WUFI® Tutorial

Meteonorm 7:
Generate climate data for WUFI®
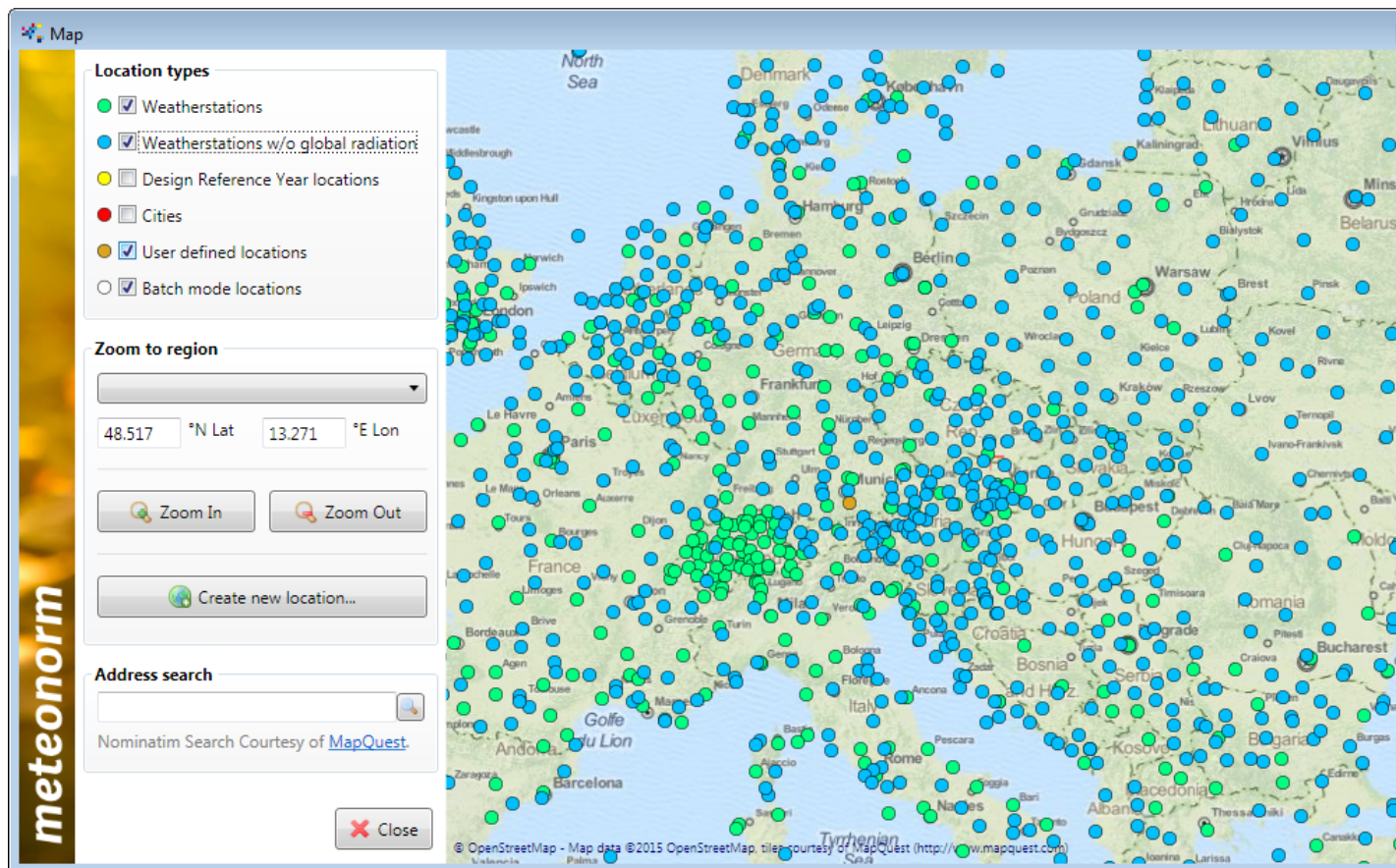
Meteonorm: Climate data for WUFI®

The software Meteonorm from the Swiss company Meteotest
(www.meteonorm.com) offers the possibility to create climate data for any
location worldwide. For this purpose the program includes long term monthly
mean values for a large number of weather stations. Based on this, an
interpolation could generates site-specific hourly values. In addition, Meteotest
offers the possibility to purchase individual climate data sets, created for any
specific location.

