

Scenario — PV

GEMINI-60-house-with-garage Krems 48.40000, 15.98900

Name	Slope °	Azimuth °	Wp	Wall d/h m	Face	Bifacial	Wp counted
Roof East	22	-90	19800	—	front	—	yes
Roof West	22	90	19800	—	front	—	yes
Terrace railing south	90	0	4620	5 / 4	front	—	yes
Terrace railing north	90	180	4620	5 / 4	front	—	yes
Garage roof	1	0	10740	—	front	—	yes
Garage side wall south	90	0	3475	5 / 4	front	—	yes
Garage side wall north	90	180	3475	5 / 4	front	—	yes
Garage door side west	90	90	700	5 / 4	front	—	yes
Garage back side east	90	-90	2540	5 / 4	front	—	yes
Total counted			69770				
Deselected							
Garden fence east	90.0	-90.0	6000.0	5 / 4			no
Garden fence east face2	90.0	90.0	6000.0	5 / 4			no

Database PVGIS-SARAH3 2005–2023 loss 14 % azimuth 0 = south, 90 = west, –90 = east.

Peak hour 2009-06-13 10:10 UTC 41312 W 0.592 W/Wp of 69770 Wp.

Database gaps dropped: 10 days with 0 yield and solar noon above 10°. 2008-01-23, 2008-03-01, 2008-03-06, 2008-05-17, 2008-05-18, 2009-04-18, 2009-04-19, 2009-08-15, 2009-08-16, 2016-10-16.

Feed-in is allowed every hour except 09:00–15:00 winter time. At 15:00 winter time export only the kWh that would not fit in the next 72 h during 09:00–15:00 or in an hour whose PV already fills the grid.

Scenario — house, heat pump, battery
GEMINI-60-house-with-garage Krems 48.40000, 15.98900

Chapter	Parameter	Value
Building	Design out / in / heat	-10.0 °C / 20.0 °C / 1600.0 W
	Heat on / cool on / ground	22.0 °C / 25.0 °C / 10.0 °C
	Curve / flow min / max	0.4 / 25.0 °C / 55.0 °C
	Thermal mass of the house	25.0 kWh/K
	Household only	4.0 kWh/day
DHW	Litres at 40 °C / tank	200.0 L tank 42.0 °C 8-18 h
	Water out of the pipe Q1-Q4	8 °C 10 °C 12 °C 10 °C
Heat pump	Source	air and ground
	COP –10/0/10 @ 35 °C	2.4 3.4 4.5
	COP –10/0/10 @ 50 °C	1.9 2.6 3.3
	kW –10/0/10 @ 35 °C	4 5 6
	kW –10/0/10 @ 50 °C	3.5 4.5 5
Battery	kWh / C-rate / SOC min-max-start	176.8 kWh C 0.5 5 / 95 / 50 %
	Nameplate	—
	Charge / discharge η	95 % / 90 %
Grid	Inverter / grid connection	34.0 kW / 17.0 kW
	Import cap Jan-Jun kW	Jan 2 Feb 2 Mar 2 Apr 2 May 2 Jun 2
	Import cap Jul-Dec kW	Jul 2 Aug 2 Sep 2 Oct 2 Nov 2 Dec 2
Cars	Lunch DC / night AC	0.0 kWh @ 30.0 kW night 10.0 kWh @ 11.0 kW

Clock is winter time UTC+1. Emergency import is an hour above the monthly kW cap.

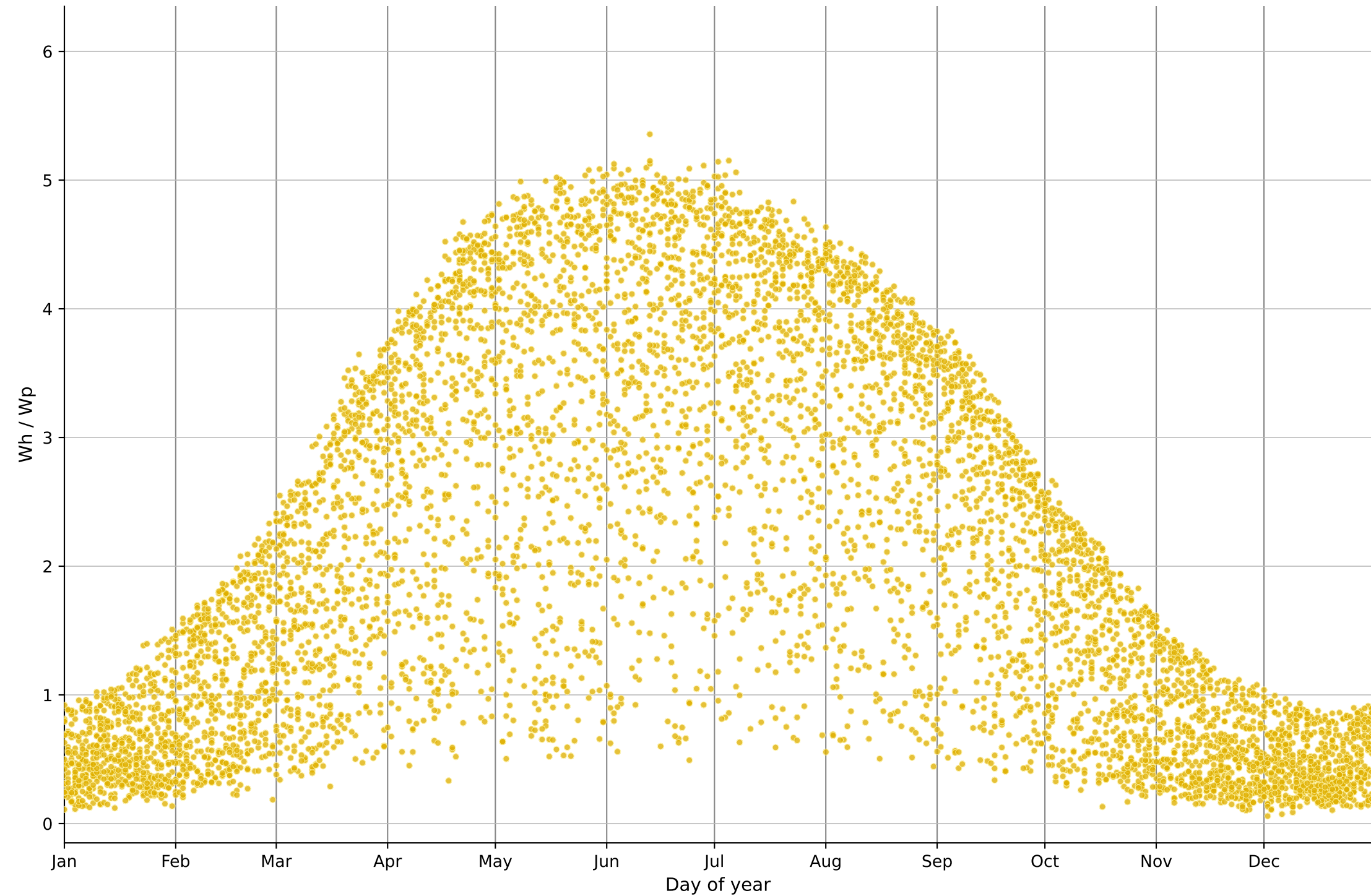
Records 1-10 — contribution of each PV
Krems 48.40000, 15.98900

PV	2009-06-13 10:10	2014-05-14 11:10	2012-05-18 11:10	2009-06-13 11:10	2012-05-18 10:10	2023-05-01 11:10	2005-04-22 11:10	2015-04-29 11:10	2015-04-29 10:10	2005-05-20 11:10
Roof East	15276	13694	13733	14042	14898	13462	13328	13396	14763	13664
Roof West	13247	14576	14582	14709	13001	14365	14166	14264	12613	14484
Terrace railing south	2033	2401	2346	2080	2298	2641	2865	2691	2646	2305
Terrace railing north	210	226	246	209	261	157	174	165	176	173
Garage roof	8267	8204	8201	8326	8080	8108	8007	8044	7971	8146
Garage side wall south	1529	1806	1765	1565	1728	1987	2155	2024	1990	1734
Garage side wall north	158	170	185	157	197	118	131	124	132	130
Garage door side west	32	98	101	88	40	86	86	87	27	90
Garage back side east	559	124	135	115	562	86	96	91	551	95
Watt at record	41312	41297	41294	41292	41065	41010	41007	40883	40869	40821
Percent of installed peak	59.2	59.2	59.2	59.2	58.9	58.8	58.8	58.6	58.6	58.5

