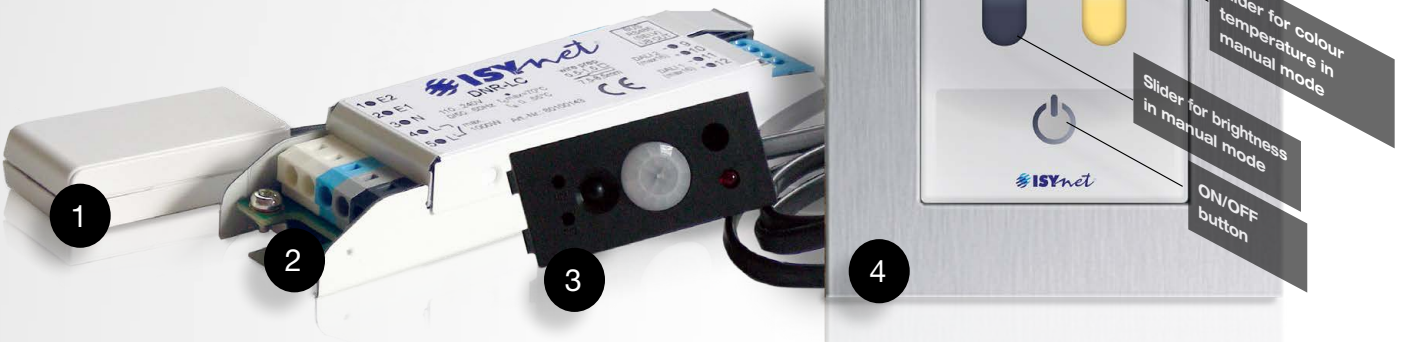
Human Centric Lighting

Creating a biologically positive light effect

SEEBACHER GMBH
Gebäudeautomation

The Day-Night-Rhythm Compact System

The Day-Night-Rhythm (DNR) system was developed especially for small applications with biologically effective lighting. You benefit from a compact system for single-room control that can be put into operation quickly and easily.



In the basic set, you only need the light controller (DNR-LC) that forms the interface to the DALI lamps and the touch controller (DNR-TC) or DNR clock. Putting into operation and changing the operating functions are conveniently accomplished with the free iOS app. Geographical data for the real-time clock are transmitted when putting the system into operation with the app.

Numerous options are supported by the setting possibilities:
Manual mode with dimming and adjustment of the colour temperature, automatic mode with configurable switching times, individual curves for the light control sequence with adjustment of the brightness and colour temperature.

- ✓ Manual mode
- ✓ Switching times
- ✓ Dynamic processes

System overview:

- Lamps: max. 16 DALI lamps
- Group 0 / channel 1: warm white
  Group 1 / channel 2: cold white
- Inputs: 2 for switches or motion sensors
- Components:
  Light controller (DNR-LC)
  Touch controller (DNR-TC)
  Clock (DNR-Clock)
  Light sensor (DNR-LS)
- Settings: Convenient using iOS App

Option 1 – DNR-TC touch controller 4

The touch controller works only in conjunction with the light controller and is connected directly with a 4-wire cable. Up to three touch controllers can be connected in parallel. The **receiver for programming** is an optical sensor. Settings are transferred to it from the smart phone app per camera flash. With the **scene switches**, you can save and load lighting scenes. A large selection of standard frames from the GIRA line is available for the touch controller.

Article no. 80100160

Option 2 – DNR clock module 1

The clock module features the same setting possibilities and functionality as the touch controller. Using the clock module is advisable to control lighting with only switches or motion sensors. The clock module is also equipped with an optical sensor to receive the settings from the app. The switch functions are established in the app as well.

Article no. 80100141

DNR-LS light sensor 3

The light sensor is used for the daylight-dependent control of a lamp group using the DALI protocol. The operating mode and switch-off delay time are configured using the smart phone app. An integrated motion sensor switches the lighting according to the chosen operating mode:

- Automatic: switching on and off automatically
- Semi-automatic: Switching off automatically, manual switching on required

Article no. 80100144

Human Centric Lighting

We spend most of our time indoors during the day, exposed to artificial light. This artificial lighting lacks elements that synchronise our circadian rhythm.

Nature as the model

The biological effect of light depends largely on the colour temperature and intensity of illumination. These change in the course of the day and our body synchronises the day-night cycle accordingly. However, light not only influences our circadian rhythm but also our cognitive learning ability, well-being and quality of sleep.