Concerning the driving rain, it´s important to note that the correlation between
wind and precipitation events is not sufficient. This could lead to an incorrect
modelling of the amount and direction of the driving rain. If the accurate amount
of driving rain is essential for the evaluation of a construction the climate data
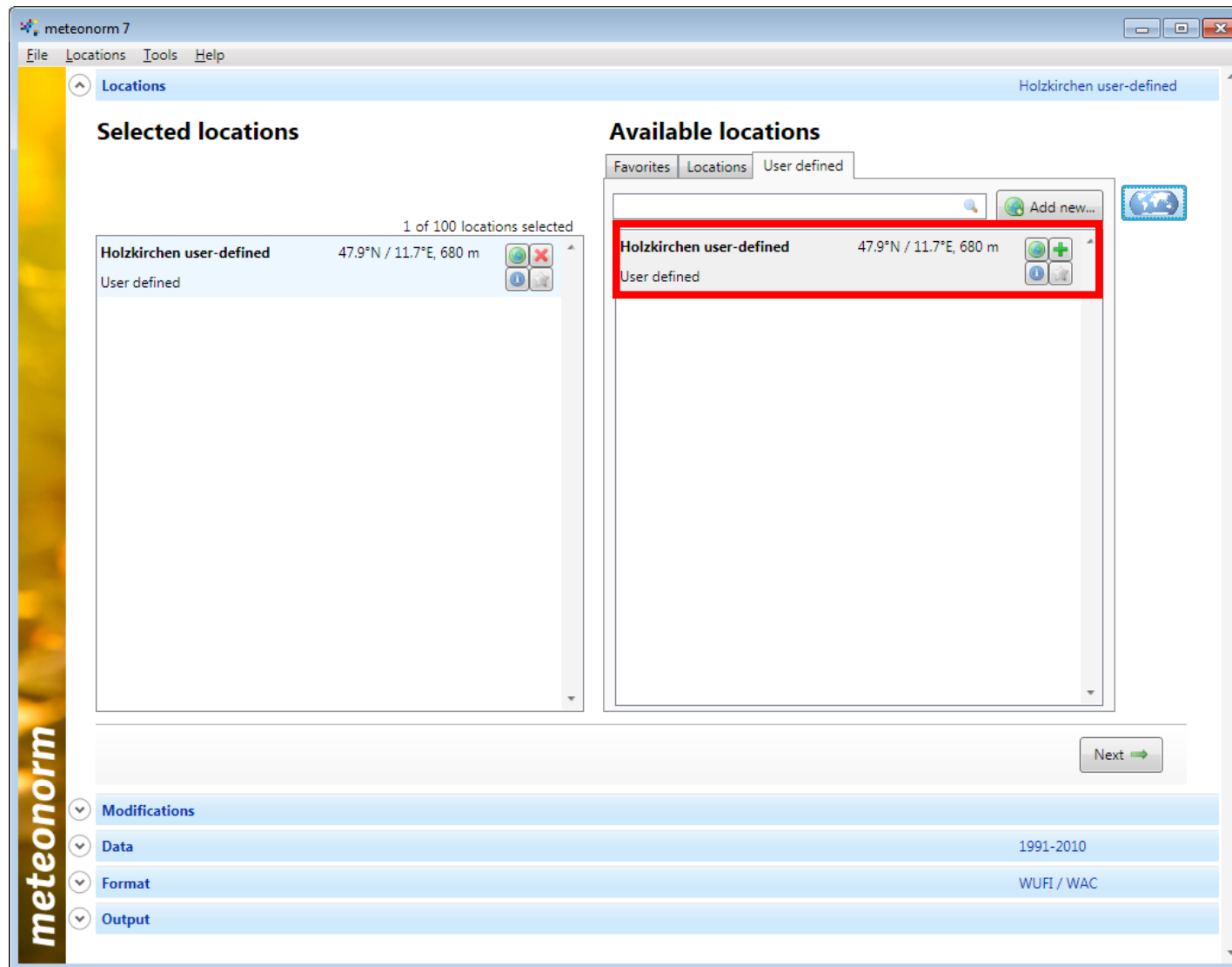from Meteonorm may not be sufficient.

