2771.5
-1	5313.65	6096.15	4836.85	5366.6	4436.95	4589.4	4259.2	4107.6	3740.3	3998.3	3854.15	3099.25	3224.95	3107.8
d/h	Verho-jansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow-knife	Fair-banks	Karesu-ando	Karasjok	Kiruna	Gällivare	Storlien	Hapa-randa	Öster-sund

*Numerical data on degree hours, running times and temperature frequencies*

Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	d/h
0	0	0	0	0	0	0	0	0	0	0	0	0	-50
0	0	0	0	0	0	0	0	0	0	0	0	0	-49
0	0	0	0	0	0	0	0	0	0	0	0	0	-48
0	0	0	0	0	0	0	0	0	0	0	0	0	-47
0	0	0	0	0	0	0	0	0	0	0	0	0	-46
0	0	0	0	0	0	0	0	0	0	0	0	0	-45
0	0	0	0	0	0	0	0	0	0	0	0	0	-44
0	0	0	0	0	0	0	0	0	0	0	0	0	-43
0	0	0	0	0	0	0	0	0	0	0	0	0	-42
0	0	0	0	0	0	0	0	0	0	0	0	0	-41
0	0	0	0	0	0	0	0	0	0	0	0	0	-40
0	0	0	0	0	0	0	0	0	0	0	0	0	-39
0	0	0	0	0	0	0	0	0	0	0	0	0	-38
0	0	0	0	0	0	0	0	0	0	0	0	0	-37
0	0	0	0	0	0	0	0	0	0	0	0	0	-36
0	0	0	0	0	0	0	0	0	0	0	0	0	-35
0	0	0	0	0	0	0	0	0	0	0	0	0	-34
0	0	0	0	0	0	0	0	0	0	0	0	0	-33
0	0	0	0	0	0	0	0	0	0	0	0	0	-32
0	0	0	0	0	0	0	0	0	0	0	0	0	-31
0	0	0	0	0	0	0	0	0	0	0	0	0	-30
0	0	0	0	0	0	0	0	0	0	0	0	0	-29
0	0	0	0	0	0	0	0	0	0	0	0	0	-28
0.65	0	0	0	0	0	0	0	0	0	0	0	0	-27
7.15	0	0	0	0	0	0	0	0	0	0	0	0	-26
18.4	0.4	0	0	0	0	0	0	0	0	0	0	0	-25
27.95	3.8	0	0	0	0	0	0	0	0	0	0	0	-24
38.25	9.65	0	0	0	0	0	0	0	0	0	0	0	-23
49.2	20.9	0.85	0	0	0	0	0	0	0	0	0	0	-22
55.9	32.9	3.9	0	0	0	0	0	0	0	0	0	0	-21
61	42.45	9.9	0.45	0	0	0	0	0	0	0	0	0	-20
76.25	57.75	19.9	6	0	0.45	0	0	0	0	0	0	0	-19
104.45	81.3	32.5	18.65	0	3.3	0	0	0	0	0	0	0	-18
150.95	113.3	42.25	32.1	0.95	13.85	2.65	0	0	0	0	0	0	-17
206.65	153.3	50.8	42.35	6.4	27.95	9	0	0	0	0	0	0	-16
264.05	208	62.25	53.6	14.95	36.25	15.35	0	0	0	0	0	0	-15
336.6	265.75	86.65	73.05	26.8	42.75	20.45	0	3.2	0	0	0	0	-14
426.9	319	121	100.6	45.25	52.1	29.1	0	10.6	0	0	0	0	-13
530.25	391.1	149.8	128.75	68.75	63.3	46.9	0	16.45	0	0	0	0	-12
639.55	483.5	182.75	158.5	89.75	78.1	75.6	0	20.15	0	0	0	0	-11
772.5	605.85	227.7	198.15	112.65	110.5	102.6	0.2	29.1	0	0	0	0	-10
937.6	762.4	296.7	259.8	146.15	169.95	128.65	6.5	49.15	0	0	0	0	-9
1097	916.3	404.9	341.05	184.95	237.15	161.95	20.9	72.7	0	0	0	0	-8
1248.4	1068.2	539.3	450	250.85	301.85	209.5	40.15	101.1	1.2	0	0	0	-7
1415.5	1251	702.3	587.3	365.1	383.7	282.8	71.6	142.85	6.4	0	0	0	-6
1616.85	1468.5	901.7	751.2	511.75	517.15	385.2	115.95	199.7	17.6	0	0	0	-5
1863.4	1711.7	1117.65	955.55	681.3	715.45	536.75	185.9	279	35.65	0	0	0	-4
2138.6	1970.15	1352.45	1214.6	889.75	947.8	718.5	307.85	415.95	72.1	0	0	0	-3
2451.5	2249.85	1625.5	1510.75	1142.35	1184.2	926.45	504.85	616.2	127.45	0	0	0	-2
2780.55	2579.1	1969.35	1818.75	1432.85	1474	1185.95	764.95	857.6	207	0	0	0	-1
Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	d/h

d	Verhojansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow-knife	Fairbanks	Karesuando	Karasjok	Kiruna	Gällivare	Storlien	Haparanda	Östersund
0	5464.05	6335.15	4954.35	5532.35	4739.95	4761.75	4429.6	4391.05	4030.75	4280.25	4110.7	3537.15	3530.5	3429.3
1	5623.45	6605.45	5070.5	5694.65	5116.1	4932.45	4611.4	4677	4357.75	4561.3	4351.75	3979.45	3846.6	3731.05
2	5786.35	6902.8	5195.1	5853.15	5532.9	5105.1	4794.5	4957.1	4698	4853.4	4595.05	4408.65	4140.65	4050
3	5945.95	7232.25	5332.15	6009.85	5969.9	5272	4957.6	5272.6	5041.2	5159.85	4867.95	4821.55	4448	4373.8
4	6098.05	7574	5480.85	6171.65	6473.4	5436.8	5115.55	5579.05	5380.45	5467.9	5158	5225.3	4766.3	4706.2
5	6250.15	7887.95	5634.7	6340.05	6985.85	5608.75	5283	5842.1	5712.55	5745.25	5440.2	5618.55	5066.6	5036.95
6	6396.4	8161.25	5795.95	6510.55	7448.75	5783.95	5456.3	6101.1	6034	5986.15	5712.45	5968.65	5358.05	5353.05
7	6537.85	8384.85	5963.65	6677.5	7879.95	5966.75	5645	6362.8	6313	6235.4	6005.95	6284.25	5626.3	5657.3
8	6688	8543.1	6119.9	6840.7	8263	6151.7	5845.6	6621.55	6557.45	6502.35	6308	6592.05	5875.3	5964.95
9	6849.1	8643.7	6263.45	7018.3	8529.85	6337.1	6053.3	6872.8	6799.2	6775.15	6573.6	6893.35	6129.7	6278.35
10	7015.75	8704.55	6414.05	7211.3	8667.65	6515.75	6266.25	7115.15	7037.95	7043.3	6819.55	7164.3	6370.9	6590.35
11	7176.3	8733.6	6580.3	7389.45	8732.65	6707.5	6480.9	7347.1	7280.45	7295.55	7060.45	7407	6603.4	6920.6
12	7331.25	8749.15	6741.85	7550.65	8758.55	6913.8	6695.9	7564.55	7522.6	7518.5	7287.1	7648.35	6826.05	7246.9
13	7498.7	8758	6890.65	7704.2	8760	7125.7	6918.35	7757.6	7755.7	7713.1	7497.4	7875.55	7047.7	7530.1
14	7667.1	8760	7042.45	7846.35	8760	7348.1	7148.85	7937.9	7980.05	7894.1	7694.35	8069.45	7294.65	7775.6
15	7815.35	8760	7196.95	7985.6	8760	7561.35	7374.35	8115.75	8169.3	8064.8	7885.3	8236.5	7538.15	7986.15
16	7959.75	8760	7357	8125.15	8760	7764.75	7588.9	8276.55	8314.4	8217.85	8066	8379.25	7763.75	8162.5
17	8092.45	8760	7525.6	8252	8760	7966.65	7784	8406.7	8421.65	8345.65	8230.25	8488.65	7983.8	8315.15
18	8198.85	8760	7687.7	8363.75	8760	8146.4	7960.45	8501.95	8503.5	8457.5	8380.15	8566.55	8178.9	8442.6
19	8297.5	8760	7835.15	8453.2	8760	8293.4	8124.55	8577.65	8575.2	8556.7	8493.1	8626.65	8336.2	8538.05
20	8389.8	8760	7970.95	8524.6	8760	8418.75	8268.1	8642.6	8633.35	8636.85	8569.85	8675.65	8462.95	8608.45
21	8469.45	8760	8100.65	8587.05	8760	8523.8	8399	8690.55	8680.9	8693.25	8630.45	8716.3	8559.5	8658
22	8541.4	8760	8227.7	8631.95	8760	8603.8	8512.1	8723.6	8718.15	8730	8675.55	8744.7	8633.75	8697.75
23	8604	8760	8347.15	8671.3	8760	8657.15	8591.3	8748.05	8741.45	8752	8711.5	8755.9	8692.35	8729.9
24	8653.6	8760	8447.05	8707.15	8760	8694.65	8646.65	8759.35	8752.4	8759.65	8735.25	8759.3	8730.15	8747.25
25	8690.3	8760	8524.25	8730.1	8760	8720.85	8688.3	8760	8756.7	8760	8750	8760	8747.95	8755.5
26	8717.25	8760	8592.25	8741.4	8760	8737.3	8717.85	8760	8759.1	8760	8758.6	8760	8755.4	8758.85
27	8736.9	8760	8645.25	8748.45	8760	8748.85	8739.15	8760	8760	8760	8760	8760	8759.25	8760
28	8747.95	8760	8681.9	8756.25	8760	8756.85	8753.25	8760	8760	8760	8760	8760	8760	8760
29	8755.65	8760	8712.65	8760	8760	8759.85	8759.25	8760	8760	8760	8760	8760	8760	8760
30	8759.75	8760	8738.45	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
31	8760	8760	8755.6	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
32	8760	8760	8759.85	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
33	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
34	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
35	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
36	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
37	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
38	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
39	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
40	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
41	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
42	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
43	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
44	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
45	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
46	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
47	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
48	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
49	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
50	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760
d	Verhojansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow-knife	Fairbanks	Karesuando	Karasjok	Kiruna	Gällivare	Storlien	Haparanda	Östersund