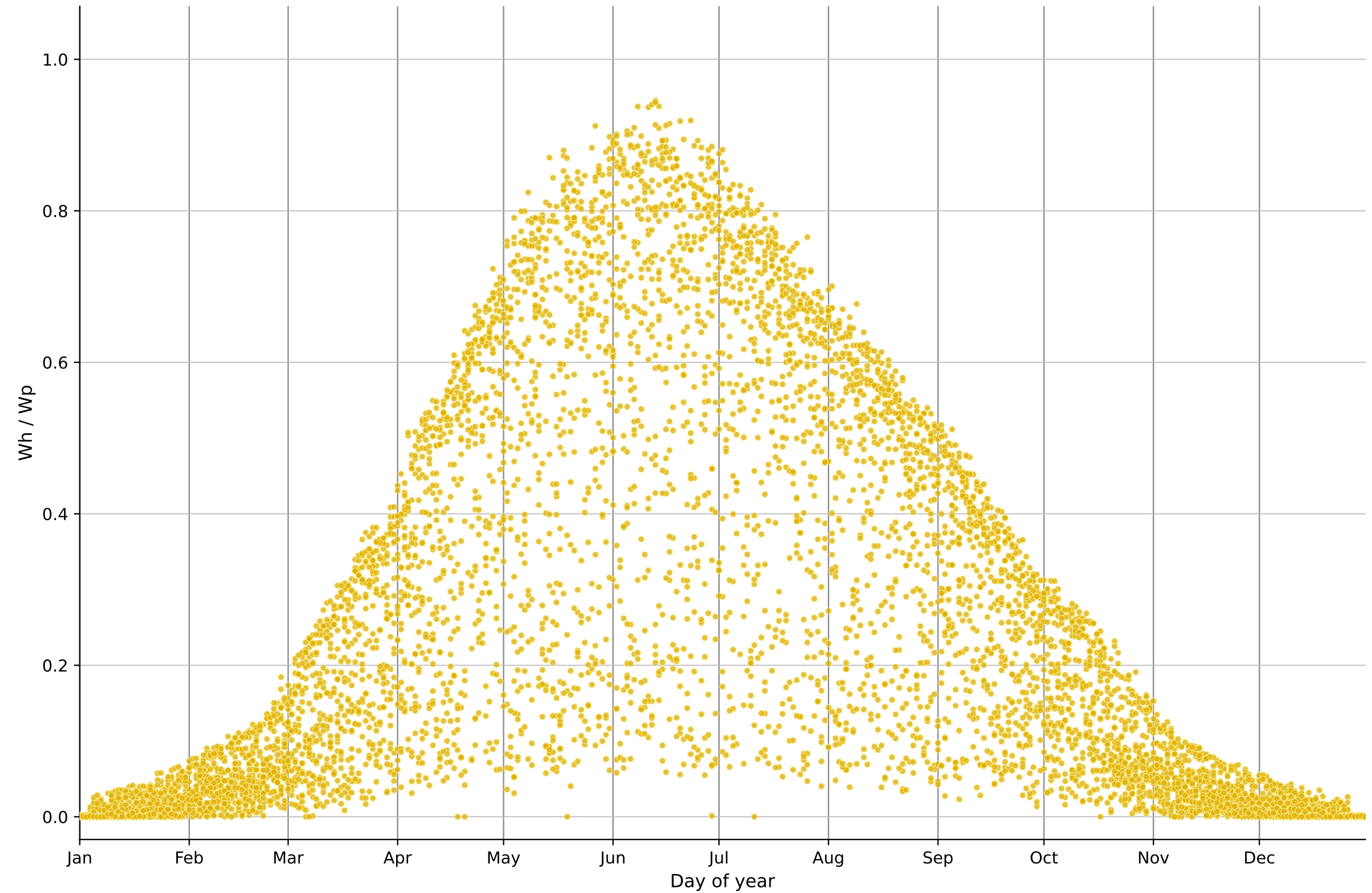
Hours at or above a share of the record
Krems 48.40000, 15.98900

Of the record	Hours	Watts
98 %	20	40486 W
96 %	88	39659 W
94 %	264	38833 W
92 %	529	38007 W
90 %	1088	37181 W

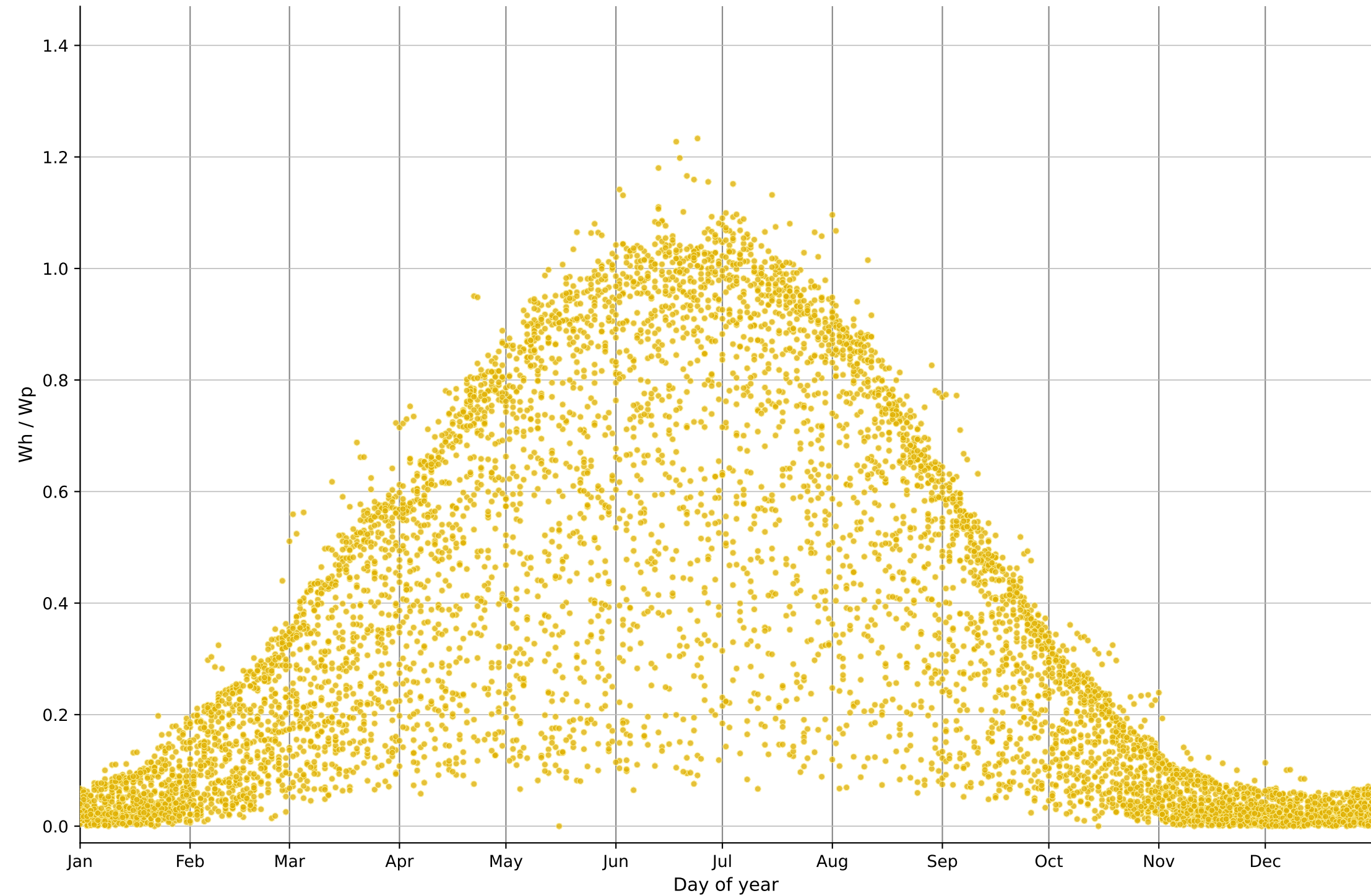
Yield distribution for each day — W_h / W_p of all PV together
Krems 48.40000, 15.98900



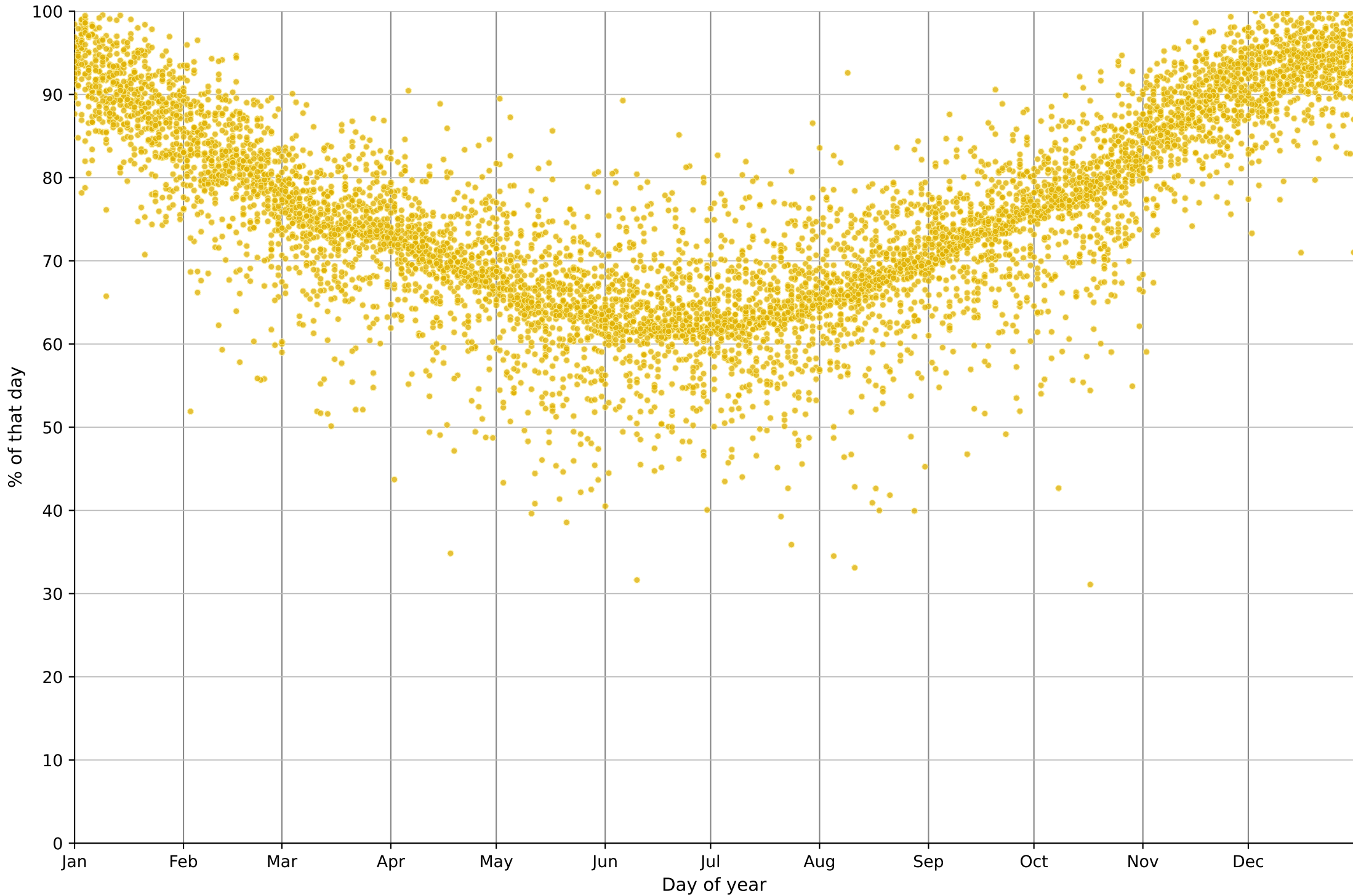
Yield distribution for each day — Wh / Wp of all PV together — 00:00-09:00
Krems 48.40000, 15.98900