Fraunhofer
IBP

Meteonorm: Climate data for WUFI®

Preferred order of data sources:

1. Stations, if present at the desired location

2. Stations (Gh interpolated by Near stations)

3. User defined interpolation based on the surrounding stations (orange)

Fraunhofer
IBP

Meteonorm: Climate data for WUFI®

It is possible to select locations from a list too

even user defined locations are listed there

Meteonorm: Climate data for WUFI®

During the next step the modification of the climate data is possible.

For the WUFI climate data this is not necessary.

Fraunhofer
IBP

Meteonorm: Climate data for WUFI®

If the a measured station is chosen the different time period is shown:

Normally the actual timespan is chosen.

In addition there is a past measured period and a prediction for the future (based on IPCC climate scenario)

Meteonorm: Climate data for WUFI®
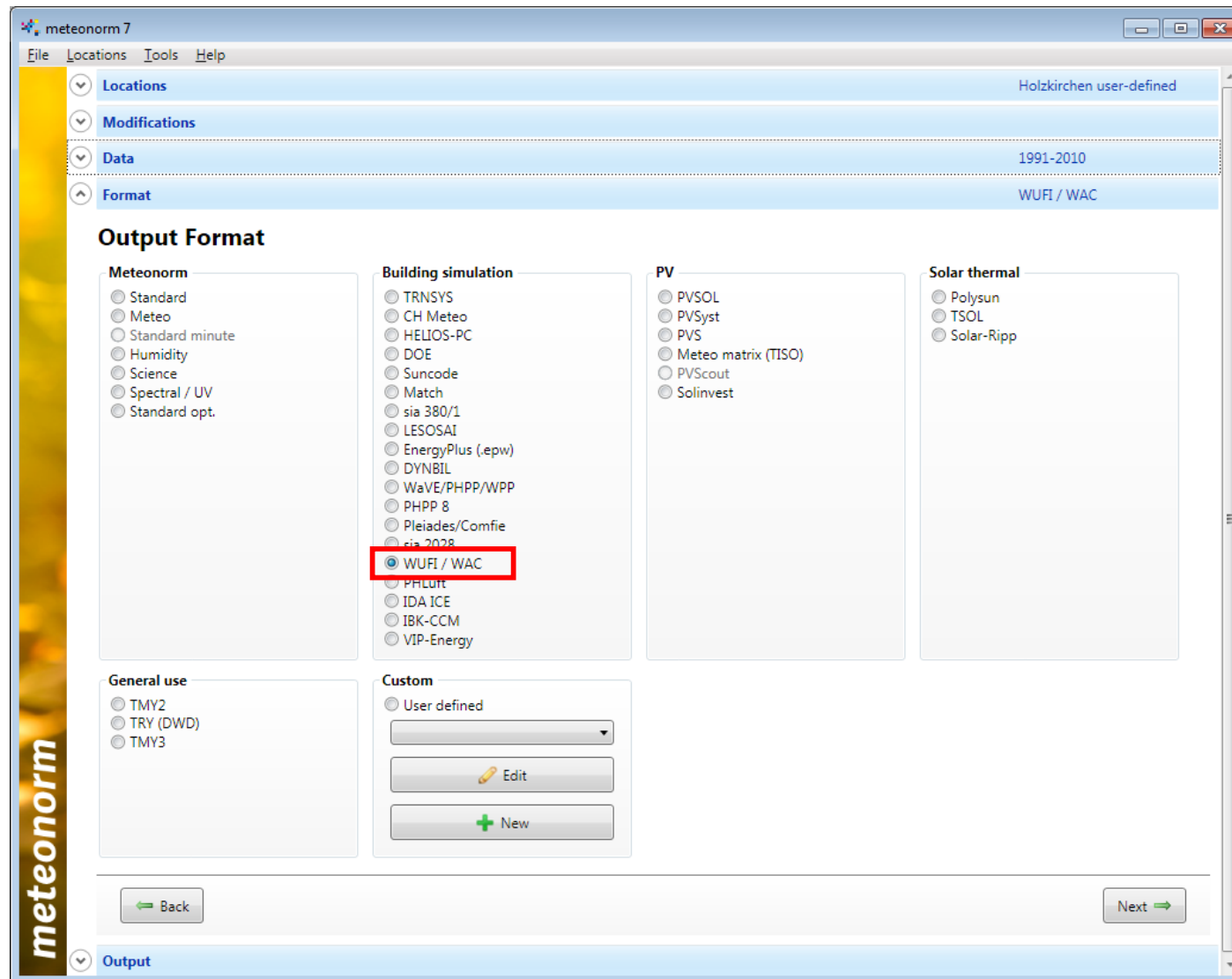
Concluding the export format have to be selected.

