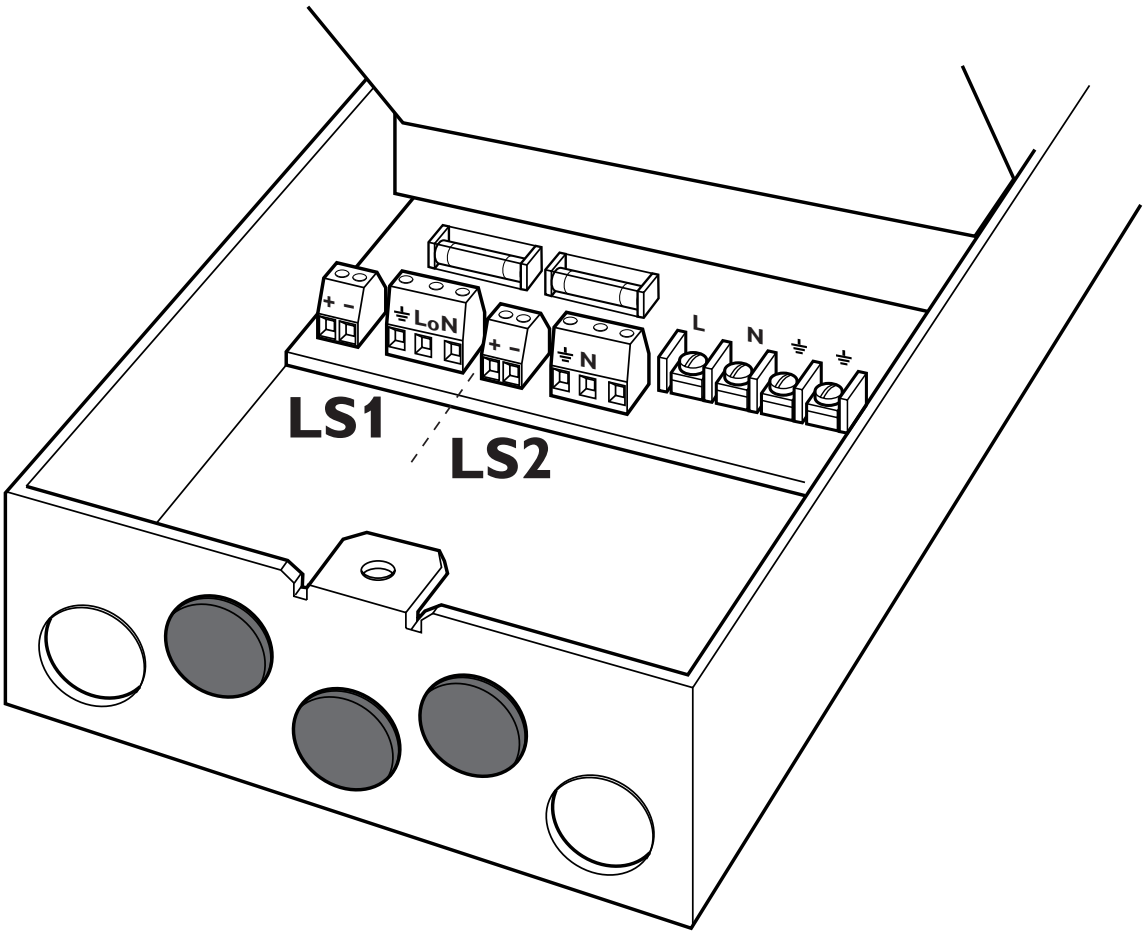
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LRC 5042/00
HELIO 2 way light controller

Manual control

Preset values
Preset fade timer
Fade off timer
Operation mode
Overwork timer

4 presets (predefined light levels) can be set and recalled.
The presets can be pre-defined by the user with the IRC 2130 remote control. Selecting a preset will result in gradually change if the fade timer is enabled.
By setting the fade off timer, light will not turn off immediately after receiving a switch off command, but will fade during the selected interval.

Manual control operation modes

Normal operation
Overwork timer

If set, an automatic overwork timer can be used. After an off command from the clock it is possible to switch them manually back on again, but now for a defined period. After this period the light will automatically be switched off again. Note this mode should only be used in combination with the clock fade off timer and dimmable luminaires.

Clock control

Preset values
Fade off timer

An external clock can select one of four presets (predefined light levels). These presets can be enabled or disabled, and light levels between 0% (= off) and 100% can be selected.
By setting the fade off timer, light will not turn off immediately after receiving a clock command, but will fade during the selected interval.

General control

Default on
Slave to master
Power-on value
Inverted output

The default on value determines the output, or light, level if an on command is given, either manually or by the occupancy control.
It is possible to slave an controller to another controller.
The power-on value defines how the controller will set the output after a power failure*. Note that sensors can have a direct effect on this, like for instance a movement detector.
It is possible to invert the output, so that the controller can be used in combination with external normally closed (NC) contactors**.
All the control commands work sequentially. So the last received command or state determines the actual light level.
In case of daylight regulation, used presets and default on values will not immediately effect the light output of the luminaires, but will change the reference level of the daylight regulation. For instance if the maintained light level is set to 500 lux, a preset of 50% will set the reference level (or maintained light level) to 250 lux. The switch on and off values of the daylight regulation are equally effected.
For daylight switching the maximum (installed) lux level is reference value for the switch on and off level.