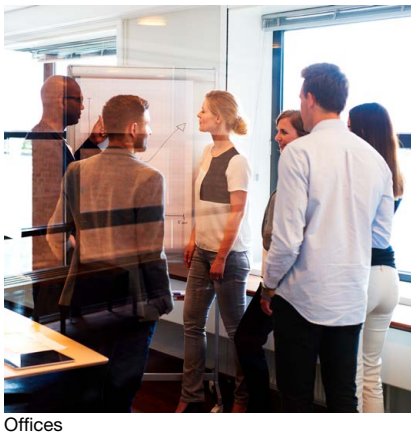
The light of the future is healthy

Human Centric Lighting is the contemporary generic term for a lightingconcept that focuses on people and their health. The spectral composition and illumination level of natural daylight are perfectly reproduced and used for interior lighting. The resulting artificial light has an activating and relaxing effect on the human organism.

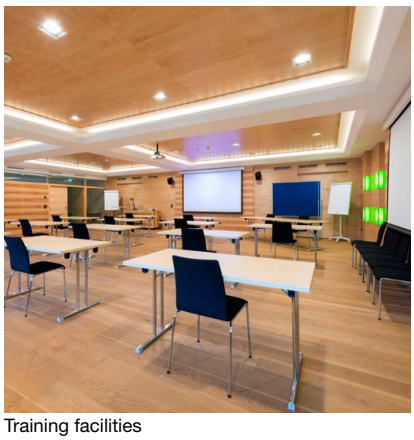
Applications for Human Centric Lighting

Healthy lighting that contains the missing daylight elements is especially important in rooms where people are present for long periods of time:

- Nursing homes
- Hospitals
- Offices
- Classrooms



Offices



Training facilities

Rehabilitation centres

Measurable effects

- Increased productivity
- Lower stress level
- Improved concentration
- Greater well-being
- Faster healing in healthcare facilities
- Improved situation of dementia patients
- Better sleep quality in nursing homes

DNR-LC light controller ②

The light controller is used to operate DALI lamps with colour temperature control and only works in conjunction with the touch controller or clock module. The functionality is very convenient to configure in the iOS app.

The module is equipped with an integrated DALI power supply and a relay to reduce the standby output of lamps below 0.5 W. It is designed as a lamp add-on module with a very compact mounting form.

Article no. 80100143

Operating voltage	198-264 V AC / 175-280 V DC
Power consumption	Less than 0.5 W at 230 V AC
Switch contact output	230 V AC, max. 1000 VA
Switch input	2x switch input 230 V, max. 10 mA; typical 5 mA
DALI interface	Max. 16 DALI electronic ballasts per DALI output (total 32)
Assembly	Lamp installation
Dimensions	LxWxH 130 x 30 x 21 mm
Weight	89 g
Connections	Plug-in terminal 0.5-1.5 mm²; RS-485 as RJ10
Max. ambient temperature	-20 °C to +65 °C
Typical TC point (max.)	+70 °C
Storage temperature	-25 to +70 °C
Relative humidity	1...95 % non-condensing
Service life	> 50000 h at TC 70 °C >100000 h at TC 65 °C
Protection class	IP20
CE marking	Yes

Light controller inputs and outputs (DNR-LC):

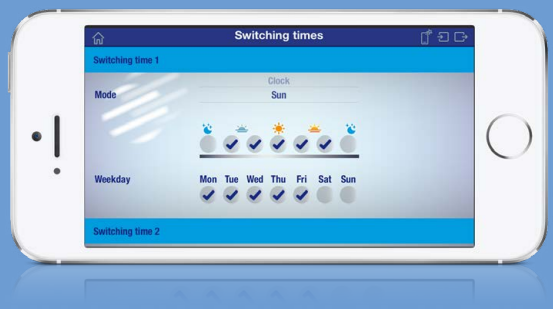
- 2 inputs 230 V for switches
- 1 output 230 V max. 1000 VA for switching off the load in standby
- 2 DALI BUS outputs, each for max. 16 DALI devices
- Optical sensor to receive the settings from the app

Easy to put into operation via iOS App

Configure lighting control as desired in the free “DNR” app. Subsequently the settings are optically transmitted to the clock module or touch controller via camera flash. If you want to use the same settings more than once, you can save them and subsequently reuse them or make changes the next time you put the system into use.