*Numerical data on degree hours, running times and temperature frequencies*

Umeå	Sundsvall	Gävle	Karlstad	Växjö	Stockholm	Göteborg	Malmö	Halmstad	Paris	Lisboa	Los Angeles	Singapore	d/h
3109.45	2946.65	2377.9	2142.1	1760.95	1830.3	1506.6	1077.65	1162.85	331.15	0	0	0	0
3456.3	3292.05	2776.7	2488.1	2123.3	2224.75	1857.9	1452.75	1513	499.05	0	0	0	1
3802.25	3604.95	3143.35	2860.05	2499.85	2610	2204.2	1867.45	1886.1	716.8	0	0	0	2
4142.6	3920.6	3507.55	3235.35	2896.3	2957.5	2558.5	2285.45	2298.9	980.05	0	0	0	3
4492.05	4251.9	3878.75	3591.15	3316.45	3320.8	2911.4	2697.6	2729	1264.65	0	0	0	4
4832.4	4596.2	4246.8	3944.55	3704.75	3690.95	3257.1	3112	3146.85	1589	10.55	6.1	0	5
5141.25	4923.6	4608.2	4301.5	4051.75	4045.4	3623.8	3514.25	3538.95	1950.2	47.65	31.5	0	6
5429.15	5233.35	4960.65	4640.6	4408.1	4392.45	3999.2	3887.7	3907.85	2321.7	125.25	83.15	0	7
5713.7	5541.9	5286.5	4954.6	4768.1	4709.15	4375.75	4240.65	4256.25	2747.75	264.45	174.45	0	8
5987.35	5835.8	5595.8	5281.2	5121.1	4995.9	4780.1	4611.05	4588.85	3231.45	506.3	328.85	0	9
6251.85	6099.85	5901.9	5636.75	5476.65	5280.4	5186.25	5008.05	4903.25	3724.65	867.05	543.35	0	10
6515.55	6345.15	6195	5964.7	5812.85	5575.4	5579.1	5422.95	5218.15	4198.4	1316.05	807.55	0	11
6782.8	6587.95	6479.05	6277.7	6139.4	5869.55	5943.7	5862.95	5576.25	4636.75	1835.6	1137.25	0	12
7051.7	6851.95	6756.6	6591.5	6454.2	6151.55	6279.3	6280.65	5963.7	5051.5	2392.9	1522.35	0	13
7308.1	7144.25	7035.35	6893.5	6742.95	6444.6	6623.85	6643.4	6340.15	5451.15	2973.05	1958.05	0	14
7554.5	7436.95	7332.25	7189.05	7038.9	6738.85	6973.8	6983.15	6701.65	5832.95	3562.2	2466	0	15
7783.75	7712.75	7611.65	7458.05	7332.95	7029.55	7310.2	7309.05	7050.5	6200.7	4162.7	3067.3	0	16
7998.7	7963.85	7847.85	7710.5	7596.1	7330.95	7635.85	7606.05	7381.6	6557.15	4788.4	3753.2	0	17
8203.5	8167.75	8052.2	7951.5	7839.05	7622	7931.5	7865.4	7681.9	6888.5	5391.15	4461.9	0	18
8377.95	8318.8	8222	8160.55	8059.6	7871.7	8170.15	8096.05	7954.15	7188.7	5923.45	5158.45	0	19
8512.75	8449.9	8370.9	8327.65	8250.5	8078.1	8366.85	8295.8	8184.55	7482.85	6386.55	5822.15	0	20
8609.25	8557.6	8496.85	8454.8	8407.55	8254.55	8519.95	8465.2	8364.6	7756	6814.8	6435.45	0.05	21
8677.25	8631.95	8595.65	8553.75	8532.65	8395.5	8617.45	8594.3	8504.3	7974.2	7212.45	6983.9	9.5	22
8720.7	8685.25	8666.9	8631.4	8626.8	8501.15	8681	8671.95	8596	8150	7569.25	7452	135.45	23
8742.15	8720.85	8711.15	8693.95	8687.85	8580.85	8722.7	8714.65	8655.35	8296.45	7881.95	7833.95	545.85	24
8752.75	8744.3	8736.5	8731.45	8725.7	8644.2	8745.8	8737.45	8695.9	8426.4	8139.05	8127.9	1311.3	25
8757.65	8757.15	8748.2	8747.8	8746.75	8693.8	8755.6	8752.85	8728.95	8533.45	8331.5	8343.3	2365.8	26
8759.85	8760	8756.15	8755.95	8756.25	8727.55	8758.5	8759.7	8750.45	8609.95	8472.05	8495.75	3621.15	27
8760	8760	8759.85	8758.75	8759.6	8747.05	8760	8760	8758.05	8666.4	8569.55	8602.1	4906.65	28
8760	8760	8760	8760	8760	8754	8760	8760	8760	8703.2	8633.55	8668.95	6061.55	29
8760	8760	8760	8760	8760	8757.25	8760	8760	8760	8726.65	8683.45	8708.55	7041.95	30
8760	8760	8760	8760	8760	8759.65	8760	8760	8760	8740.8	8717.95	8732.3	7788.85	31
8760	8760	8760	8760	8760	8760	8760	8760	8760	8747.4	8735.4	8745.55	8279.35	32
8760	8760	8760	8760	8760	8760	8760	8760	8760	8752.85	8744.95	8753.4	8568.95	33
8760	8760	8760	8760	8760	8760	8760	8760	8760	8757.45	8750.8	8757.55	8715	34
8760	8760	8760	8760	8760	8760	8760	8760	8760	8759.6	8754.1	8759.45	8756.8	35
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8756.3	8760	8760	36
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8758.8	8760	8760	37
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	38
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	39
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	40
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	41
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	42
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	43
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	44
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	45
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	46
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	47
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	48
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	49
8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	8760	50
Umeå	Sundsvall	Gävle	Karlstad	Växjö	Stockholm	Göteborg	Malmö	Halmstad	Paris	Lisboa	Los Angeles	Singapore	d/h



f/(°C/h)	Verhojansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellowknife	Fairbanks	Karesuando	Karasjok	Kiruna	Gällivare	Storlien	Haparanda	Östersund
-50	39.5	0	6.4	0	0	0	0	0	0	0	0	0	0	0
-49	36.4	0	32.4	0	0	0	0	0	0	0	0	0	0	0
-48	44.5	0	45.8	0	0	0	0	0	0	0	0	0	0	0
-47	47.5	0	46.9	0	0	0	0	0	0	0	0	0	0	0
-46	69.7	0	67.7	0	0	0	0	0	0	0	0	0	0	0
-45	71	0	67.3	0	0	0	0	0	0	0	0	0	0	0
-44	80.4	0	82.6	0	0	0	0	0	0	0	0	0	0	0
-43	73.3	0	107.8	0	0	0.1	0	0	0	0	0	0	0	0
-42	78.2	0	130.6	2	0	2.2	0	0	0	0	0	0	0	0
-41	126.3	0	133.3	8.9	0	6.9	0	0	0	0	0	0	0	0
-40	154.2	0	158.9	18.1	0	6.8	0.2	0	0	0	0	0	0	0
-39	135.6	0	162.6	16	0	13.9	6.2	0	0	0	0	0	0	0
-38	121.4	0.1	166.2	21.5	0	18.2	14.2	0	0	0	0	0	0	0
-37	170.3	3.2	135.3	39.8	0	58.4	13.2	7.3	0	0	0	0	0	0
-36	132.5	13.6	139.6	46.2	0	29.2	15.7	15.1	0.5	0	0	0	0	0
-35	109.3	32.7	139.5	58.7	0	45.2	25.1	7.8	12.2	0	0.9	0	0	0
-34	148.1	44.8	136.4	64.2	0	52.5	23.9	4.4	26.7	0	10.1	0	0	0
-33	128.4	45.9	131.1	75.7	3	72.3	26.5	8.1	9.2	0	9.6	0	0	0
-32	133.6	40	117.5	100.6	8.4	51.4	55.8	12.6	7.7	0.2	7.1	0	0	0
-31	146.4	84.5	110.6	146.9	32.8	64.9	47.2	15.2	10.6	15	6.1	0	0	0
-30	124.4	131.7	116.7	130.9	48.6	98.4	65.4	23.4	17.9	19.6	7	0	0.7	1.6
-29	137.4	156.3	106.6	154.5	28	100.5	102	24.9	29.6	13.5	24.7	0	11.4	7.2
-28	145	147.1	111.1	149.9	41.2	94.7	61	35.7	30.3	9.1	18.1	0	13.4	9.9
-27	118.1	188.2	102.6	150.8	52.3	106.4	55.5	43.3	40.7	14.5	19.4	0	10.2	7
-26	104.3	212.1	96.5	152.5	38.3	112.2	74.8	52.6	36.9	14.6	24.5	0	15.1	8.2
-25	116.7	184.1	86	164.9	59	110.7	81	63.6	53.7	15.2	30.4	0	20.8	12.9
-24	149.2	205.5	83.6	165.2	65.9	121.3	113.5	93.2	69.1	27.9	28.4	1.9	15.9	16.7
-23	139.6	242.3	89.5	166.8	61.4	132	100	81.4	89.4	41.6	45.6	13.4	13.4	6.2
-22	122.4	217.5	87.3	200.9	88.2	144.1	90.3	55.7	59.7	57.4	77.5	7.9	18.8	5.6
-21	81.2	192.9	81.9	213.4	125	150	135.7	74.7	52.8	58.3	57.8	16.6	24.8	8.3
-20	93.7	162.4	84.8	170	122	144.7	124.2	83.8	72.9	94.4	75.5	18.1	41.4	17.9
-19	98.4	267	91.8	166.2	139.4	134.5	165	72.9	93.4	109.7	112.7	13.8	56.5	32
-18	103.5	268.3	91.1	157.6	128.3	143.2	164.4	77.2	80.4	93.3	88.9	16.8	61	50.2
-17	95.7	233.1	87	145.7	126.2	161.4	159.3	88	81.3	84.7	108.8	12.6	112.3	47.5
-16	98.4	209.3	85.7	183.6	150.6	138.3	179.8	132.8	65.5	107.2	100.8	20.7	99	39
-15	84.6	189.1	82	239.1	155.2	154.8	181.3	122.4	80.6	120.6	109.9	34.6	111.2	56.9
-14	81.4	200.5	114.4	180.1	176	145.9	169.1	128.7	116.9	144.5	152.5	41.7	96.7	78.9
-13	106.7	165.3	81.6	164.5	163.3	161.8	170.9	144.7	146.5	148.5	128.9	64.9	108.2	81.9
-12	88.5	177	76.9	155.6	170.9	141.7	154.8	194.4	154.3	145.1	195.8	68.7	120	104.9
-11	80.4	223.1	64.4	164.6	203.2	138.4	148.4	221.7	158.6	215.8	192.5	127	131.5	135.7
-10	74.9	216.3	81.2	140.9	204.9	146.4	175.2	191.8	173.1	186.8	219.5	165.7	126.9	137.5
-9	88.3	185	77.3	131.1	199	168.1	177.3	219.1	183.1	241.7	211.9	174.6	149.9	180.9
-8	103.2	169.6	88	125.4	194.9	166.1	184	219.6	192.4	232.6	225.4	180.9	203.3	213.8
-7	112	149.1	87.6	129	211.3	174.4	170.2	201.5	213.3	225.5	239.1	212.4	228.5	235
-6	131	167	78.4	151.4	254.6	149.3	153.7	236.3	216.2	254.1	216.4	273.9	251.7	244.9
-5	125	199.8	93.7	152.1	270.8	193.8	138.8	221.4	217.4	297.6	243	345.3	268.8	259.4
-4	131	215.4	94.1	136.3	246.6	159.5	151.2	240.9	263.3	280.3	245.4	336.1	282.2	321.2
-3	131.4	235.8	106.1	164	265.1	138.5	155.9	260	288.7	293.7	245	343.5	261.3	291.9
-2	120.6	208.3	129.9	177.1	259.7	151.1	146.9	297.4	261.5	294	243.7	396.1	231.4	316.8
-1	141.5	224.5	121.1	167.8	285.7	170.4	163.2	268	267.8	282.6	262.5	424.1	277.3	355.8
f/(°C/h)	Verhojansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellowknife	Fairbanks	Karesuando	Karasjok	Kiruna	Gällivare	Storlien	Haparanda	Östersund