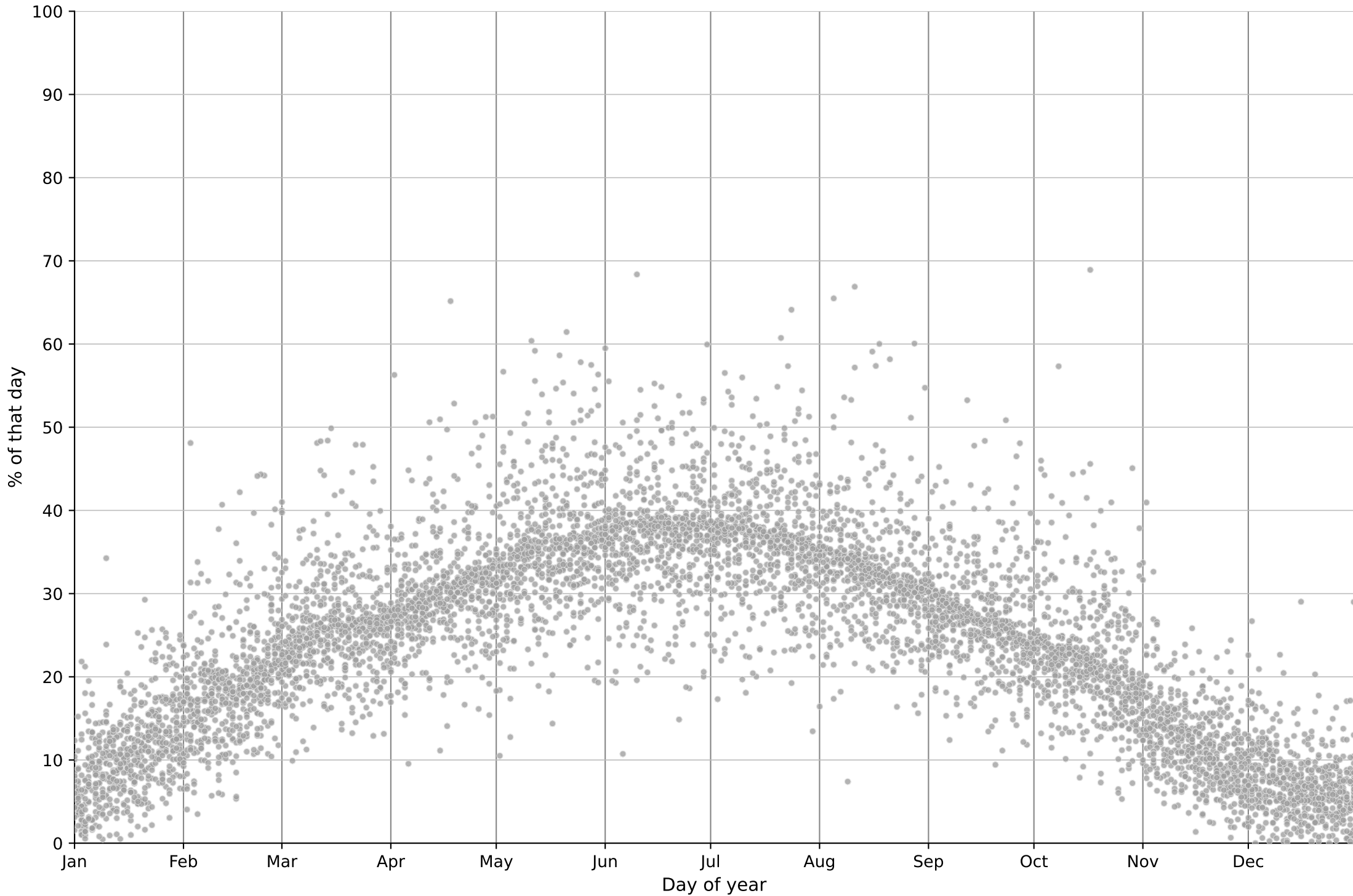
Yield distribution for each day — Wh / Wp of all PV together — 15:00-23:59
Krems 48.40000, 15.98900



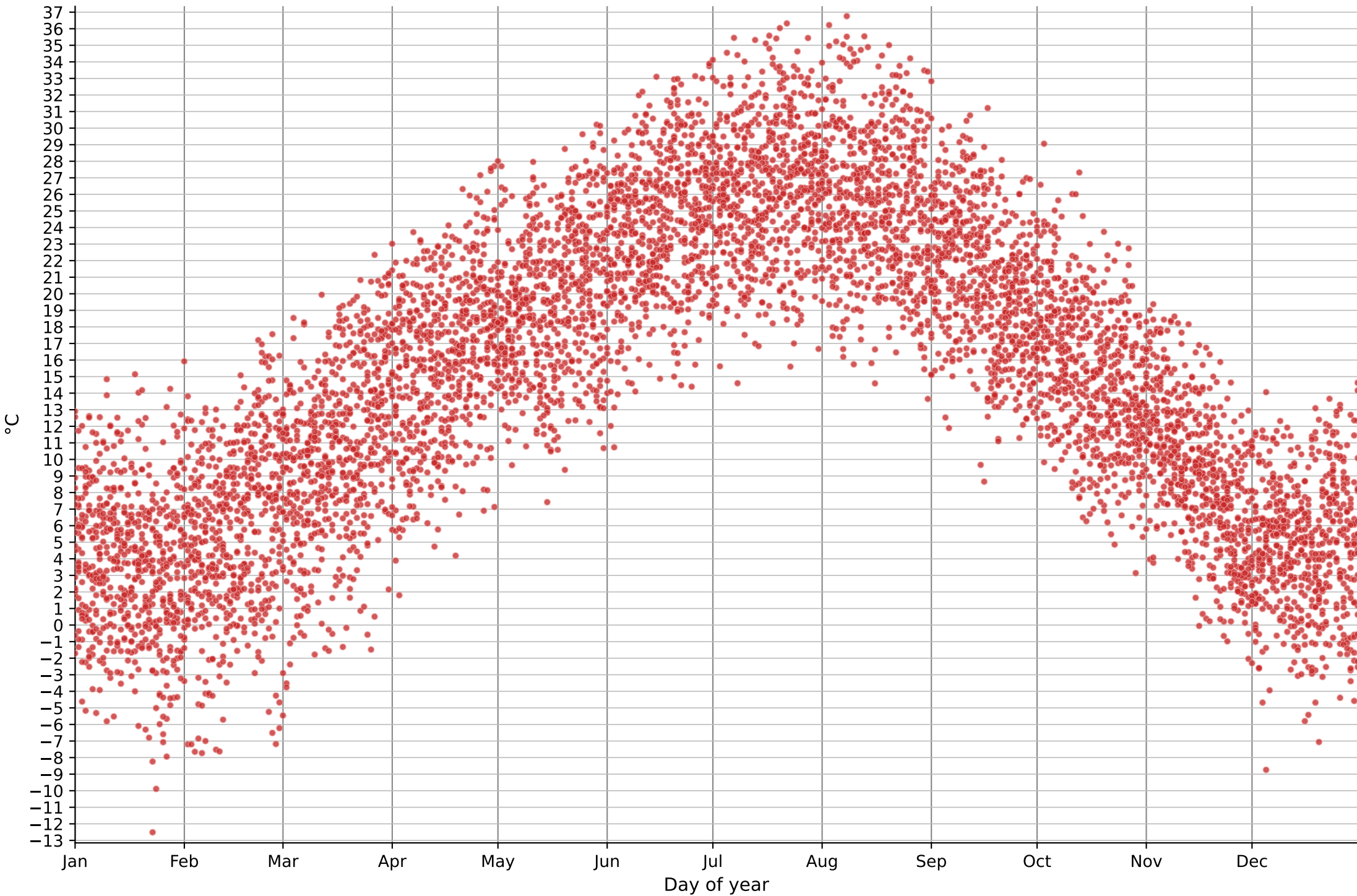
Share of the day's yield in 09:00-15:00 winter time
Krems 48.40000, 15.98900



