

TRNSYS 18 Daylight simulation

Dynamic daylight simulation and daylight dependent control for artificial lighting in the TRNSYS multizone building model (Type 56)

TRNSYS 18 integrates dynamic daylight simulation based on DaySIM into the TRNSYS multizone building model Type 56.

The 3-D geometries of the existing building model are used to calculate illuminance levels for sensor points.

The daylight model as well as the thermal simulation consider various shading configurations, which can be controlled by different strategies.

As in actual building environments, the newly implemented daylight simulation determines the artificial lighting control according to the available daylight illuminance. An on/off hysteresis control, a dimming function and a combination of both can be chosen to regulate up to three areas per zone.

The most important features are:

- use of the 3D geometries from Trnsys3d or Rhinoceros / TRNLizard
- dynamic daylight simulation for sensor points based on the integration of DaySIM methods
- consideration of different shading configurations in the daylight and thermal model
- control of artificial lighting according to daylight coefficients, illuminance at sensor points or other set lux values
- output file with standard results like illuminance, daylight factor (DF), daylight autonomy (DA), continuous daylight autonomy (cDA), user daylight index (UDI)
- visualization of results in an online plotter

