Library:

Transparent cover library:

- ETFE
- Double inflated ETFE
- Glass and ETFE
- Polycarbonate 8mm
- Polycarbonate 10mm
- Polycarbonate 16mm
- Polycarbonate 32mm
- Single plastic film
- 4mm clear glass
- 4mm diffuse glass
- 6mm clear glass
- Double glazing
- Double inflated plastic film
- Low-E double glazing

Crop library:

- Tomato
- Cucumber
- Strawberry
- Lettuce
- Cannabis
- Cut flower
- Pot plant

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Hortinergy specification

Input parameters

Weather file:

- GPS position
- Altitude
- Time zone
- Site situation (open, depression, near to sea/lake, city…)
- Albedo

Greenhouse envelop

- Greenhouse type: venlo, large span, gothic, flat arch
- Length
- Width: number of chapel/span
- Orientation
- For each wall
  - Cover (cf. library)
  - Frame percentage
  - Climate screen number for roof 0-1-2; for wall 0-1
  - Climate screen type (thermal, white strips, aluminium)
  - Shading percentage
- Light transmission loss due to dust
- Air leakage: defined by user, calculated by Hortinergy

Crop production

- Type of crop (cf. library)
- Cultivation period
- Production technique: suspended crop/gutter, benches, above plastic mulch, asphalt, soil
- Type of soil
- Central pathway: type, percentage

Climate management

- Temperature set
  - 6 periods during one year
  - Day/night or constant
- Day / Night switch - Thermal screen management strategy
  - Minimum solar radiation
  - Delta Temperature inside/outside maximum
- Morning revival
  - Solar radiation to reach day temperature
  - Temperature increase per hour

Heating production

- 2 heat sources and 2 heating systems
- Energy cost and currency
- Maximum power calculated by Hortinergy
- Primary production and auxiliary:
  - Running period
  - Maximum power
  - Condenser
- Distribution efficiency
- Buffer tank
  - Volume
  - Temperature variation load/unload
  - Height
  - Insulation

Results

PDF report for a scenario

- Weather data summary
- Energy: demand, total, main and auxiliary systems
  - Annual
  - Monthly
  - Average hourly for each month
- Energy cost: total, main and auxiliary systems
  - Annual
  - Monthly
- Maximum power calculated by Hortinergy
- PAR reaching canopy: monthly summary
- Dehumidification needs: monthly summary

Excel report (hourly, monthly summary)

- Weather data file
- Energy: demand, total, main and auxiliary systems
- Energy cost: total, main and auxiliary systems

Online comparison between scenarios

- Monthly
- Hourly
- Economic analysis