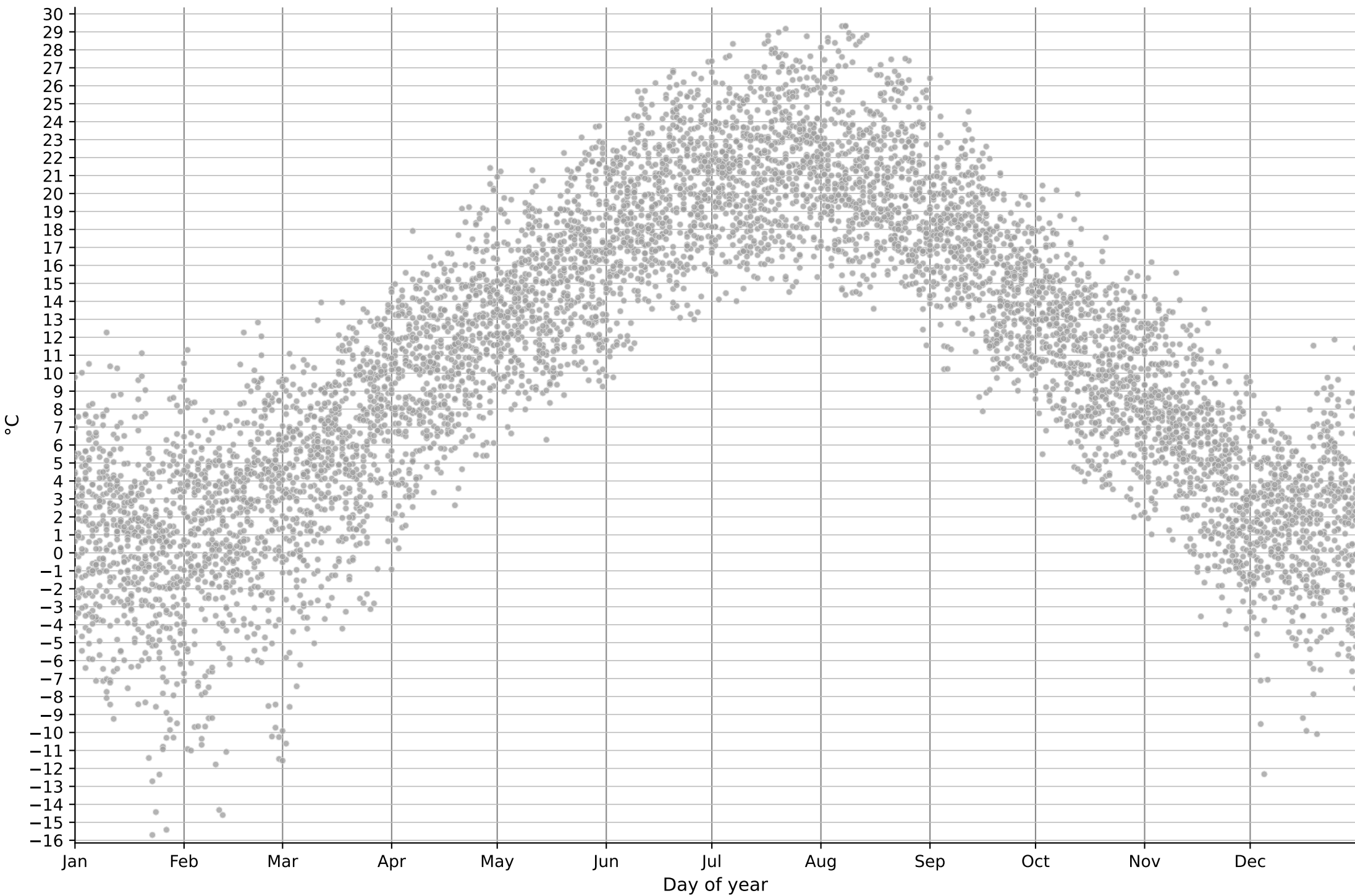
Share of the day's yield outside 09:00-15:00 winter time
Krems 48.40000, 15.98900



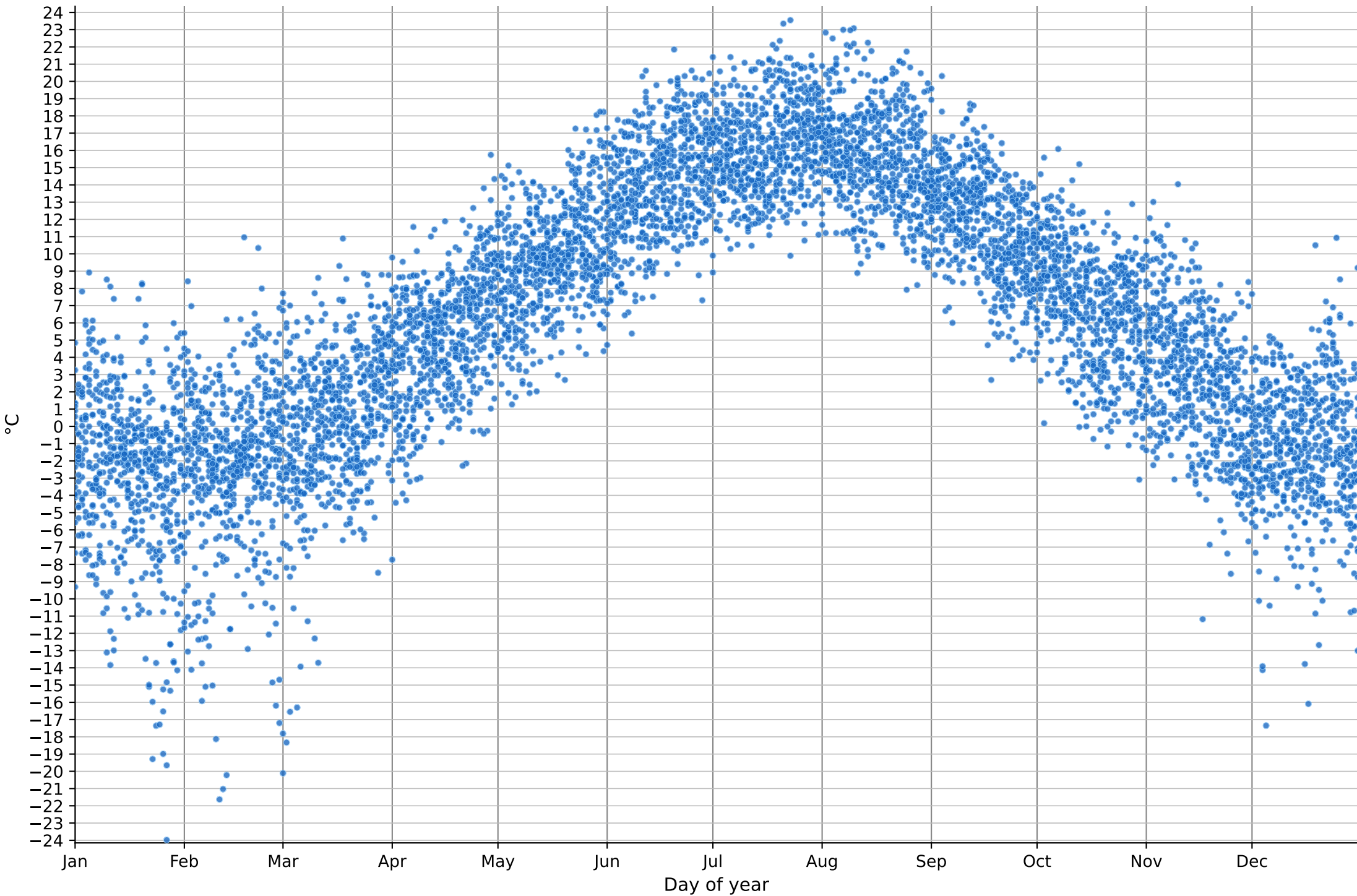
Highest temperature of each day
Krems 48.40000, 15.98900