For WUFI the WAC format is necessary.

Meteonorm: Climate data for WUFI®

After the calculation the simulated climate dataset is shown. With pressing (1) „Save" the climate data can be saved.
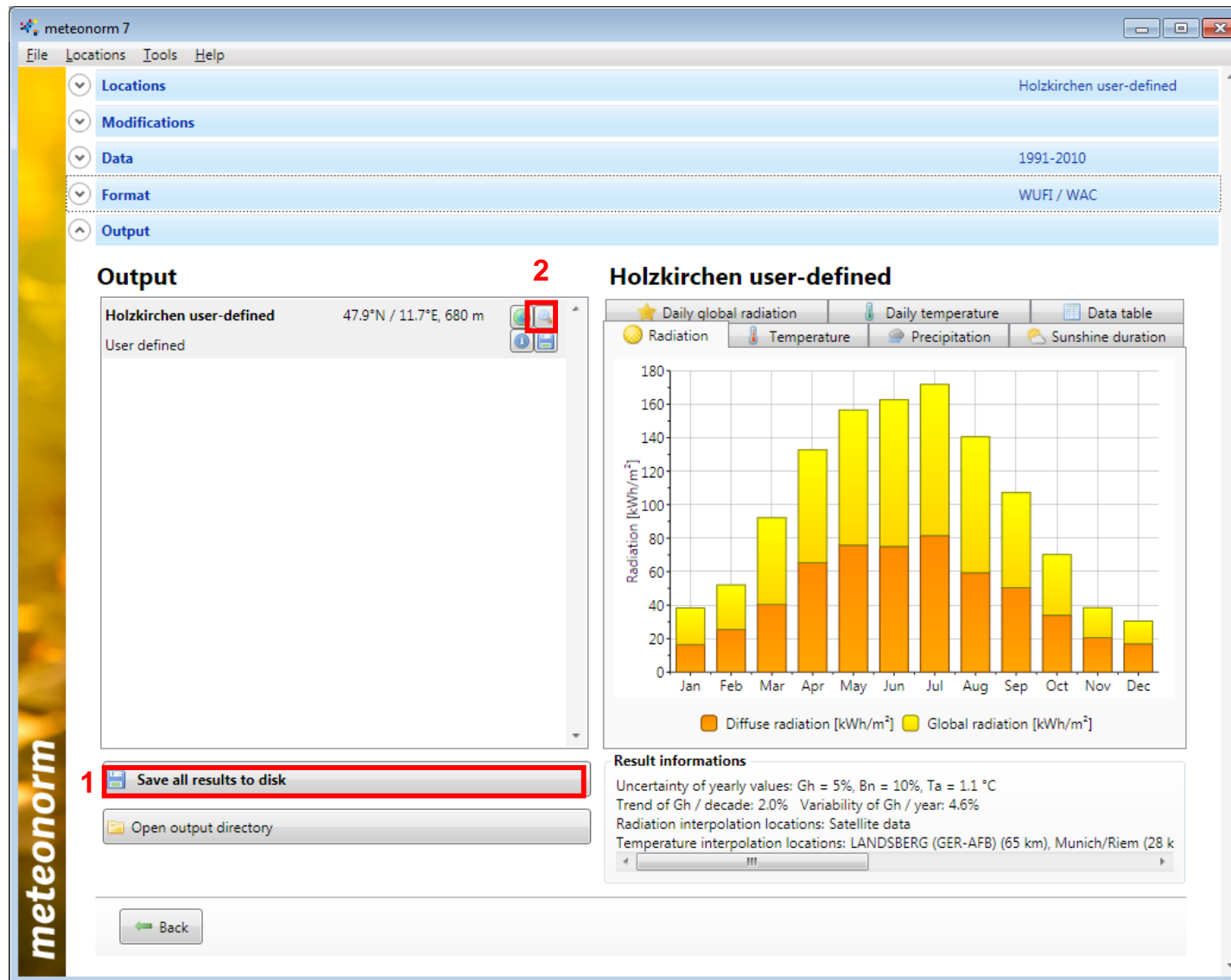
Afterwards with (2) „View Results" the overview of the climate data can be assessed.