*Numerical data on degree hours, running times and temperature frequencies*

Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	f(°C/h)
0	0	0	0	0	0	0	0	0	0	0	0	0	-50
0	0	0	0	0	0	0	0	0	0	0	0	0	-49
0	0	0	0	0	0	0	0	0	0	0	0	0	-48
0	0	0	0	0	0	0	0	0	0	0	0	0	-47
0	0	0	0	0	0	0	0	0	0	0	0	0	-46
0	0	0	0	0	0	0	0	0	0	0	0	0	-45
0	0	0	0	0	0	0	0	0	0	0	0	0	-44
0	0	0	0	0	0	0	0	0	0	0	0	0	-43
0	0	0	0	0	0	0	0	0	0	0	0	0	-42
0	0	0	0	0	0	0	0	0	0	0	0	0	-41
0	0	0	0	0	0	0	0	0	0	0	0	0	-40
0	0	0	0	0	0	0	0	0	0	0	0	0	-39
0	0	0	0	0	0	0	0	0	0	0	0	0	-38
0	0	0	0	0	0	0	0	0	0	0	0	0	-37
0	0	0	0	0	0	0	0	0	0	0	0	0	-36
0	0	0	0	0	0	0	0	0	0	0	0	0	-35
0	0	0	0	0	0	0	0	0	0	0	0	0	-34
0	0	0	0	0	0	0	0	0	0	0	0	0	-33
0	0	0	0	0	0	0	0	0	0	0	0	0	-32
0	0	0	0	0	0	0	0	0	0	0	0	0	-31
0	0	0	0	0	0	0	0	0	0	0	0	0	-30
0	0	0	0	0	0	0	0	0	0	0	0	0	-29
0	0	0	0	0	0	0	0	0	0	0	0	0	-28
1.3	0	0	0	0	0	0	0	0	0	0	0	0	-27
11.7	0	0	0	0	0	0	0	0	0	0	0	0	-26
10.8	0.8	0	0	0	0	0	0	0	0	0	0	0	-25
8.3	6	0	0	0	0	0	0	0	0	0	0	0	-24
12.3	5.7	0	0	0	0	0	0	0	0	0	0	0	-23
9.6	16.8	1.7	0	0	0	0	0	0	0	0	0	0	-22
3.8	7.2	4.4	0	0	0	0	0	0	0	0	0	0	-21
6.4	11.9	7.6	0.9	0	0	0	0	0	0	0	0	0	-20
24.1	18.7	12.4	10.2	0	0.9	0	0	0	0	0	0	0	-19
32.3	28.4	12.8	15.1	0	4.8	0	0	0	0	0	0	0	-18
60.7	35.6	6.7	11.8	1.9	16.3	5.3	0	0	0	0	0	0	-17
50.7	44.4	10.4	8.7	9	11.9	7.4	0	0	0	0	0	0	-16
64.1	65	12.5	13.8	8.1	4.7	5.3	0	0	0	0	0	0	-15
81	50.5	36.3	25.1	15.6	8.3	4.9	0	6.4	0	0	0	0	-14
99.6	56	32.4	30	21.3	10.4	12.4	0	8.4	0	0	0	0	-13
107.1	88.2	25.2	26.3	25.7	12	23.2	0	3.3	0	0	0	0	-12
111.5	96.6	40.7	33.2	16.3	17.6	34.2	0	4.1	0	0	0	0	-11
154.4	148.1	49.2	46.1	29.5	47.2	19.8	0.4	13.8	0	0	0	0	-10
175.8	165	88.8	77.2	37.5	71.7	32.3	12.2	26.3	0	0	0	0	-9
143	142.8	127.6	85.3	40.1	62.7	34.3	16.6	20.8	0	0	0	0	-8
159.8	161	141.2	132.6	91.7	66.7	60.8	21.9	36	2.4	0	0	0	-7
174.4	204.6	184.8	142	136.8	97	85.8	41	47.5	8	0	0	0	-6
228.3	230.4	214	185.8	156.5	169.9	119	47.7	66.2	14.4	0	0	0	-5
264.8	256	217.9	222.9	182.6	226.7	184.1	92.2	92.4	21.7	0	0	0	-4
285.6	260.9	251.7	295.2	234.3	238	179.4	151.7	181.5	51.2	0	0	0	-3
340.2	298.5	294.4	297.1	270.9	234.8	236.5	242.3	219	59.5	0	0	0	-2
317.9	360	393.3	318.9	310.1	344.8	282.5	277.9	263.8	99.6	0	0	0	-1
Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	f(°C/h)

f/(°C/h)	Verhojansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow-knife	Fair-banks	Karesu-ando	Karasjok	Kiruna	Gällivare	Storlien	Haparanda	Östersund
0	159.3	253.5	113.9	163.7	320.3	174.3	177.6	298.9	313.1	281.3	250.6	451.7	333.8	287.2
1	159.5	287.1	118.4	160.9	432	167.1	186	273	340.9	280.8	231.5	432.9	298.4	316.3
2	166.3	307.6	130.8	156.1	401.6	178.2	180.2	287.2	339.6	303.4	255.1	425.5	289.7	321.6
3	152.9	351.3	143.3	157.3	472.4	155.6	146	343.8	346.8	309.5	290.7	400.3	325	326
4	151.3	332.2	154.1	166.3	534.6	174	169.9	269.1	331.7	306.6	289.4	407.2	311.6	338.8
5	152.9	295.7	153.6	170.5	490.3	169.9	165	257	332.5	248.1	275	379.3	289	322.7
6	139.6	250.9	168.9	170.5	435.5	180.5	181.6	261	310.4	233.7	269.5	320.9	293.9	309.5
7	143.3	196.3	166.5	163.4	426.9	185.1	195.8	262.4	247.6	264.8	317.5	310.3	242.6	299
8	157	120.2	146	163	339.2	184.8	205.4	255.1	241.3	269.1	286.6	305.3	255.4	316.3
9	165.2	81	141.1	192.2	194.5	186	210	247.4	242.2	276.5	244.6	297.3	253.4	310.5
10	168.1	40.7	160.1	193.8	81.1	171.3	215.9	237.3	235.3	259.8	247.3	244.6	229	313.5
11	153	17.4	172.4	162.5	48.9	212.2	213.4	226.6	249.7	244.7	234.5	240.8	236	347
12	156.9	13.7	150.7	159.9	2.9	200.4	216.6	208.3	234.6	201.2	218.8	241.9	209.3	305.6
13	178	4	146.9	147.2	0	223.4	228.3	177.8	231.6	188	201.8	212.5	234	260.8
14	158.8	0	156.7	137.1	0	221.4	232.7	182.8	217.1	174	192.1	175.3	259.9	230.2
15	137.7	0	152.3	141.4	0	205.1	218.3	172.9	161.4	167.4	189.8	158.8	227.1	190.9
16	151.1	0	167.8	137.7	0	201.7	210.8	148.7	128.8	138.7	171.6	126.7	224.1	161.8
17	114.3	0	169.4	116	0	202.1	179.4	111.6	85.7	116.9	156.9	92.1	216	143.5
18	98.5	0	154.8	107.5	0	157.4	173.5	78.9	78	106.8	142.9	63.7	174.2	111.4
19	98.8	0	140.1	71.4	0	136.6	154.7	72.5	65.4	91.6	83	56.5	140.4	79.5
20	85.8	0	131.5	71.4	0	114.1	132.4	57.4	50.9	68.7	70.5	41.5	113.1	61.3
21	73.5	0	127.9	53.5	0	96	129.4	38.5	44.2	44.1	50.7	39.8	80	37.8
22	70.4	0	126.2	36.3	0	64	96.8	27.6	30.3	29.4	39.5	17	68.5	41.7
23	54.8	0	112.7	42.4	0	42.7	61.6	21.3	16.3	14.6	32.4	5.4	48.7	22.6
24	44.4	0	87.1	29.3	0	32.3	49.1	1.3	5.6	0.7	15.1	1.4	26.9	12.1
25	29	0	67.3	16.6	0	20.1	34.2	0	3	0	14.4	0	8.7	4.4
26	24.9	0	68.7	6	0	12.8	24.9	0	1.8	0	2.8	0	6.2	2.3
27	14.4	0	37.3	8.1	0	10.3	17.7	0	0	0	0	0	1.5	0
28	7.7	0	36	7.5	0	5.7	10.5	0	0	0	0	0	0	0
29	7.7	0	25.5	0	0	0.3	1.5	0	0	0	0	0	0	0
30	0.5	0	26.1	0	0	0	0	0	0	0	0	0	0	0
31	0	0	8.2	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
f/(°C/h)	Verhojansk	Quannaq	Jakutsk	Inuvik	Sisimiut	Yellow-knife	Fair-banks	Karesu-ando	Karasjok	Kiruna	Gällivare	Storlien	Haparanda	Östersund