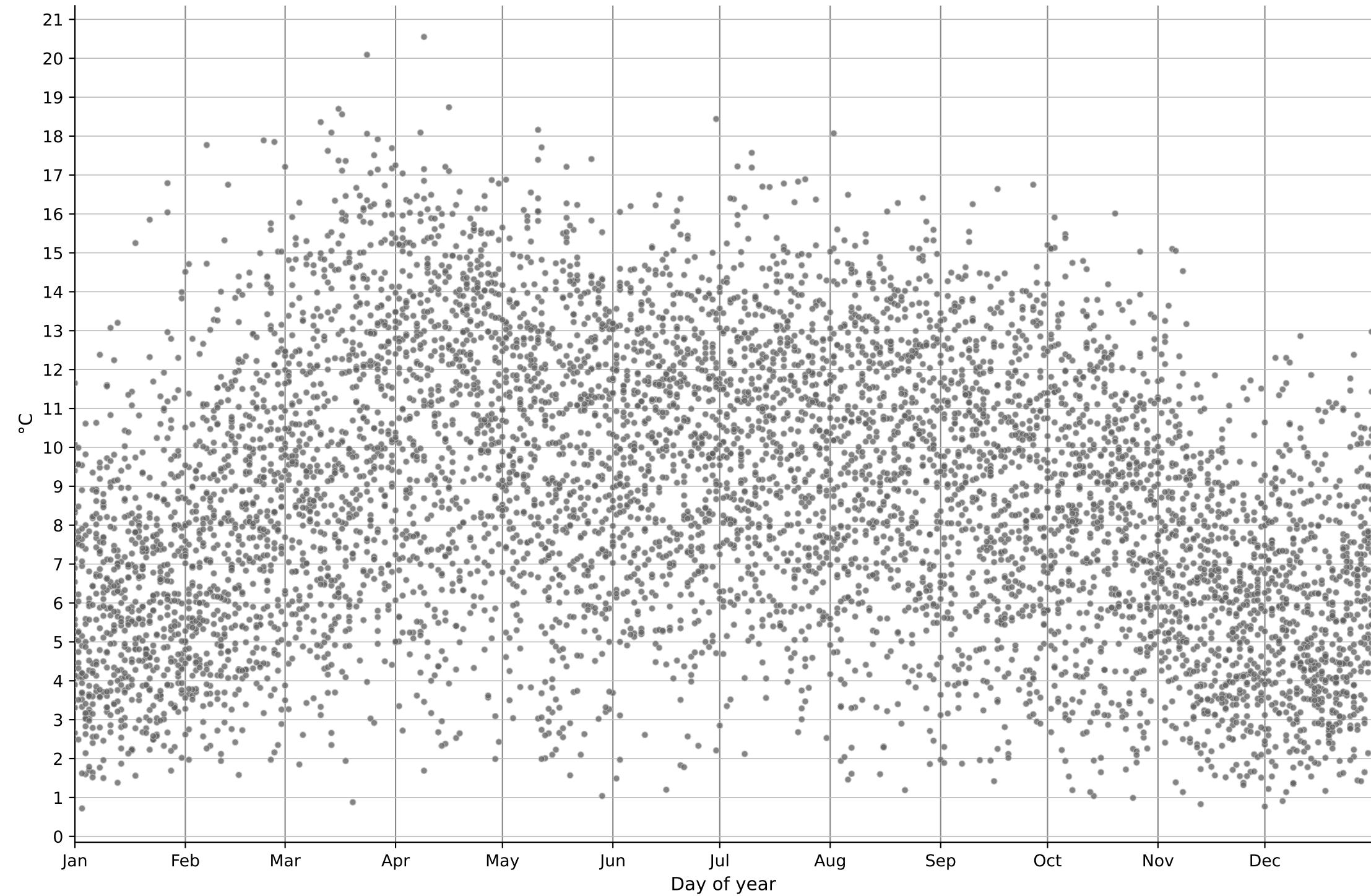
Average temperature of each day
Krems 48.40000, 15.98900



Lowest temperature of each day
Krems 48.40000, 15.98900



Difference between highest and lowest temperature of each day
Krems 48.40000, 15.98900



Monthly and yearly specific yield (kWh/kWp = Wh/Wp)
Krems 48.40000, 15.98900

Month / year		Roof East 22°/-90° 19800 Wp	Roof West 22°/90° 19800 Wp	Terrace railing south 90°/0° 4620 Wp	Terrace railing north 90°/180° 4620 Wp	Garage roof 1°/0° 10740 Wp	Garage side wall south 90°/0° 3475 Wp	All together
January	Maximum	34.76	31.00	6.36	6.36	32.52	6.36	25.19
	average	23.30	22.82	5.10	5.10	23.28	5.10	18.16
	minimum	16.03	14.79	4.12	4.12	15.51	4.12	12.37
February	Maximum	51.50	49.70	9.27	9.27	52.36	9.27	39.21
	average	39.42	40.11	8.09	8.09	40.89	8.09	31.24
	minimum	26.06	25.32	6.60	6.60	25.83	6.60	20.74
March	Maximum	95.01	98.27	38.70	15.68	100.59	38.70	77.08
	average	75.24	75.54	32.09	14.15	77.96	32.09	61.00
	minimum	60.09	58.90	23.43	11.77	62.94	23.43	49.51
April	Maximum	135.99	131.44	85.63	21.45	138.40	85.63	110.22
	average	107.33	107.24	68.93	19.54	111.90	68.93	89.95
	minimum	88.68	88.06	54.31	16.64	91.94	54.31	74.38
May	Maximum	146.88	142.79	79.28	26.89	151.63	79.28	119.66
	average	121.71	121.24	67.42	24.86	126.85	67.42	101.11
	minimum	82.64	83.17	46.38	22.47	86.31	46.38	69.81
June	Maximum	157.51	157.60	73.70	29.43	164.80	73.70	128.78
	average	130.82	131.91	63.44	27.04	137.42	63.44	108.57
	minimum	106.52	109.29	53.08	23.33	112.45	53.08	89.82
July	Maximum	155.70	156.32	78.58	28.94	163.75	78.58	128.37
	average	132.07	130.79	67.46	26.39	137.68	67.46	108.73
	minimum	101.28	101.24	51.65	23.94	105.77	51.65	84.24
August	Maximum	131.17	128.43	80.17	22.09	135.40	80.17	107.99
	average	113.60	114.08	71.13	20.34	118.83	71.13	95.24
	minimum	93.80	95.68	58.41	18.50	97.98	58.41	79.65
September	Maximum	101.90	103.80	59.58	17.00	107.18	59.58	84.41
	average	83.77	84.17	48.34	14.45	87.23	48.34	69.35
	minimum	68.29	69.13	37.77	12.37	73.58	37.77	58.62
October	Maximum	64.48	73.20	10.85	10.84	68.16	10.85	51.26
	average	50.76	53.37	9.65	9.64	53.64	9.65	40.58
	minimum	36.17	37.58	8.34	8.32	37.85	8.34	29.23
November	Maximum	31.29	31.30	6.20	6.20	31.86	6.20	24.45
	average	24.99	25.77	5.53	5.53	26.12	5.53	20.01
	minimum	20.24	22.13	4.91	4.91	22.32	4.91	17.44
December	Maximum	22.40	22.82	4.68	4.68	22.61	4.68	17.45
	average	18.74	18.74	4.03	4.03	18.85	4.03	14.71
	minimum	14.92	14.62	2.88	2.88	15.03	2.88	11.70
All years	Maximum	972.0	968.4	477.2	185.8	1011.6	477.2	793.9
	average	921.8	925.8	451.2	179.2	960.6	451.2	758.7
	minimum	851.2	849.8	414.2	173.3	883.4	414.2	699.9

Highest combined yield hour: 2009-06-13 10:10 UTC 41311.7 W (0.592 W/Wp) of 69770 Wp installed. Use this hour to size battery charge power.

Monthly and yearly specific yield (kWh/kWp = Wh/Wp)
Krems 48.40000, 15.98900

Month / year		Garage side wall north 90°/180° 3475 Wp	Garage door side west 90°/90° 700 Wp	Garage back side east 90°/-90° 2540 Wp	All together
January	Maximum	6.36	6.99	7.92	25.19
	average	5.10	5.69	6.74	18.16
	minimum	4.12	4.55	4.99	12.37
February	Maximum	9.27	12.53	12.15	39.21
	average	8.09	11.19	10.60	31.24
	minimum	6.60	8.56	8.37	20.74
March	Maximum	15.68	19.43	20.15	77.08
	average	14.15	17.64	18.45	61.00
	minimum	11.77	15.92	15.70	49.51
April	Maximum	21.45	36.10	37.30	110.22
	average	19.54	32.81	34.03	89.95
	minimum	16.64	28.62	30.03	74.38
May	Maximum	26.89	48.63	45.84	119.66
	average	24.86	43.78	41.11	101.11
	minimum	22.47	33.13	31.68	69.81
June	Maximum	29.43	52.19	59.83	128.78
	average	27.04	45.81	52.09	108.57
	minimum	23.33	39.13	44.69	89.82
July	Maximum	28.94	52.86	49.16	128.37
	average	26.39	45.49	43.80	108.73
	minimum	23.94	38.29	34.80	84.24
August	Maximum	22.09	40.40	41.15	107.99
	average	20.34	36.61	37.35	95.24
	minimum	18.50	31.12	33.79	79.65
September	Maximum	17.00	23.87	22.65	84.41
	average	14.45	21.36	21.09	69.35
	minimum	12.37	19.14	19.25	58.62
October	Maximum	10.84	12.42	12.77	51.26
	average	9.64	11.33	11.38	40.58
	minimum	8.32	9.83	9.83	29.23
November	Maximum	6.20	7.50	7.47	24.45
	average	5.53	6.61	6.58	20.01
	minimum	4.91	5.99	5.90	17.44
December	Maximum	4.68	5.26	5.81	17.45
	average	4.03	4.73	5.23	14.71
	minimum	2.88	3.56	3.91	11.70
All years	Maximum	185.8	290.9	302.7	793.9
	average	179.2	283.0	288.5	758.7
	minimum	173.3	265.8	274.2	699.9

Highest combined yield hour: 2009-06-13 10:10 UTC 41311.7 W (0.592 W/Wp) of 69770 Wp installed. Use this hour to size battery charge power.