Meteonorm: Climate data for WUFI®

During the saving process the hourly resolution must be selected.

Meteonorm: Climate data for WUFI®

Holzkirchen user-defined
Location name

47.88	11.73
Latitude [°N]	Longitude [°E]
680	III, 3
Altitude [m a.s.l.]	Climate region

Standard	Standard	Perez
Radiation model	Temperature model	Tilt radiation model
2000–2009	1991–2010	Custom
Temperature period	Radiation period	Horizon

Additional information

Uncertainty of yearly values: Gh = 5%, Bn = 10%, Ta = 1.1 °C
Trend of Gh / decade: 2.0%
Variability of Gh / year: 4.6%
Radiation interpolation locations: Satellite data
Temperature interpolation locations: LANDSBERG (GER-AFB) (65 km), Munich/Riem (28 km), KUFSTEIN (46 km), LECHFELD (GER-AFB) (73 km), Innsbruck Univ. (72 km), KEMPTEN/DURACH (106 km)

Month	H_Gh	H_Dh	N	Ta	RH	FF
	[W/m2]	[W/m2]	[Octas]	[°C]	[%]	[m/s]
January	51	22	5.4	-1.2	80	3.2
February	77	38	5.0	0.6	77	3.4
March	124	54	5.1	4.1	71	3.7
April	184	91	5.3	8.9	64	3.1
May	210	102	5.3	13.8	65	3.0
June	226	104	5.4	17.2	66	2.6
July	231	110	4.8	18.1	67	2.9
August	189	80	5.0	17.8	69	2.6
September	149	70	5.3	13.4	73	2.6
October	94	46	5.2	9.3	79	2.9
November	53	28	6.1	3.8	82	3.0
December	41	23	5.5	-0.2	84	3.1
Year	136	64	5.3	8.8	73	3.0

In addition to the climate data a statistical overview of the different parameters is shown.

It can be saved as a PDF, this allows the comprehension of the result.

Fraunhofer
IBP

Meteonorm: Climate data for WUFI®

Holzkirchen user-defined
Location name

47.88 Latitude [°N]		**11.73** Longitude [°E]	
680 Altitude [m a.s.l.]		**III, 3** Climate region	

Standard Radiation model	**Standard** Temperature model	**Perez** Tilt radiation model
2000–2009 Temperature period	**1991–2010** Radiation period	**Custom** Horizon

Additional information

Uncertainty of yearly values: Gh = 5%, Bn = 10%, Ta = 1.1 °C
Trend of Gh / decade: 2.0%
Variability of Gh / year: 4.6%
Radiation interpolation locations: Satellite data
Temperature interpolation locations: LANDSBERG (GER-AFB) (65 km), Munich/Riem (28 km), KUFSTEIN (46 km), LECHFELD (GER-AFB) (73 km), Innsbruck Univ. (72 km), KEMPTEN/DURACH (106 km)

| Month	H_Gh	H_Dh	N	Ta	RH	FF
	[W/m2]	[W/m2]	[Octas]	[°C]	[%]	[m/s]
January	51	22	5.4	-1.2	80	3.2
February	77	38	5.0	0.6	77	3.4
March	124	54	5.1	4.1	71	3.7
April	184	91	5.3	8.9	64	3.1
May	210	102	5.3	13.8	65	3.0
June	226	104	5.4	17.2	66	2.6
July	231	110	4.8	18.1	67	2.9
August	189	80	5.0	17.8	69	2.6
September	149	70	5.3	13.4	73	2.6
October	94	46	5.2	9.3	79	2.9
November	53	28	6.1	3.8	82	3.0
December	41	23	5.5	-0.2	84	3.1
Year	136	64	5.3	8.8	73	3.0