*Numerical data on degree hours, running times and temperature frequencies*

Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	f/(°C/h)
339.9	375.1	423.8	327.8	346.1	367.8	358.8	347.5	346.7	148.7	0	0	0	0
353.8	315.7	373.8	364.2	378.6	421.1	343.8	402.7	353.6	187.1	0	0	0	1
338.1	310.1	359.5	379.7	374.5	349.4	348.8	426.7	392.6	248.4	0	0	0	2
342.6	321.2	368.9	370.9	418.4	345.6	359.8	409.3	433	278.1	0	0	0	3
356.3	341.4	373.5	340.7	421.9	381	346	415	427.2	291.1	0	0	0	4
324.4	347.2	362.6	366.1	354.7	359.3	345.4	413.8	408.5	357.6	21.1	12.2	0	5
293.3	307.6	360.2	347.8	339.3	349.6	388	390.7	375.7	364.8	53.1	38.6	0	6
282.5	311.9	344.7	330.4	373.4	344.5	362.8	356.2	362.1	378.2	102.1	64.7	0	7
286.6	305.2	307	297.6	346.6	288.9	390.3	349.7	334.7	473.9	176.3	117.9	0	8
260.7	282.6	311.6	355.6	359.4	284.6	418.4	391.1	330.5	493.5	307.4	190.9	0	9
268.3	245.5	300.6	355.5	351.7	284.4	393.9	402.9	298.3	492.9	414.1	238.1	0	10
259.1	245.1	285.6	300.4	320.7	305.6	391.8	426.9	331.5	454.6	483.9	290.3	0	11
275.4	240.5	282.5	325.6	332.4	282.7	337.4	453.1	384.7	422.1	555.2	369.1	0	12
262.4	287.5	272.6	302	297.2	281.3	333.8	382.3	390.2	407.4	559.4	401.1	0	13
250.4	297.1	284.9	302	280.3	304.8	355.3	343.2	362.7	391.9	600.9	470.3	0	14
242.4	288.3	308.9	289.1	311.6	283.7	344.6	336.3	360.3	371.7	577.4	545.6	0	15
216.1	263.3	249.9	248.9	276.5	297.7	328.2	315.5	337.4	363.8	623.6	657	0	16
213.8	238.9	222.5	256	249.8	305.1	323.1	278.5	324.8	349.1	627.8	714.8	0	17
195.8	168.9	186.2	226	236.1	277	268.2	240.2	275.8	313.6	577.7	702.6	0	18
153.1	133.2	153.4	192.1	205	222.4	209.1	221.1	268.7	286.8	486.9	690.5	0	19
116.5	129	144.4	142.1	176.8	190.4	184.3	178.4	192.1	301.5	439.3	636.9	0	20
76.5	86.4	107.5	112.2	137.3	162.5	121.9	160.4	168	244.8	417.2	589.7	0.1	21
59.5	62.3	90.1	85.7	112.9	119.4	73.1	97.8	111.4	191.6	378.1	507.2	18.8	22
27.4	44.3	52.4	69.6	75.4	91.9	54	57.5	72	160	335.5	429	233.1	23
15.5	26.9	36.1	55.5	46.7	67.5	29.4	27.9	46.7	132.9	289.9	334.9	587.7	24
5.7	20	14.6	19.5	29	59.2	16.8	17.7	34.4	127	224.3	253	943.2	25
4.1	5.7	8.8	13.2	13.1	40	2.8	13.1	31.7	87.1	160.6	177.8	1165.8	26
0.3	0	7.1	3.1	5.9	27.5	3	0.6	11.3	65.9	120.5	127.1	1344.9	27
0	0	0.3	2.5	0.8	11.5	0	0	3.9	47	74.5	85.6	1226.1	28
0	0	0	0	0	2.4	0	0	0	26.6	53.5	48.1	1083.7	29
0	0	0	0	0	4.1	0	0	0	20.3	46.3	31.1	877.1	30
0	0	0	0	0	0.7	0	0	0	8	22.7	16.4	616.7	31
0	0	0	0	0	0	0	0	0	5.2	12.2	10.1	364.3	32
0	0	0	0	0	0	0	0	0	5.7	6.9	5.6	214.9	33
0	0	0	0	0	0	0	0	0	3.5	4.8	2.7	77.2	34
0	0	0	0	0	0	0	0	0	0.8	1.8	1.1	6.4	35
0	0	0	0	0	0	0	0	0	0	2.6	0	0	36
0	0	0	0	0	0	0	0	0	0	2.4	0	0	37
0	0	0	0	0	0	0	0	0	0	0	0	0	38
0	0	0	0	0	0	0	0	0	0	0	0	0	39
0	0	0	0	0	0	0	0	0	0	0	0	0	40
0	0	0	0	0	0	0	0	0	0	0	0	0	41
0	0	0	0	0	0	0	0	0	0	0	0	0	42
0	0	0	0	0	0	0	0	0	0	0	0	0	43
0	0	0	0	0	0	0	0	0	0	0	0	0	44
0	0	0	0	0	0	0	0	0	0	0	0	0	45
0	0	0	0	0	0	0	0	0	0	0	0	0	46
0	0	0	0	0	0	0	0	0	0	0	0	0	47
0	0	0	0	0	0	0	0	0	0	0	0	0	48
0	0	0	0	0	0	0	0	0	0	0	0	0	49
0	0	0	0	0	0	0	0	0	0	0	0	0	50
Umeå	Sunds-vall	Gävle	Karlstad	Växjö	Stock-holm	Göteborg	Malmö	Halm-stad	Paris	Lisboa	Los A-ngeles	Singa-pore	f/(°C/h)