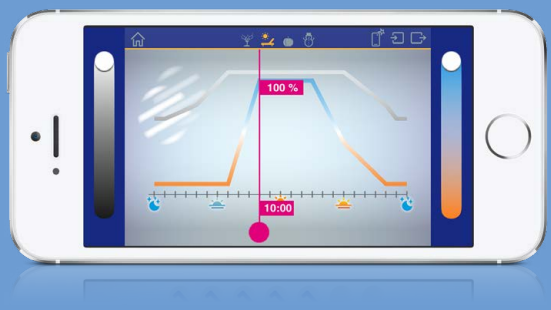
Configuring switching times

Three switching times can be defined according to the day of the week, time of day or position of the sun.



Circadian rhythm configuration

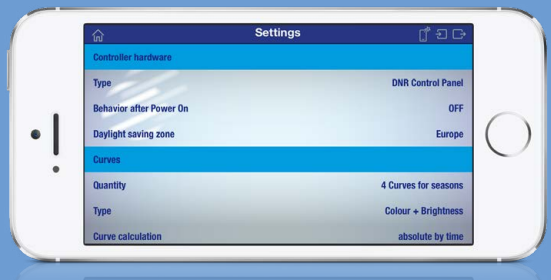
Separate curves are displayed for the colour temperature and brightness. The settings are configured according to the time of day or position of the sun. The curves can be saved and exported.



Extended settings

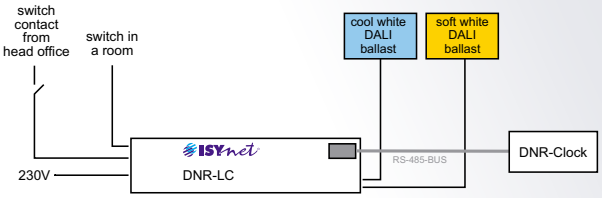
Various functional settings can be configured when putting the system into operation. These include:

- Display of the curve (one year curve or four curves for the seasons)
- Behaviour after Power On
- Dimm-Settings
- Lamp adjustment
- Adjustment colour temperature
- Input channel function
- Relay output function
- DALI settings (mode, fade time)
- ...

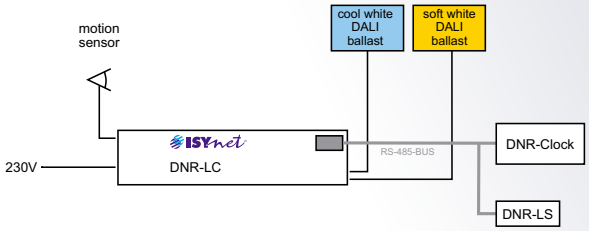


ISYnet – Application examples

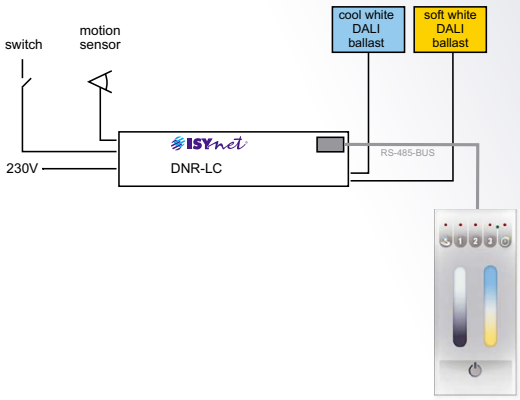
Switch
and external contact



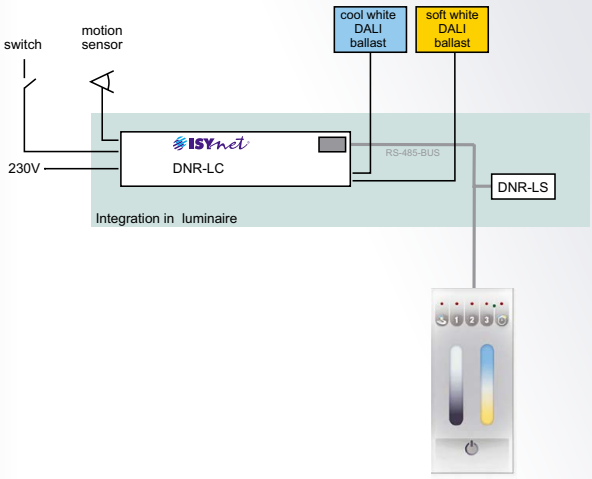
Daylight control
with motion sensor



Touch controller
with switches and motion sensor



Touch controller
with switches, motion sensor and light sensor installed in the lamp



Did you know...

The low investment cost and ease of putting this solution into operation will convince you. Please contact us!

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