Monthly and yearly total yield (kWh)
Krems 48.40000, 15.98900

Month / year		Roof East 22°/-90° 19800 Wp	Roof West 22°/90° 19800 Wp	Terrace railing south 90°/0° 4620 Wp	Terrace railing north 90°/180° 4620 Wp	Garage roof 1°/0° 10740 Wp	Garage side wall south 90°/0° 3475 Wp	All together
January	Maximum	688.3	613.8	29.4	29.4	349.2	22.1	1757.3
	average	461.3	451.7	23.6	23.6	250.1	17.7	1266.8
	minimum	317.4	292.8	19.0	19.0	166.6	14.3	862.8
February	Maximum	1019.6	984.1	42.8	42.8	562.4	32.2	2735.5
	average	780.5	794.2	37.4	37.4	439.1	28.1	2179.5
	minimum	516.0	501.3	30.5	30.5	277.4	22.9	1446.9
March	Maximum	1881.2	1945.7	178.8	72.4	1080.4	134.5	5378.0
	average	1489.8	1495.7	148.3	65.4	837.3	111.5	4256.3
	minimum	1189.7	1166.2	108.2	54.4	675.9	81.4	3454.5
April	Maximum	2692.5	2602.5	395.6	99.1	1486.4	297.6	7689.9
	average	2125.2	2123.4	318.5	90.3	1201.8	239.5	6276.0
	minimum	1755.9	1743.6	250.9	76.9	987.5	188.7	5189.2
May	Maximum	2908.2	2827.2	366.3	124.2	1628.5	275.5	8348.4
	average	2409.8	2400.5	311.5	114.9	1362.3	234.3	7054.8
	minimum	1636.2	1646.8	214.3	103.8	1070.9	161.2	4870.9
June	Maximum	3118.7	3120.4	340.5	135.9	1770.0	256.1	8984.7
	average	2590.3	2611.8	293.1	124.9	1475.9	220.5	7574.8
	minimum	2109.2	2163.9	245.2	107.8	1207.7	184.4	6267.0
July	Maximum	3082.8	3095.0	363.0	133.7	1758.7	273.1	8956.3
	average	2615.1	2589.6	311.6	121.9	1478.6	234.4	7586.1
	minimum	2005.4	2004.6	238.6	110.6	1136.0	179.5	5877.4
August	Maximum	2597.3	2542.9	370.4	102.0	1454.2	278.6	7534.8
	average	2249.2	2258.7	328.6	94.0	1276.3	247.2	6645.2
	minimum	1857.2	1894.4	269.9	85.5	1052.3	203.0	5557.3
September	Maximum	2017.7	2055.3	275.2	78.5	1151.1	207.0	5889.0
	average	1658.7	1666.5	223.3	66.8	936.8	168.0	4838.9
	minimum	1352.1	1368.8	174.5	57.1	790.2	131.3	4089.7
October	Maximum	1276.7	1449.4	50.1	50.1	732.1	37.7	3576.5
	average	1005.1	1056.7	44.6	44.5	576.1	33.6	2830.9
	minimum	716.2	744.1	38.5	38.4	406.5	29.0	2039.5
November	Maximum	619.6	619.8	28.6	28.6	342.2	21.5	1706.2
	average	494.8	510.2	25.5	25.5	280.5	19.2	1396.2
	minimum	400.8	438.2	22.7	22.7	239.7	17.1	1216.8
December	Maximum	443.5	451.8	21.6	21.6	242.8	16.3	1217.8
	average	371.0	371.0	18.6	18.6	202.4	14.0	1026.3
	minimum	295.4	289.5	13.3	13.3	161.4	10.0	816.5
All years	Maximum	19245	19174	2205	858	10864	1658	55394
	average	18251	18330	2085	828	10317	1568	52932
	minimum	16854	16827	1914	800	9488	1439	48832

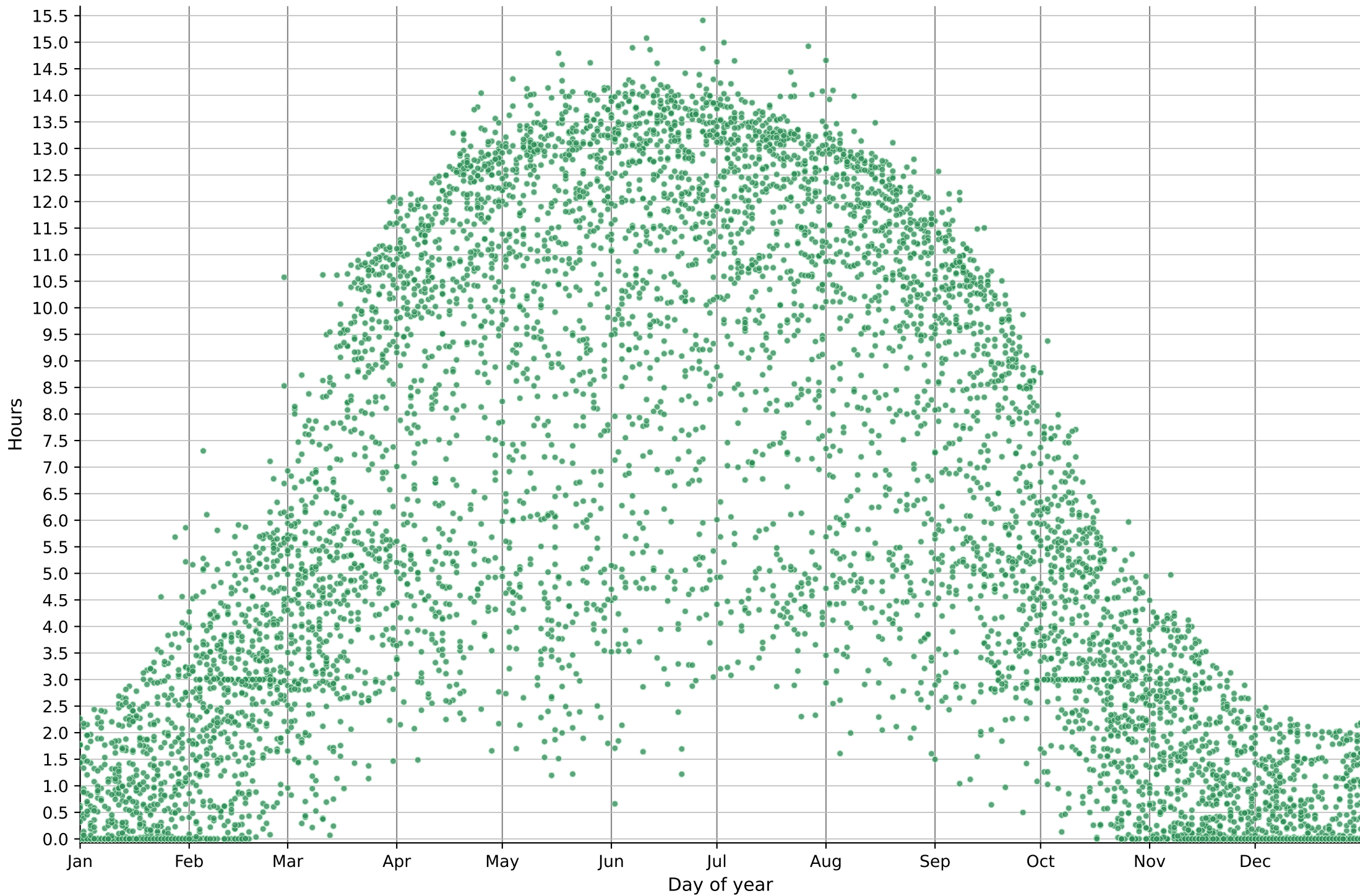
Highest combined yield hour: 2009-06-13 10:10 UTC 41311.7 W (0.592 W/Wp) of 69770 Wp installed. Use this hour to size battery charge power.