Numerical data on degree hours, running times and temperature frequencies

Kiruna				Kiruna				Kiruna				Kiruna				Kiruna			
$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)
-35	0	0	0	-30	15.4	28.5	10	-25	314.3	95.5	10	-20	1232.3	315.5	50	-15	4134.1	835.5	110
-34.9	0	0	0	-29.9	18.3	29.5	10	-24.9	323.9	96.5	10	-19.9	1264.1	328	200	-14.9	4218.2	847	120
-34.8	0	0	0	-29.8	21.3	31.5	30	-24.8	333.6	97.5	10	-19.8	1297.9	346.5	170	-14.8	4303.5	859.5	130
-34.7	0	0	0	-29.7	24.6	33	0	-24.7	343.4	98.5	10	-19.7	1333.4	362	140	-14.7	4390.1	870	80
-34.6	0	0	0	-29.6	27.9	33.5	10	-24.6	353.3	100.5	30	-19.6	1370.3	374	100	-14.6	4477.5	882	160
-34.5	0	0	0	-29.5	31.3	34.5	10	-24.5	363.5	102.5	10	-19.5	1408.2	383.5	90	-14.5	4566.5	896.5	130
-34.4	0	0	0	-29.4	34.8	35.5	10	-24.4	373.8	103	0	-19.4	1447	395.5	150	-14.4	4656.8	907	80
-34.3	0	0	0	-29.3	38.4	37	20	-24.3	384.1	103.5	10	-19.3	1487.3	408	100	-14.3	4747.9	920.5	190
-34.2	0	0	0	-29.2	42.2	38.5	10	-24.2	394.5	105.5	30	-19.2	1528.6	417	80	-14.2	4840.9	936.5	130
-34.1	0	0	0	-29.1	46.1	40	20	-24.1	405.2	107.5	10	-19.1	1570.7	425	80	-14.1	4935.2	950	140
-34	0	0	0	-29	50.2	41.5	10	-24	416	110	40	-19	1613.6	434	100	-14	5030.9	965	160
-33.9	0	0	0	-28.9	54.4	44	40	-23.9	427.2	113	20	-18.9	1657.5	445.5	130	-13.9	5128.2	981.5	170
-33.8	0	0	0	-28.8	59	46.5	10	-23.8	438.6	114.5	10	-18.8	1702.7	455.5	70	-13.8	5227.2	996	120
-33.7	0	0	0	-28.7	63.7	47.5	10	-23.7	450.1	117.5	50	-18.7	1748.6	463.5	90	-13.7	5327.4	1009	140
-33.6	0	0	0	-28.6	68.5	48	0	-23.6	462.1	123	60	-18.6	1795.4	479	220	-13.6	5429	1024	160
-33.5	0	0	0	-28.5	73.3	48.5	10	-23.5	474.7	130	80	-18.5	1844.4	498	160	-13.5	5532.2	1041	170
-33.4	0	0	0	-28.4	78.2	49.5	10	-23.4	488.1	135.5	30	-18.4	1895	509	60	-13.4	5637.1	1058	170
-33.3	0	0	0	-28.3	83.2	50.5	10	-23.3	501.8	139	40	-18.3	1946.2	515	60	-13.3	5743.7	1073	140
-33.2	0	0	0	-28.2	88.3	51	0	-23.2	515.9	144	60	-18.2	1998	523	100	-13.2	5851.7	1088	150
-33.1	0	0	0	-28.1	93.4	51	0	-23.1	530.6	148.5	30	-18.1	2050.8	533	100	-13.1	5961.2	1103	150
-33	0	0	0	-28	98.5	52	20	-23	545.6	153	60	-18	2104.6	541.5	70	-13	6072.2	1119	180
-32.9	0	0	0	-27.9	103.8	53	0	-22.9	561.2	157.5	30	-17.9	2159.1	549	80	-12.9	6185	1140	230
-32.8	0	0	0	-27.8	109.1	53	0	-22.8	577.1	160.5	30	-17.8	2214.4	557.5	90	-12.8	6300.1	1156	90
-32.7	0	0	0	-27.7	114.4	54.5	30	-22.7	593.3	163.5	30	-17.7	2270.6	567.5	110	-12.7	6416.1	1166	120
-32.6	0	0	0	-27.6	120	56.5	10	-22.6	609.8	165.5	10	-17.6	2327.9	577.5	90	-12.6	6533.3	1176	80
-32.5	0	0	0	-27.5	125.7	57.5	10	-22.5	626.4	167.5	30	-17.5	2386.1	586	80	-12.5	6651.3	1188	160
-32.4	0	0	0	-27.4	131.5	58.5	10	-22.4	643.3	171.5	50	-17.4	2445.1	594	80	-12.4	6770.9	1202	110
-32.3	0	0	0	-27.3	137.4	59	0	-22.3	660.7	176	40	-17.3	2504.9	601	60	-12.3	6891.6	1212	100
-32.2	0	0	0	-27.2	143.3	60.5	30	-22.2	678.5	182.5	90	-17.2	2565.3	609	100	-12.2	7013.3	1227	190
-32.1	0	0	0	-27.1	149.5	63	20	-22.1	697.2	191.5	90	-17.1	2626.7	618	80	-12.1	7136.9	1244	150
-32	0	0	0	-27	155.9	64.5	10	-22	716.8	197.5	30	-17	2688.9	625	60	-12	7262	1258	130
-31.9	0	0	0	-26.9	162.4	65	0	-21.9	736.7	203	80	-16.9	2751.7	630	40	-11.9	7388.4	1275	210
-31.8	0	0	0	-26.8	168.9	66	20	-21.8	757.4	209	40	-16.8	2814.9	636	80	-11.8	7516.9	1289	80
-31.7	0	0	0	-26.7	175.6	68.5	30	-21.7	778.5	215	80	-16.7	2878.9	644	80	-11.7	7646.2	1300	140
-31.6	0	0	0	-26.6	182.6	70.5	10	-21.6	800.4	221.5	50	-16.6	2943.7	654	120	-11.6	7776.9	1314	130
-31.5	0	0	0	-26.5	189.7	72	20	-21.5	822.8	228	80	-16.5	3009.7	666.5	130	-11.5	7908.9	1331	220
-31.4	0	0	0	-26.4	197	74	20	-21.4	846	236	80	-16.4	3077	680	140	-11.4	8043.1	1349	140
-31.3	0	0	0	-26.3	204.5	75.5	10	-21.3	870	244	80	-16.3	3145.7	693	120	-11.3	8178.7	1364	160
-31.2	0	0.5	10	-26.2	212.1	77	20	-21.2	894.8	249.5	30	-16.2	3215.6	703	80	-11.2	8315.9	1383	220
-31.1	0.1	1	0	-26.1	219.9	78.5	10	-21.1	919.9	253	40	-16.1	3286.3	711.5	90	-11.1	8455.3	1405	220
-31	0.2	1	0	-26	227.8	80	20	-21	945.4	258	60	-16	3357.9	721	100	-11	8596.9	1431	290
-30.9	0.3	1.5	10	-25.9	235.9	81	0	-20.9	971.5	265	80	-15.9	3430.5	730.5	90	-10.9	8741.4	1463	350
-30.8	0.5	2.5	10	-25.8	244	81.5	10	-20.8	998.4	271.5	50	-15.8	3504	741	120	-10.8	8889.4	1492	230
-30.7	0.8	3.5	10	-25.7	252.2	82.5	10	-20.7	1025.8	276.5	50	-15.7	3578.7	751	80	-10.7	9039.7	1513	200
-30.6	1.2	5	20	-25.6	260.5	84	20	-20.6	1053.7	281.5	50	-15.6	3654.2	760.5	110	-10.6	9192	1534	210
-30.5	1.8	16.5	210	-25.5	269	86.5	30	-20.5	1082.1	288	80	-15.5	3730.8	774	160	-10.5	9346.4	1556	240
-30.4	4.5	27	0	-25.4	277.8	88.5	10	-20.4	1111.3	293.5	30	-15.4	3809	788.5	130	-10.4	9503.2	1576	160
-30.3	7.2	27	0	-25.3	286.7	89.5	10	-20.3	1140.8	296.5	30	-15.3	3888.5	801	120	-10.3	9661.6	1594	190
-30.2	9.9	27	0	-25.2	295.7	90.5	10	-20.2	1170.6	301	60	-15.2	3969.2	813	120	-10.2	9821.9	1612	170
-30.1	12.6	27.5	10	-25.1	304.8	93	40	-20.1	1201	308.5	90	-15.1	4051.1	824.5	110	-10.1	9983.9	1629	170