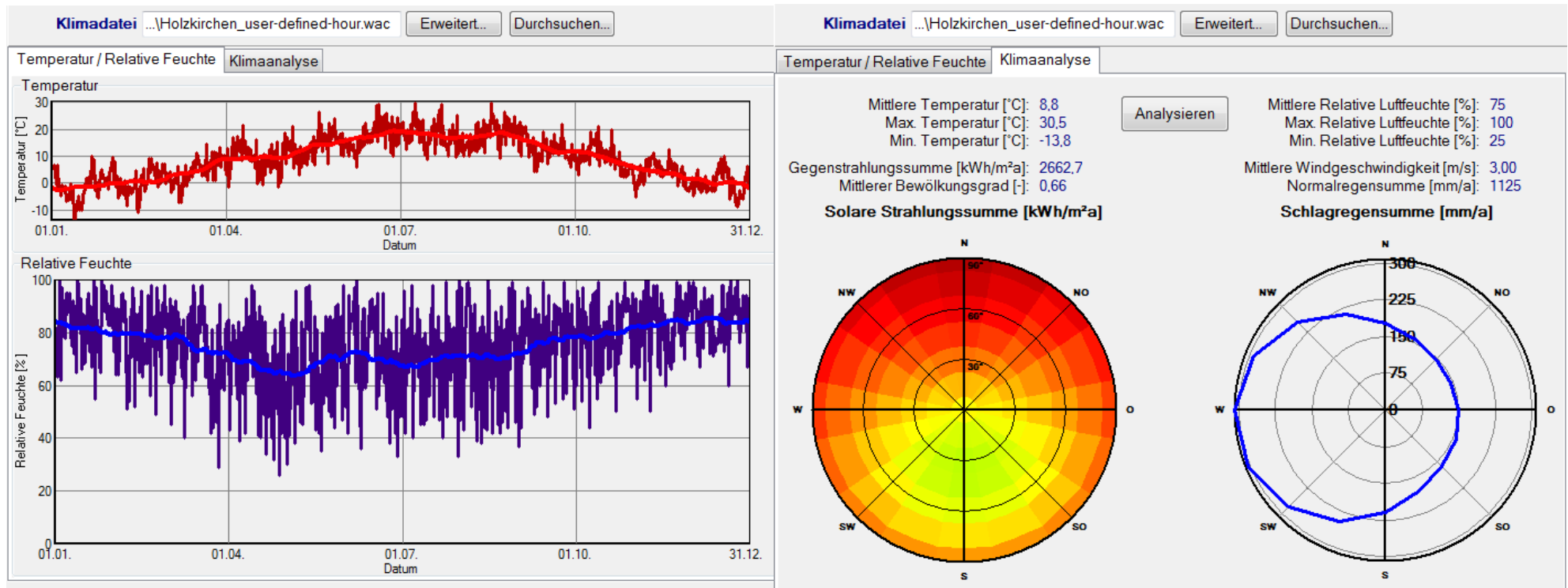### Daily temperature
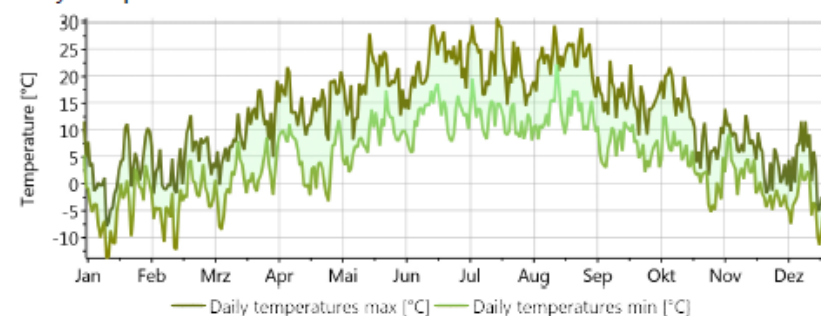
Precipitation

Sunshine duration
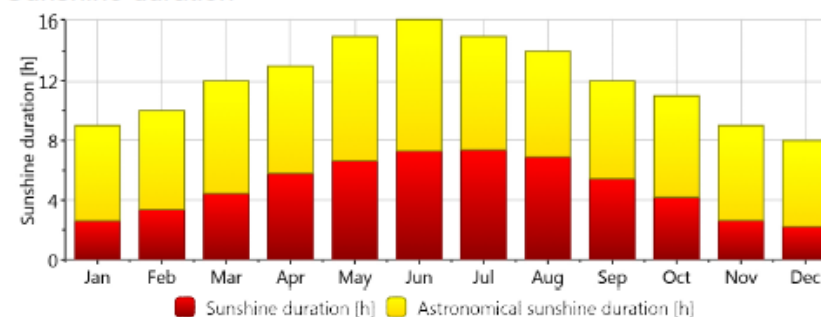
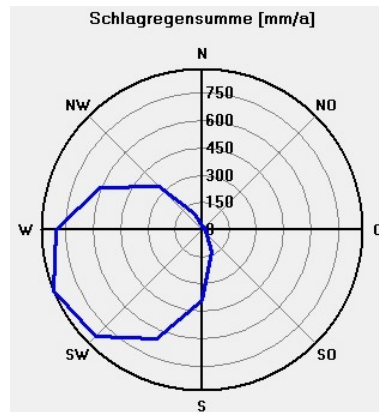# Meteonorm: Climate data for WUFI®