Monthly and yearly total yield (kWh)
Krems 48.40000, 15.98900

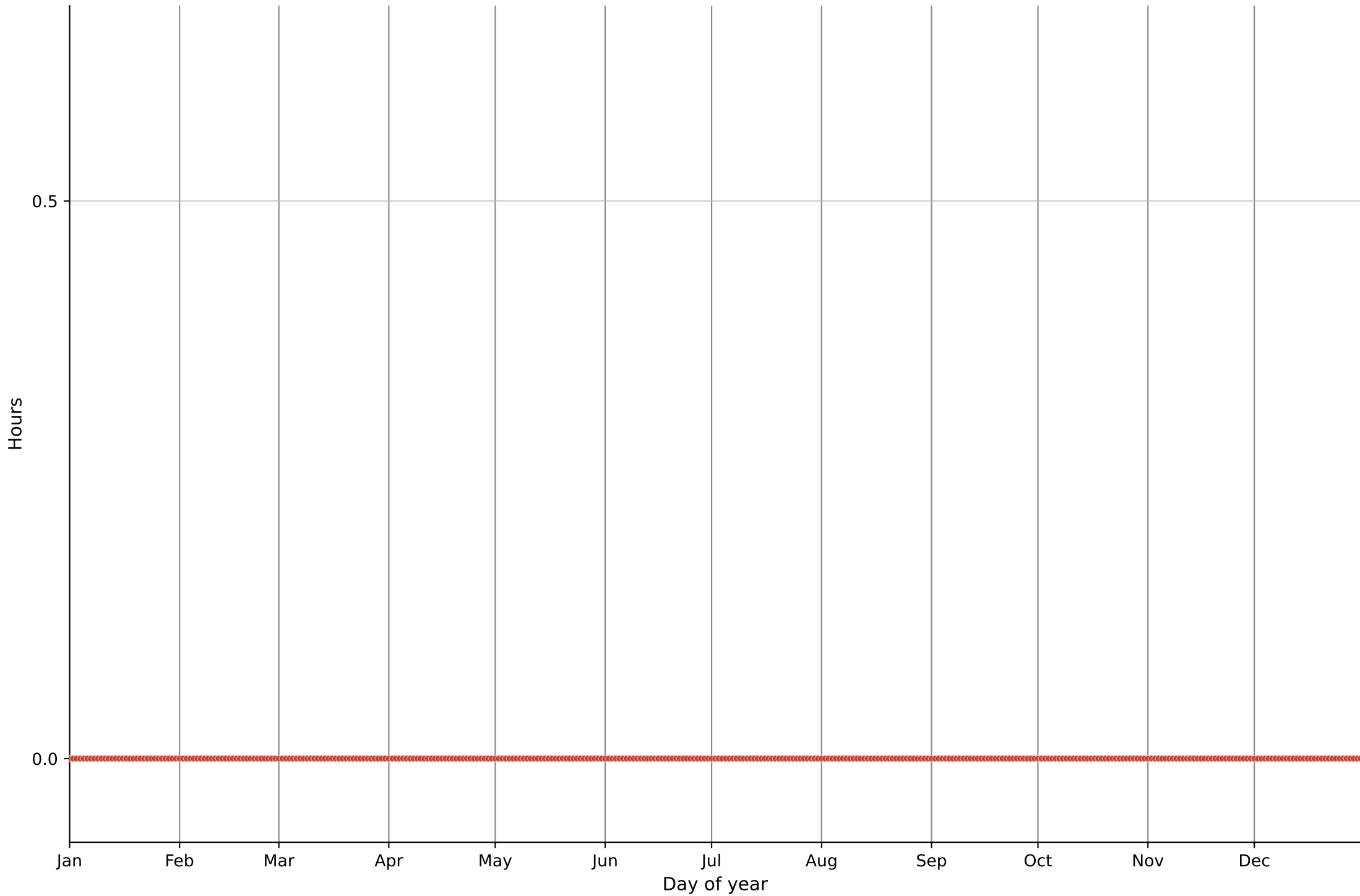
Month / year		Garage side wall north 90°/180° 3475 Wp	Garage door side west 90°/90° 700 Wp	Garage back side east 90°/-90° 2540 Wp	All together
January	Maximum	22.1	4.9	20.1	1757.3
	average	17.7	4.0	17.1	1266.8
	minimum	14.3	3.2	12.7	862.8
February	Maximum	32.2	8.8	30.9	2735.5
	average	28.1	7.8	26.9	2179.5
	minimum	22.9	6.0	21.2	1446.9
March	Maximum	54.5	13.6	51.2	5378.0
	average	49.2	12.3	46.9	4256.3
	minimum	40.9	11.1	39.9	3454.5
April	Maximum	74.5	25.3	94.7	7689.9
	average	67.9	23.0	86.4	6276.0
	minimum	57.8	20.0	76.3	5189.2
May	Maximum	93.4	34.0	116.4	8348.4
	average	86.4	30.6	104.4	7054.8
	minimum	78.1	23.2	80.5	4870.9
June	Maximum	102.3	36.5	152.0	8984.7
	average	93.9	32.1	132.3	7574.8
	minimum	81.1	27.4	113.5	6267.0
July	Maximum	100.6	37.0	124.9	8956.3
	average	91.7	31.8	111.2	7586.1
	minimum	83.2	26.8	88.4	5877.4
August	Maximum	76.7	28.3	104.5	7534.8
	average	70.7	25.6	94.9	6645.2
	minimum	64.3	21.8	85.8	5557.3
September	Maximum	59.1	16.7	57.5	5889.0
	average	50.2	15.0	53.6	4838.9
	minimum	43.0	13.4	48.9	4089.7
October	Maximum	37.7	8.7	32.4	3576.5
	average	33.5	7.9	28.9	2830.9
	minimum	28.9	6.9	25.0	2039.5
November	Maximum	21.5	5.3	19.0	1706.2
	average	19.2	4.6	16.7	1396.2
	minimum	17.1	4.2	15.0	1216.8
December	Maximum	16.3	3.7	14.8	1217.8
	average	14.0	3.3	13.3	1026.3
	minimum	10.0	2.5	9.9	816.5
All years	Maximum	646	204	769	55394
	average	623	198	733	52932
	minimum	602	186	697	48832

Highest combined yield hour: 2009-06-13 10:10 UTC 41311.7 W (0.592 W/Wp) of 69770 Wp installed. Use this hour to size battery charge power.

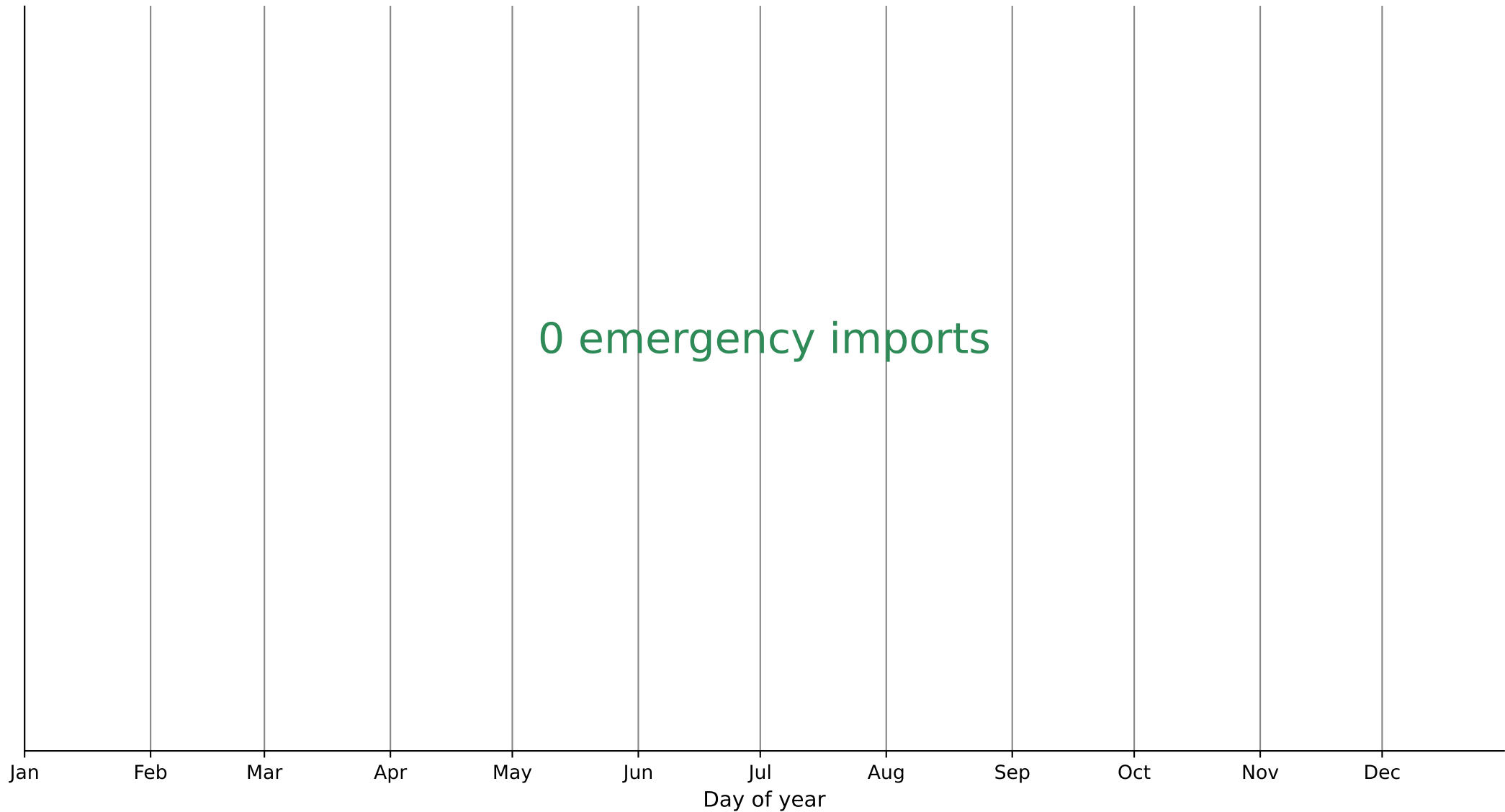
Export hours per day (kWh / grid kW)
Krems 48.40000, 15.98900



Import hours per day (kWh / grid kW)
Krems 48.40000, 15.98900



Emergency import hours: 0 days with an emergency: 0
Krems 48.40000, 15.98900



Emergency = this hour's grid import is above the month's max import kW. 2 kW means up to 48 kWh in 24 hours. More than 2 kW in an hour is the higher grid fee. Import inside that cap is not an emergency. Preferred cheap hours are 00:00-06:00 and 09:00-15:00 winter time.