*Numerical data on degree hours, running times and temperature frequencies*

Kiruna				Kiruna				Kiruna				Kiruna				Kiruna			
$t_{ij}$ °C	Gh/(°C·h)	d/h	f/(h°°C)	$t_{ij}$ °C	Gh/(°C·h)	d/h	f/(h°°C)	$t_{ij}$ °C	Gh/(°C·h)	d/h	f/(h°°C)	$t_{ij}$ °C	Gh/(°C·h)	d/h	f/(h°°C)	$t_{ij}$ °C	Gh/(°C·h)	d/h	f/(h°°C)
-10	10147.6	1644	140	-5	21204.8	2844	360	0	39022.7	4283	260	5	64086.2	5752	230	10	95976.6	7051	250
-9.9	10312.7	1658	130	-4.9	21491	2880	350	0.1	39452.3	4314	360	5.1	64662.5	5777	280	10.1	96682.9	7077	270
-9.8	10479.1	1673	170	-4.8	21780.7	2909	230	0.2	39885.5	4350	350	5.2	65241.6	5804	250	10.2	97391.9	7101	220
-9.7	10647.2	1693	240	-4.7	22072.7	2935	290	0.3	40322.2	4374	130	5.3	65823.2	5826	190	10.3	98103.1	7125	250
-9.6	10817.7	1712	140	-4.6	22367.6	2962	260	0.4	40760.2	4394	280	5.4	66406.7	5843	150	10.4	98816.8	7149	240
-9.5	10989.6	1731	240	-4.5	22665.1	2988	250	0.5	41201	4418	200	5.5	66991.7	5861	210	10.5	99532.9	7173	230
-9.4	11163.9	1758	300	-4.4	22965.1	3018	350	0.6	41643.8	4440	230	5.6	67578.8	5888	330	10.6	100251.3	7195	210
-9.3	11341.2	1784	220	-4.3	23268.6	3046	220	0.7	42088.9	4468	330	5.7	68169.2	5919	300	10.7	100971.8	7216	220
-9.2	11520.7	1803	160	-4.2	23574.3	3071	270	0.8	42537.3	4500	310	5.8	68762.6	5944	200	10.8	101694.5	7244	330
-9.1	11701.8	1822	220	-4.1	23882.7	3098	270	0.9	42988.8	4532	330	5.9	69358	5965	210	10.9	102420.5	7277	330
-9	11885.1	1849	320	-4	24193.8	3126	300	1	43443.6	4563	290	6	69955.5	5987	240	11	103149.8	7304	220
-8.9	12071.6	1877	230	-3.9	24507.9	3156	290	1.1	43901.3	4587	190	6.1	70555.4	6008	180	11.1	103881.3	7327	230
-8.8	12260.4	1900	240	-3.8	24824.9	3192	440	1.2	44360.9	4613	330	6.2	71157.1	6031	270	11.2	104615.1	7351	250
-8.7	12451.6	1927	300	-3.7	25146.3	3225	220	1.3	44823.8	4640	220	6.3	71761.5	6057	250	11.3	105351.4	7376	250
-8.6	12645.8	1952	200	-3.6	25469.9	3248	240	1.4	45288.9	4666	300	6.4	72368.4	6078	180	11.4	106090.2	7398	200
-8.5	12842	1979	330	-3.5	25795.9	3271	210	1.5	45757	4696	290	6.5	72977.1	6100	260	11.5	106831	7419	220
-8.4	13041.5	2008	250	-3.4	26124	3293	230	1.6	46228	4728	350	6.6	73588.4	6126	260	11.6	107574	7441	210
-8.3	13243.5	2032	230	-3.3	26454.4	3317	250	1.7	46702.5	4763	350	6.7	74202.3	6150	220	11.7	108319.1	7463	230
-8.2	13447.8	2056	260	-3.2	26787.3	3344	300	1.8	47180.5	4792	240	6.8	74818.4	6172	210	11.8	109066.5	7485	210
-8.1	13654.7	2083	270	-3.1	27123.2	3379	400	1.9	47660.9	4824	400	6.9	75436.6	6201	370	11.9	109816	7506	220
-8	13864.3	2107	210	-3	27463.1	3416	330	2	48145.3	4862	360	7	76058.5	6237	360	12	110567.7	7528	210
-7.9	14076	2125	160	-2.9	27806.3	3447	290	2.1	48633.3	4890	200	7.1	76684	6264	170	12.1	111321.5	7545	130
-7.8	14289.3	2144	210	-2.8	28152.4	3474	260	2.2	49123.3	4914	270	7.2	77311.2	6290	350	12.2	112076.6	7557	120
-7.7	14504.7	2168	280	-2.7	28501.1	3500	260	2.3	49616	4946	370	7.3	77941.9	6316	180	12.3	112832.9	7575	240
-7.6	14722.9	2193	210	-2.6	28852.4	3533	390	2.4	50112.4	4975	220	7.4	78574.4	6340	290	12.4	113591.6	7599	230
-7.5	14943.2	2214	220	-2.5	29207.6	3567	290	2.5	50611	5000	270	7.5	79209.8	6368	280	12.5	114352.6	7622	230
-7.4	15165.7	2234	170	-2.4	29565.7	3598	340	2.6	51112.3	5033	390	7.6	79848	6394	240	12.6	115115.9	7643	200
-7.3	15389.9	2255	260	-2.3	29927.2	3625	200	2.7	51617.5	5064	240	7.7	80488.6	6420	270	12.7	115881.2	7662	170
-7.2	15616.7	2276	160	-2.2	30290.7	3649	270	2.8	52125.1	5092	320	7.8	81131.9	6446	250	12.8	116648.2	7678	150
-7.1	15845.1	2297	260	-2.1	30656.9	3677	300	2.9	52635.9	5127	370	7.9	81777.7	6472	280	12.9	117416.7	7693	160
-7	16076.1	2320	200	-2	31026.1	3707	300	3	53150.4	5163	360	8	82426.3	6499	250	13	118186.8	7712	220
-6.9	16309.1	2342	230	-1.9	31398.3	3737	300	3.1	53668.5	5196	290	8.1	83077.4	6526	300	13.1	118959.1	7732	180
-6.8	16544.4	2365	230	-1.8	31773.5	3771	370	3.2	54189.5	5226	310	8.2	83731.5	6554	250	13.2	119733.2	7753	240
-6.7	16782	2389	250	-1.7	32152.4	3805	310	3.3	54713.6	5253	240	8.3	84388.1	6580	270	13.3	120509.7	7775	190
-6.6	17022.1	2413	230	-1.6	32534.4	3834	270	3.4	55240.1	5282	330	8.4	85047.4	6610	340	13.4	121288.1	7792	160
-6.5	17264.5	2436	230	-1.5	32919.1	3859	240	3.5	55769.9	5311	250	8.5	85710.1	6641	270	13.5	122068.1	7808	150
-6.4	17509.2	2460	250	-1.4	33306.2	3886	290	3.6	56302.2	5344	410	8.6	86375.5	6669	300	13.6	122849.6	7825	190
-6.3	17756.4	2488	310	-1.3	33696.2	3913	250	3.7	56838.6	5376	240	8.7	87043.9	6696	230	13.7	123633	7843	170
-6.2	18006.7	2514	210	-1.2	34088.7	3943	350	3.8	57377.4	5407	370	8.8	87714.6	6720	260	13.8	124418.1	7859	160
-6.1	18259.1	2534	190	-1.1	34484.7	3972	240	3.9	57919.9	5438	260	8.9	88387.9	6743	200	13.9	125204.8	7879	240
-6	18513.4	2555	240	-1	34883.1	4000	320	4	58465	5464	250	9	89063.2	6768	300	14	125993.9	7897	120
-5.9	18770.1	2581	280	-0.9	35284.7	4027	220	4.1	59012.6	5500	470	9.1	89741.5	6799	310	14.1	126784.2	7910	140
-5.8	19029.6	2606	210	-0.8	35688.5	4051	250	4.2	59564.9	5537	270	9.2	90422.9	6834	390	14.2	127575.9	7924	130
-5.7	19291.2	2632	310	-0.7	36094.8	4076	260	4.3	60119.9	5569	380	9.3	91108.2	6865	230	14.3	128368.9	7940	200
-5.6	19555.9	2659	240	-0.6	36503.7	4107	360	4.4	60678.7	5602	280	9.4	91795.8	6889	250	14.4	129163.9	7963	260
-5.5	19823	2689	360	-0.5	36916.2	4140	300	4.5	61240.3	5629	250	9.5	92485.9	6915	270	14.5	129961.5	7985	170
-5.4	20093.7	2720	260	-0.4	37331.7	4169	280	4.6	61804.4	5655	270	9.6	93178.7	6941	250	14.6	130760.8	8002	180
-5.3	20367	2747	270	-0.3	37750	4198	300	4.7	62371.2	5680	240	9.7	93874	6965	230	14.7	131561.9	8021	200
-5.2	20643	2776	320	-0.2	38171.3	4229	310	4.8	62940.4	5705	260	9.8	94571.6	6994	360	14.8	132365	8038	130
-5.1	20922.2	2809	340	-0.1	38595.7	4257	260	4.9	63512.2	5729	220	9.9	95272.8	7025	260	14.9	133169.4	8050	120

Numerical data on degree hours, running times and temperature frequencies

Kiruna				Kiruna				Kiruna				Kiruna				Kiruna			
$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)
15	133975	8065	180	20	175928.2	8644	60	25	219578.7	8760	0	30	263378.7	8760	0	35	307178.7	8760	0
15.1	134782.4	8084	200	20.1	176792.9	8651	80	25.1	220454.7	8760	0	30.1	264254.7	8760	0	35.1	308054.7	8760	0
15.2	135591.8	8099	100	20.2	177658.4	8658	60	25.2	221330.7	8760	0	30.2	265130.7	8760	0	35.2	308930.7	8760	0
15.3	136402.2	8116	230	20.3	178524.5	8663	30	25.3	222206.7	8760	0	30.3	266006.7	8760	0	35.3	309806.7	8760	0
15.4	137214.9	8140	250	20.4	179390.9	8666	40	25.4	223082.7	8760	0	30.4	266882.7	8760	0	35.4	310682.7	8760	0
15.5	138030.1	8158	120	20.5	180257.7	8671	60	25.5	223958.7	8760	0	30.5	267758.7	8760	0	35.5	311558.7	8760	0
15.6	138846.5	8171	130	20.6	181125.1	8676	40	25.6	224834.7	8760	0	30.6	268634.7	8760	0	35.6	312434.7	8760	0
15.7	139664.2	8180	50	20.7	181992.9	8681	60	25.7	225710.7	8760	0	30.7	269510.7	8760	0	35.7	313310.7	8760	0
15.8	140482.4	8192	190	20.8	182861.3	8686	30	25.8	226586.7	8760	0	30.8	270386.7	8760	0	35.8	314186.7	8760	0
15.9	141302.5	8206	90	20.9	183730	8691	70	25.9	227462.7	8760	0	30.9	271262.7	8760	0	35.9	315062.7	8760	0
16	142123.5	8217	130	21	184599.4	8697	50	26	228338.7	8760	0	31	272138.7	8760	0	36	315938.7	8760	0
16.1	142945.8	8231	150	21.1	185469.3	8700	20	26.1	229214.7	8760	0	31.1	273014.7	8760	0	36.1	316814.7	8760	0
16.2	143769.6	8244	120	21.2	186339.4	8702	20	26.2	230090.7	8760	0	31.2	273890.7	8760	0	36.2	317690.7	8760	0
16.3	144594.6	8257	140	21.3	187209.7	8709	110	26.3	230966.7	8760	0	31.3	274766.7	8760	0	36.3	318566.7	8760	0
16.4	145421	8275	220	21.4	188081.1	8715	20	26.4	231842.7	8760	0	31.4	275642.7	8760	0	36.4	319442.7	8760	0
16.5	146249.6	8294	150	21.5	188952.7	8717	20	26.5	232718.7	8760	0	31.5	276518.7	8760	0	36.5	320318.7	8760	0
16.6	147079.7	8308	140	21.6	189824.5	8720	40	26.6	233594.7	8760	0	31.6	277394.7	8760	0	36.6	321194.7	8760	0
16.7	147911.2	8319	70	21.7	190696.7	8724	30	26.7	234470.7	8760	0	31.7	278270.7	8760	0	36.7	322070.7	8760	0
16.8	148743.4	8327	100	21.8	191569.2	8726	20	26.8	235346.7	8760	0	31.8	279146.7	8760	0	36.8	322946.7	8760	0
16.9	149576.6	8337	90	21.9	192441.9	8728	10	26.9	236222.7	8760	0	31.9	280022.7	8760	0	36.9	323822.7	8760	0
17	150410.7	8349	150	22	193314.7	8732	80	27	237098.7	8760	0	32	280898.7	8760	0	37	324698.7	8760	0
17.1	151246.3	8362	120	22.1	194188.3	8737	10	27.1	237974.7	8760	0	32.1	281774.7	8760	0	37.1	325574.7	8760	0
17.2	152083.1	8372	80	22.2	195062	8739	30	27.2	238850.7	8760	0	32.2	282650.7	8760	0	37.2	326450.7	8760	0
17.3	152920.7	8383	130	22.3	195936	8742	30	27.3	239726.7	8760	0	32.3	283526.7	8760	0	37.3	327326.7	8760	0
17.4	153759.6	8395	110	22.4	196810.3	8743	0	27.4	240602.7	8760	0	32.4	284402.7	8760	0	37.4	328202.7	8760	0
17.5	154599.6	8404	80	22.5	197684.6	8744	20	27.5	241478.7	8760	0	32.5	285278.7	8760	0	37.5	329078.7	8760	0
17.6	155440.4	8412	70	22.6	198559.1	8747	30	27.6	242354.7	8760	0	32.6	286154.7	8760	0	37.6	329954.7	8760	0
17.7	156281.9	8423	160	22.7	199433.9	8748	0	27.7	243230.7	8760	0	32.7	287030.7	8760	0	37.7	330830.7	8760	0
17.8	157125	8436	100	22.8	200308.7	8750	30	27.8	244106.7	8760	0	32.8	287906.7	8760	0	37.8	331706.7	8760	0
17.9	157969.1	8449	160	22.9	201183.8	8754	50	27.9	244982.7	8760	0	32.9	288782.7	8760	0	37.9	332582.7	8760	0
18	158814.8	8462	90	23	202059.4	8756	0	28	245858.7	8760	0	33	289658.7	8760	0	38	333458.7	8760	0
18.1	159661.4	8472	110	23.1	202935	8757	20	28.1	246734.7	8760	0	33.1	290534.7	8760	0	38.1	334334.7	8760	0
18.2	160509.1	8482	100	23.2	203810.8	8759	10	28.2	247610.7	8760	0	33.2	291410.7	8760	0	38.2	335210.7	8760	0
18.3	161357.8	8492	100	23.3	204686.7	8760	10	28.3	248486.7	8760	0	33.3	292286.7	8760	0	38.3	336086.7	8760	0
18.4	162207.5	8502	90	23.4	205562.7	8760	0	28.4	249362.7	8760	0	33.4	293162.7	8760	0	38.4	336962.7	8760	0
18.5	163058.1	8511	100	23.5	206438.7	8760	0	28.5	250238.7	8760	0	33.5	294038.7	8760	0	38.5	337838.7	8760	0
18.6	163909.7	8521	100	23.6	207314.7	8760	0	28.6	251114.7	8760	0	33.6	294914.7	8760	0	38.6	338714.7	8760	0
18.7	164762.3	8530	80	23.7	208190.7	8760	0	28.7	251990.7	8760	0	33.7	295790.7	8760	0	38.7	339590.7	8760	0
18.8	165615.7	8539	90	23.8	209066.7	8760	0	28.8	252866.7	8760	0	33.8	296666.7	8760	0	38.8	340466.7	8760	0
18.9	166470	8550	140	23.9	209942.7	8760	0	28.9	253742.7	8760	0	33.9	297542.7	8760	0	38.9	341342.7	8760	0
19	167325.7	8564	130	24	210818.7	8760	0	29	254618.7	8760	0	34	298418.7	8760	0	39	342218.7	8760	0
19.1	168182.7	8574	80	24.1	211694.7	8760	0	29.1	255494.7	8760	0	34.1	299294.7	8760	0	39.1	343094.7	8760	0
19.2	169040.5	8582	70	24.2	212570.7	8760	0	29.2	256370.7	8760	0	34.2	300170.7	8760	0	39.2	343970.7	8760	0
19.3	169899	8588	50	24.3	213446.7	8760	0	29.3	257246.7	8760	0	34.3	301046.7	8760	0	39.3	344846.7	8760	0
19.4	170758	8593	60	24.4	214322.7	8760	0	29.4	258122.7	8760	0	34.4	301922.7	8760	0	39.4	345722.7	8760	0
19.5	171617.6	8599	60	24.5	215198.7	8760	0	29.5	258998.7	8760	0	34.5	302798.7	8760	0	39.5	346598.7	8760	0
19.6	172477.8	8605	60	24.6	216074.7	8760	0	29.6	259874.7	8760	0	34.6	303674.7	8760	0	39.6	347474.7	8760	0
19.7	173338.6	8615	130	24.7	216950.7	8760	0	29.7	260750.7	8760	0	34.7	304550.7	8760	0	39.7	348350.7	8760	0
19.8	174200.7	8628	130	24.8	217826.7	8760	0	29.8	261626.7	8760	0	34.8	305426.7	8760	0	39.8	349226.7	8760	0
19.9	175064.1	8638	70	24.9	218702.7	8760	0	29.9	262502.7	8760	0	34.9	306302.7	8760	0	39.9	350102.7	8760	0