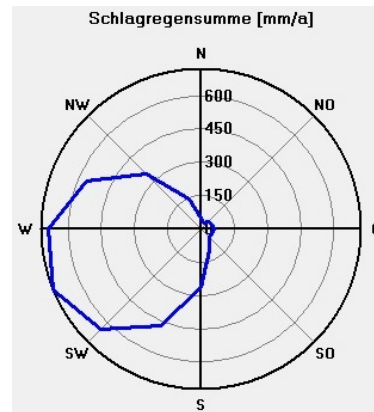The generated climate data can be directly imported into WUFI.

Meteonorm: Distribution of driving rain

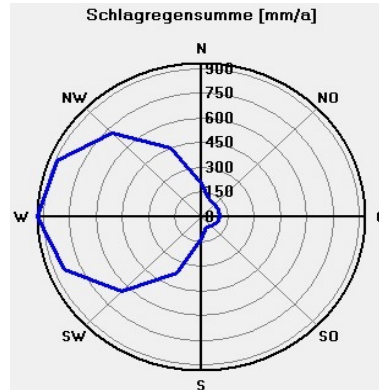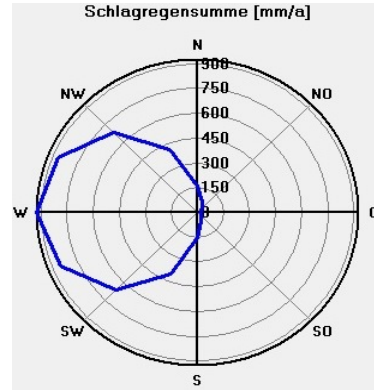## Driving rain measurement for Holzkirchen
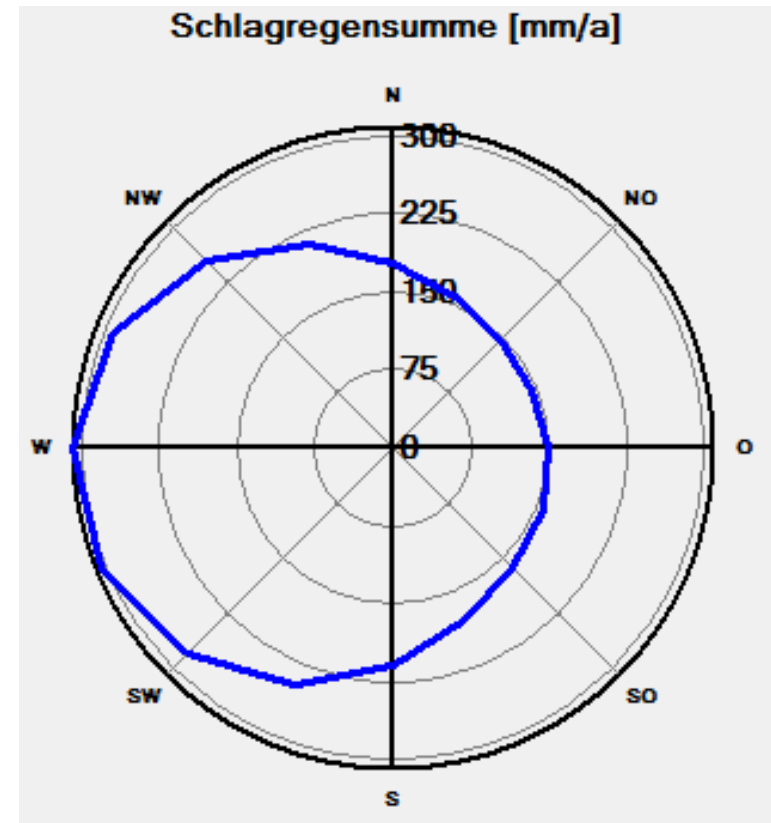
1991

1992

1993

1994

Driving rain from Meteonorm 7 for Holzkirchen

Note: The distribution of the driving rain from Meteonorm is more uniform than the measured data. Furthermore the yearly sum is less than the measurement.