Energy
Krems 48.40000, 15.98900

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export to grid													
month Maximum	790	1890	3990	5595	5876	6440	6541	5578	4472	2484	928	476	38842
month average	489	1350	3069	4586	5063	5467	5534	4936	3650	1856	672	264	36938
month minimum	112	730	2379	3764	3492	4555	4247	4174	3013	1228	493	64	33489
day Maximum	99.6	179.8	205.3	238.7	251.5	262.0	254.9	249.2	213.6	159.4	84.5	42.0	262.0
day average	15.8	48.2	99.3	153.4	163.9	182.2	178.5	159.8	121.7	60.0	22.4	8.5	101.3
day minimum	0.0	0.0	1.2	25.3	20.3	11.2	39.2	27.3	8.5	0.0	0.0	0.0	0.0
Import from grid													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	0	0	0	0	0	0	0	0	0	0	0	0	0
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total energy used for house													
month Maximum	738	671	668	590	564	514	501	511	524	614	642	718	7056
month average	683	610	634	562	539	492	493	496	503	579	612	668	6872
month minimum	648	579	597	502	504	478	486	462	478	541	592	641	6768
day Maximum	27.0	40.8	25.7	25.5	23.9	22.6	20.4	21.4	24.7	25.1	25.7	25.8	40.8
day average	22.1	21.8	20.5	18.8	17.4	16.4	15.9	16.0	16.8	18.7	20.4	21.6	18.9
day minimum	15.9	15.9	15.7	15.5	15.3	15.3	15.2	15.2	15.2	15.4	15.6	15.8	15.2

Month rows: kWh in that month. Day rows: best / average / worst day.
Total energy used for house = household + car + heating + cooling + DHW + direct electric.
PV not exported and not marked wasted is still in the battery, or could not leave because the grid was already full. It is not house use.

Export by price
Krems 48.40000, 15.98900

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Export total													
month Maximum	790	1890	3990	5595	5876	6440	6541	5578	4472	2484	928	476	38842
month average	489	1350	3069	4586	5063	5467	5534	4936	3650	1856	672	264	36938
month minimum	112	730	2379	3764	3492	4555	4247	4174	3013	1228	493	64	33489
day Maximum	99.6	179.8	205.3	238.7	251.5	262.0	254.9	249.2	213.6	159.4	84.5	42.0	262.0
day average	15.8	48.2	99.3	153.4	163.9	182.2	178.5	159.8	121.7	60.0	22.4	8.5	101.3
day minimum	0.0	0.0	1.2	25.3	20.3	11.2	39.2	27.3	8.5	0.0	0.0	0.0	0.0
Export high price													
month Maximum	267	1559	2335	2043	1958	1855	1991	2089	2177	2051	220	0	16962
month average	38	1050	1967	1921	1814	1740	1845	1951	2035	1397	50	0	15808
month minimum	0	301	1501	1747	1592	1582	1695	1742	1647	789	0	0	14190
day Maximum	77.5	142.4	100.1	98.8	95.7	94.4	94.2	95.2	98.2	95.9	62.9	0.0	142.4
day average	1.2	37.5	63.7	64.3	58.7	58.0	59.5	63.1	67.8	45.1	1.7	0.0	43.4
day minimum	0.0	0.0	0.0	2.4	0.8	2.4	29.9	0.8	0.0	0.0	0.0	0.0	0.0
Export medium price													
month Maximum	114	156	1331	2548	2813	3399	3474	2596	1722	385	96	57	15455
month average	72	116	810	1862	2275	2637	2634	2114	1191	241	68	30	14050
month minimum	18	63	438	1319	1305	1979	1695	1642	779	117	45	7	12335
day Maximum	13.1	38.1	86.0	116.0	125.7	130.7	130.7	116.7	93.5	56.4	16.0	7.6	130.7
day average	2.3	4.1	26.2	62.3	73.6	87.9	85.0	68.4	39.7	7.8	2.3	1.0	38.5
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Export low price													
month Maximum	563	377	430	1164	1325	1483	1366	1094	598	596	736	419	7541
month average	379	184	293	803	975	1090	1055	871	424	218	554	233	7079
month minimum	43	58	159	576	595	815	651	570	284	53	402	57	5616
day Maximum	58.2	63.8	62.5	68.0	85.0	94.3	84.1	69.4	58.5	62.9	65.6	38.2	94.3
day average	12.2	6.6	9.5	26.9	31.6	36.3	34.0	28.2	14.1	7.1	18.5	7.5	19.4
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Winter time. High 06:00–09:00 and 17:00–20:00, sold first. Low 09:00–15:00, sold last. Medium is the rest.
The demand run is the hourly load table. At 15:00 the export run uses it. If the room is already nearer the centre than that table, cooling or heating is lower and more can be exported.

Heat pump
Krems 48.40000, 15.98900

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Heating													
month Maximum	246	210	177	119	81	47	23	36	60	127	169	229	1350
month average	191	162	145	95	60	29	16	20	41	95	140	180	1173
month minimum	156	132	119	67	37	14	7	7	19	59	120	153	1064
day Maximum	11.1	11.1	9.8	9.8	8.3	7.2	5.1	6.1	9.1	9.3	9.9	10.0	11.1
day average	6.2	5.8	4.7	3.2	1.9	1.0	0.5	0.6	1.4	3.1	4.7	5.8	3.2
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cooling													
month Maximum	0.00	0.00	0.00	0.00	0.00	4.15	15.07	18.65	0.88	0.00	0.00	0.00	35.23
month average	0.00	0.00	0.00	0.00	0.00	1.26	4.29	3.58	0.11	0.00	0.00	0.00	9.25
month minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.59
day Maximum	0.00	0.00	0.00	0.00	0.00	1.27	2.48	1.86	0.88	0.00	0.00	0.00	2.48
day average	0.00	0.00	0.00	0.00	0.00	0.04	0.14	0.12	0.00	0.00	0.00	0.00	0.03
day minimum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DHW													
month Maximum	59	55	58	51	49	44	41	42	44	53	53	55	592
month average	58	53	57	48	47	42	39	40	41	51	52	55	583
month minimum	57	52	54	43	43	40	39	37	38	48	51	55	573
day Maximum	1.9	3.8	1.9	1.8	1.8	1.8	1.5	1.6	1.7	1.8	1.8	1.8	3.8
day average	1.9	1.9	1.8	1.6	1.5	1.4	1.3	1.3	1.4	1.6	1.7	1.8	1.6
day minimum	1.7	1.7	1.6	1.3	1.3	1.3	1.2	1.2	1.2	1.3	1.5	1.7	1.2
Direct electric													
month Maximum	0	0	0	0	0	0	0	0	0	0	0	0	0
month average	0	0	0	0	0	0	0	0	0	0	0	0	0
month minimum	0	0	0	0	0	0	0	0	0	0	0	0	0
day Maximum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Heating, cooling and DHW are electricity. Direct electric is the part the heat pump could not cover.

Battery
Krems 48.40000, 15.98900

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All
Wasted													
month Maximum	0	1	132	833	1100	1148	945	666	222	2	0	0	3895
month average	0	0	60	483	695	774	704	494	116	0	0	0	3327
month minimum	0	0	13	294	270	423	433	280	38	0	0	0	2852
day Maximum	0.0	0.7	26.2	66.9	80.8	92.8	75.3	70.5	39.6	2.3	0.0	0.0	92.8
day average	0.0	0.0	1.9	16.1	22.5	25.8	22.7	16.0	3.9	0.0	0.0	0.0	9.1
day minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Full cycles													
month Maximum	5.14	13.30	22.24	24.77	25.21	25.81	26.72	25.49	23.11	17.17	4.62	4.09	199.35
month average	3.82	10.15	18.83	22.22	23.21	23.85	24.51	23.05	20.46	12.74	3.32	3.67	189.84
month minimum	3.17	5.10	14.32	19.97	17.80	20.61	21.49	21.24	16.88	8.09	2.76	3.21	176.21
day Maximum	0.63	1.14	0.96	1.09	1.11	1.09	1.09	1.07	0.97	0.84	0.52	0.16	1.14
day average	0.12	0.36	0.61	0.74	0.75	0.79	0.79	0.75	0.68	0.41	0.11	0.12	0.52
day minimum	0.08	0.08	0.08	0.09	0.08	0.09	0.34	0.08	0.08	0.08	0.08	0.09	0.08
Charge C													
month Maximum	0.10	0.13	0.21	0.22	0.22	0.22	0.21	0.20	0.20	0.15	0.10	0.07	1.92
month average	0.07	0.12	0.19	0.21	0.21	0.21	0.20	0.20	0.19	0.13	0.09	0.06	1.88
month minimum	0.06	0.10	0.18	0.20	0.20	0.20	0.19	0.19	0.18	0.12	0.06	0.05	1.84
day Maximum	0.10	0.13	0.21	0.22	0.22	0.22	0.21	0.20	0.20	0.15	0.10	0.07	0.22
day average	0.04	0.08	0.12	0.16	0.16	0.17	0.17	0.16	0.14	0.08	0.04	0.04	0.11
day minimum	0.01	0.01	0.02	0.03	0.02	0.03	0.02	0.03	0.02	0.01	0.01	0.01	0.01
Discharge C													
month Maximum	0.11	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.12	0.12	0.11	0.01	1.27
month average	0.05	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.12	0.06	0.01	1.16
month minimum	0.01	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.01	0.01	1.06
day Maximum	0.11	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.12	0.12	0.11	0.01	0.12
day average	0.01	0.08	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.09	0.01	0.01	0.08
day minimum	0.01	0.01	0.01	0.01	0.01	0.01	0.09	0.01	0.01	0.01	0.01	0.01	0.01

Wasted = PV that could not be stored or exported 09:00–15:00 (battery full). Full cycles = discharge kWh / 176.8 kWh. Export is cut at 15:00 until the next 72 h need no import. Import only if export is already z