*Numerical data on degree hours, running times and temperature frequencies*

Malmö				Malmö				Malmö				Malmö				Malmö			
$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)
-10	0	0	0	-5	185.4	109	20	0	2470.8	1067	390	5	12852.3	3114	370	10	33168.7	5004	380
-9.9	0	0	0	-4.9	196.4	114.5	90	0.1	2579.4	1107	420	5.1	13165.5	3158	520	10.1	33671	5047	470
-9.8	0	0	0	-4.8	208.3	121	40	0.2	2692.2	1143	300	5.2	13483.9	3205	420	10.2	34178	5089	380
-9.7	0	0	0	-4.7	220.6	125.5	50	0.3	2808	1176	360	5.3	13806.5	3243	340	10.3	34688.8	5130	440
-9.6	0	0	0	-4.6	233.4	131	60	0.4	2927.4	1212	350	5.4	14132.5	3281	410	10.4	35204	5169	340
-9.5	0	0	0	-4.5	246.8	136.5	50	0.5	3050.3	1248	380	5.5	14462.6	3324	450	10.5	35722.6	5202	310
-9.4	0	0.5	10	-4.4	260.7	142	60	0.6	3177	1287	390	5.6	14797.2	3362	310	10.6	36244.3	5242	490
-9.3	0.1	1	0	-4.3	275.2	152	140	0.7	3307.6	1325	380	5.7	15134.9	3395	350	10.7	36770.9	5293	540
-9.2	0.2	1	0	-4.2	291.1	162	60	0.8	3442	1362	360	5.8	15476.1	3434	440	10.8	37302.9	5340	390
-9.1	0.3	1	0	-4.1	307.6	170.5	110	0.9	3580	1401	420	5.9	15821.7	3476	390	10.9	37838.8	5377	350
-9	0.4	2	20	-4	325.2	181.5	110	1	3722.2	1440	360	6	16171.2	3519	470	11	38378.2	5420	510
-8.9	0.7	4	20	-3.9	343.9	191.5	90	1.1	3868	1477	380	6.1	16525.4	3563	420	11.1	38922.7	5464	380
-8.8	1.2	6	20	-3.8	363.5	200.5	90	1.2	4017.6	1520	480	6.2	16883.8	3597	250	11.2	39471	5503	390
-8.7	1.9	9	40	-3.7	384	211	120	1.3	4172	1571	530	6.3	17244.7	3628	370	11.3	40023.2	5547	490
-8.6	3	12	20	-3.6	405.7	222	100	1.4	4331.7	1620	460	6.4	17609.3	3671	500	11.4	40580.3	5590	370
-8.5	4.3	13.5	10	-3.5	428.4	232.5	110	1.5	4496	1663	390	6.5	17978.9	3712	310	11.5	41141.1	5633	490
-8.4	5.7	15	20	-3.4	452.2	242	80	1.6	4664.2	1700	350	6.6	18351.6	3749	430	11.6	41706.8	5680	450
-8.3	7.3	17	20	-3.3	476.8	251	100	1.7	4835.9	1736	380	6.7	18728.6	3786	310	11.7	42277	5724	430
-8.2	9.1	18	0	-3.2	502.4	262	120	1.8	5011.4	1775	400	6.8	19108.7	3823	440	11.8	42851.5	5768	450
-8.1	10.9	19.5	30	-3.1	529.2	274	120	1.9	5190.9	1825	590	6.9	19493.2	3861	310	11.9	43430.5	5816	510
-8	13	21.5	10	-3	557.2	290.5	210	2	5376.3	1876	440	7	19880.8	3897	420	12	44014.6	5864	460
-7.9	15.2	22.5	10	-2.9	587.3	309	160	2.1	5566.1	1920	430	7.1	20272.6	3929	220	12.1	44603.3	5914	530
-7.8	17.5	24	20	-2.8	619	322.5	110	2.2	5760.2	1960	370	7.2	20666.6	3957	340	12.2	45197.3	5963	460
-7.7	20	25.5	10	-2.7	651.8	337	180	2.3	5958	1998	400	7.3	21064	3990	310	12.3	45795.9	6011	500
-7.6	22.6	27.5	30	-2.6	686.4	355	180	2.4	6159.8	2041	450	7.4	21464.5	4024	380	12.4	46399.5	6055	370
-7.5	25.5	29.5	10	-2.5	722.8	377	260	2.5	6366.1	2081	360	7.5	21868.8	4062	380	12.5	47006.8	6097	470
-7.4	28.5	31	20	-2.4	761.8	401	220	2.6	6576	2123	480	7.6	22276.9	4102	420	12.6	47618.8	6140	400
-7.3	31.7	32.5	10	-2.3	803	424.5	250	2.7	6790.7	2168	410	7.7	22689.2	4139	310	12.7	48234.8	6174	270
-7.2	35	34	20	-2.2	846.7	449.5	250	2.8	7009.5	2204	310	7.8	23104.6	4169	300	12.8	48853.5	6209	440
-7.1	38.5	36	20	-2.1	892.9	471	180	2.9	7231.4	2238	380	7.9	23523	4210	520	12.9	49476.6	6253	440
-7	42.2	38	20	-2	940.9	494	280	3	7457.1	2278	420	8	23946.6	4251	290	13	50104.1	6288	250
-6.9	46.1	41	40	-1.9	991.7	522.5	290	3.1	7687	2326	530	8.1	24373.1	4280	290	13.1	50734.1	6326	520
-6.8	50.4	44	20	-1.8	1045.4	550	260	3.2	7922.2	2374	440	8.2	24802.5	4308	270	13.2	51369.3	6370	360
-6.7	54.9	46.5	30	-1.7	1101.7	574.5	230	3.3	8161.8	2416	390	8.3	25234.6	4337	310	13.3	52008.1	6406	360
-6.6	59.7	48.5	10	-1.6	1160.3	599	260	3.4	8405.3	2460	490	8.4	25669.8	4372	400	13.4	52650.5	6444	390
-6.5	64.6	49.5	10	-1.5	1221.5	624.5	250	3.5	8653.7	2502	360	8.5	26109	4407	300	13.5	53296.8	6480	330
-6.4	69.6	52	40	-1.4	1285.2	653.5	330	3.6	8905.7	2538	360	8.6	26551.2	4446	480	13.6	53946.4	6510	280
-6.3	75	55.5	30	-1.3	1352.2	680	200	3.7	9161.3	2573	340	8.7	26998.2	4488	350	13.7	54598.8	6542	360
-6.2	80.7	58.5	30	-1.2	1421.2	703	260	3.8	9420.3	2602	240	8.8	27448.7	4526	410	13.8	55254.8	6577	330
-6.1	86.7	63	60	-1.1	1492.8	728.5	250	3.9	9681.7	2635	410	8.9	27903.3	4567	420	13.9	55914.1	6606	250
-6	93.3	70	80	-1	1566.9	757	320	4	9947.2	2676	420	9	28362.1	4609	420	14	56575.9	6638	400
-5.9	100.7	77	60	-0.9	1644.2	783.5	210	4.1	10216.9	2719	440	9.1	28825.1	4650	390	14.1	57241.7	6676	350
-5.8	108.7	82.5	50	-0.8	1723.6	809	300	4.2	10491	2768	540	9.2	29292	4689	400	14.2	57911	6709	310
-5.7	117.2	87	40	-0.7	1806	837	260	4.3	10770.5	2818	450	9.3	29762.9	4730	420	14.3	58583.4	6742	360
-5.6	126.1	90.5	30	-0.6	1891	868	360	4.4	11054.5	2870	600	9.4	30238	4771	390	14.4	59259.4	6782	440
-5.5	135.3	93	20	-0.5	1979.6	899.5	270	4.5	11344.5	2921	410	9.5	30717	4806	320	14.5	59939.8	6819	300
-5.4	144.7	95	20	-0.4	2070.9	932.5	390	4.6	11638.6	2959	360	9.6	31199.2	4841	370	14.6	60623.2	6852	360
-5.3	154.3	98	40	-0.3	2166.1	968.5	330	4.7	11936.3	2994	340	9.7	31685.1	4885	510	14.7	61310.2	6889	380
-5.2	164.3	101.5	30	-0.2	2264.6	1000	300	4.8	12237.4	3033	430	9.8	32176.1	4926	310	14.8	62001	6922	280
-5.1	174.6	105.5	50	-0.1	2366.1	1031	320	4.9	12542.8	3075	410	9.9	32670.2	4963	440	14.9	62694.6	6950	270



Numerical data on degree hours, running times and temperature frequencies

Malmö				Malmö				Malmö				Malmö				Malmö			
$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)	$t_j$ /°C	Gh/(°C·h)	d/h	f/(h/°C)
15	63390.9	6983	390	20	101946.4	8304	160	25	144949.3	8739	30	30	188735	8760	0	35	232535	8760	0
15.1	64091.1	7025	450	20.1	102777.6	8323	220	25.1	145823.3	8740	0	30.1	189611	8760	0	35.1	233411	8760	0
15.2	64795.8	7063	310	20.2	103611	8339	100	25.2	146697.3	8741	20	30.2	190487	8760	0	35.2	234287	8760	0
15.3	65503.6	7089	220	20.3	104445.4	8352	150	25.3	147571.5	8744	30	30.3	191363	8760	0	35.3	235163	8760	0
15.4	66213.6	7118	360	20.4	105281.3	8367	150	25.4	148446	8745	0	30.4	192239	8760	0	35.4	236039	8760	0
15.5	66927.2	7151	290	20.5	106118.7	8382	160	25.5	149320.5	8747	30	30.5	193115	8760	0	35.5	236915	8760	0
15.6	67643.7	7182	330	20.6	106957.7	8399	180	25.6	150195.3	8748	0	30.6	193991	8760	0	35.6	237791	8760	0
15.7	68363.5	7210	240	20.7	107798.5	8418	200	25.7	151070.1	8749	10	30.7	194867	8760	0	35.7	238667	8760	0
15.8	69085.7	7242	400	20.8	108641.3	8437	170	25.8	151945	8750	20	30.8	195743	8760	0	35.8	239543	8760	0
15.9	69811.9	7283	410	20.9	109485.8	8451	110	25.9	152820.1	8753	40	30.9	196619	8760	0	35.9	240419	8760	0
16	70542.2	7316	250	21	110331.4	8462	120	26	153695.6	8756	10	31	197495	8760	0	36	241295	8760	0
16.1	71275	7342	280	21.1	111178.2	8474	110	26.1	154571.2	8757	20	31.1	198371	8760	0	36.1	242171	8760	0
16.2	72010.6	7369	250	21.2	112026.1	8492	250	26.2	155447	8759	20	31.2	199247	8760	0	36.2	243047	8760	0
16.3	72748.7	7398	340	21.3	112876.5	8514	190	26.3	156323	8760	0	31.3	200123	8760	0	36.3	243923	8760	0
16.4	73490.2	7435	390	21.4	113728.8	8535	240	26.4	157199	8760	0	31.4	200999	8760	0	36.4	244799	8760	0
16.5	74235.6	7470	320	21.5	114583.5	8554	130	26.5	158075	8760	0	31.5	201875	8760	0	36.5	245675	8760	0
16.6	74984.2	7502	320	21.6	115439.5	8570	200	26.6	158951	8760	0	31.6	202751	8760	0	36.6	246551	8760	0
16.7	75736	7533	290	21.7	116297.5	8586	110	26.7	159827	8760	0	31.7	203627	8760	0	36.7	247427	8760	0
16.8	76490.7	7564	330	21.8	117156.6	8595	70	26.8	160703	8760	0	31.8	204503	8760	0	36.8	248303	8760	0
16.9	77248.7	7592	230	21.9	118016.4	8601	60	26.9	161579	8760	0	31.9	205379	8760	0	36.9	249179	8760	0
17	78009	7613	190	22	118876.8	8608	70	27	162455	8760	0	32	206255	8760	0	37	250055	8760	0
17.1	78771.2	7637	290	22.1	119737.9	8614	50	27.1	163331	8760	0	32.1	207131	8760	0	37.1	250931	8760	0
17.2	79536.3	7664	250	22.2	120599.5	8621	90	27.2	164207	8760	0	32.2	208007	8760	0	37.2	251807	8760	0
17.3	80303.9	7690	280	22.3	121462	8629	80	27.3	165083	8760	0	32.3	208883	8760	0	37.3	252683	8760	0
17.4	81074.3	7718	280	22.4	122325.3	8637	80	27.4	165959	8760	0	32.4	209759	8760	0	37.4	253559	8760	0
17.5	81847.5	7747	300	22.5	123189.4	8644	50	27.5	166835	8760	0	32.5	210635	8760	0	37.5	254435	8760	0
17.6	82623.7	7772	200	22.6	124054	8651	100	27.6	167711	8760	0	32.6	211511	8760	0	37.6	255311	8760	0
17.7	83401.9	7797	290	22.7	124919.6	8658	30	27.7	168587	8760	0	32.7	212387	8760	0	37.7	256187	8760	0
17.8	84183	7826	290	22.8	125785.5	8664	100	27.8	169463	8760	0	32.8	213263	8760	0	37.8	257063	8760	0
17.9	84967	7857	330	22.9	126652.4	8673	70	27.9	170339	8760	0	32.9	214139	8760	0	37.9	257939	8760	0
18	85754.3	7886	250	23	127520	8680	70	28	171215	8760	0	33	215015	8760	0	38	258815	8760	0
18.1	86544.1	7908	200	23.1	128388.3	8685	30	28.1	172091	8760	0	33.1	215891	8760	0	38.1	259691	8760	0
18.2	87335.9	7928	190	23.2	129256.9	8689	50	28.2	172967	8760	0	33.2	216767	8760	0	38.2	260567	8760	0
18.3	88129.6	7944	130	23.3	130126	8694	60	28.3	173843	8760	0	33.3	217643	8760	0	38.3	261443	8760	0
18.4	88924.6	7956	120	23.4	130995.7	8700	50	28.4	174719	8760	0	33.4	218519	8760	0	38.4	262319	8760	0
18.5	89720.8	7974	230	23.5	131865.9	8703	20	28.5	175595	8760	0	33.5	219395	8760	0	38.5	263195	8760	0
18.6	90519.3	8001	310	23.6	132736.3	8706	30	28.6	176471	8760	0	33.6	220271	8760	0	38.6	264071	8760	0
18.7	91320.9	8028	240	23.7	133607	8708	20	28.7	177347	8760	0	33.7	221147	8760	0	38.7	264947	8760	0
18.8	92124.9	8052	230	23.8	134477.9	8711	30	28.8	178223	8760	0	33.8	222023	8760	0	38.8	265823	8760	0
18.9	92931.2	8075	230	23.9	135349.1	8714	40	28.9	179099	8760	0	33.9	222899	8760	0	38.9	266699	8760	0
19	93739.8	8099	260	24	136220.7	8718	30	29	179975	8760	0	34	223775	8760	0	39	267575	8760	0
19.1	94551	8124	230	24.1	137092.6	8721	30	29.1	180851	8760	0	34.1	224651	8760	0	39.1	268451	8760	0
19.2	95364.5	8146	220	24.2	137964.8	8723	10	29.2	181727	8760	0	34.2	225527	8760	0	39.2	269327	8760	0
19.3	96180.2	8168	210	24.3	138837.1	8724	20	29.3	182603	8760	0	34.3	226403	8760	0	39.3	270203	8760	0
19.4	96998	8189	210	24.4	139709.6	8726	10	29.4	183479	8760	0	34.4	227279	8760	0	39.4	271079	8760	0
19.5	97817.9	8210	220	24.5	140582.2	8728	40	29.5	184355	8760	0	34.5	228155	8760	0	39.5	271955	8760	0
19.6	98640	8229	160	24.6	141455.2	8732	40	29.6	185231	8760	0	34.6	229031	8760	0	39.6	272831	8760	0
19.7	99463.7	8247	200	24.7	142328.6	8735	10	29.7	186107	8760	0	34.7	229907	8760	0	39.7	273707	8760	0
19.8	100289.4	8266	170	24.8	143202.1	8735	0	29.8	186983	8760	0	34.8	230783	8760	0	39.8	274583	8760	0
19.9	101116.8	8285	220	24.9	144075.6	8736	20	29.9	187859	8760	0	34.9	231659	8760	0	39.9	275459	8760	0