Compatibility LRC 5042/00 with other controllers
The 2LS is compatible with other Philips lighting controllers, like the LRC 5040/10 (SLSV2.40), LRC 5133 (Helio Multi Sensor V1.01) and LRC 5048 (8LSV1.0)

	8LS		SLS		HMS		Clock	
	→	←	→	←	→	←	→	←
MD	Yes	Yes	No	Yes	-	Yes	-	-
IR	Yes	-	No	Yes	-	Yes	-	-
LS	Yes	Yes	Yes	Yes	-	Yes	-	-
Clk	-	-	-	-	-	-	-	Yes
Slave	Yes	Yes	Yes	Yes	-	-	-	-

→ From 2LS to .. "Binding" possibilities
← To 2LS from ..
Clk Clock function

Profile
The following page shows the (LonMark) profile of the 2LS. For space reasons variables used for compatibility with other (not LonMark) Philips controllers are not shown.

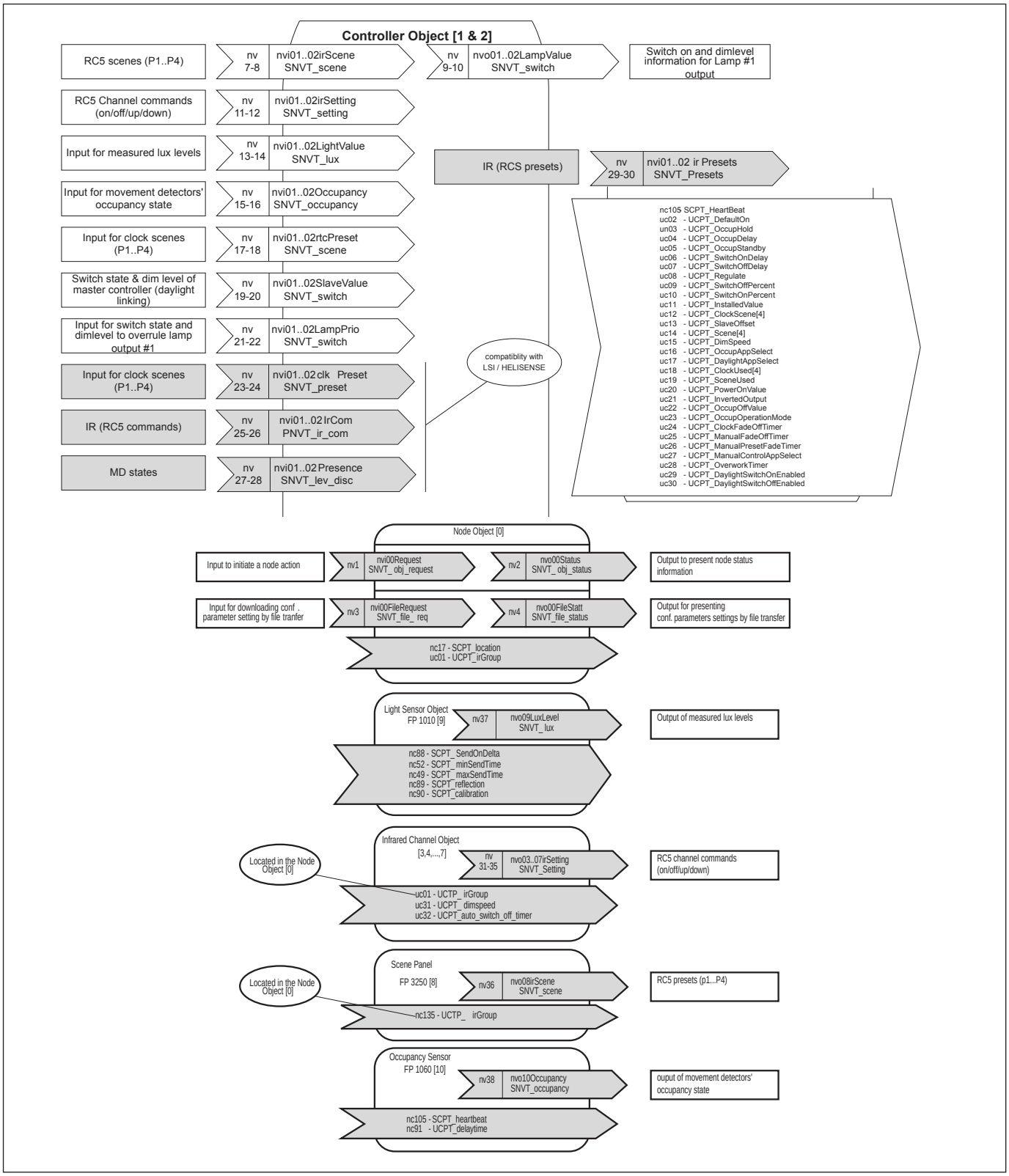
More detailed information can be obtained from your local Philips Ligthing Controls representative.

* Remark: initial power-up no binding = 50%

** Remark: dim output is not inverted.

LRC 5042/00
HELIO 2 way light controller

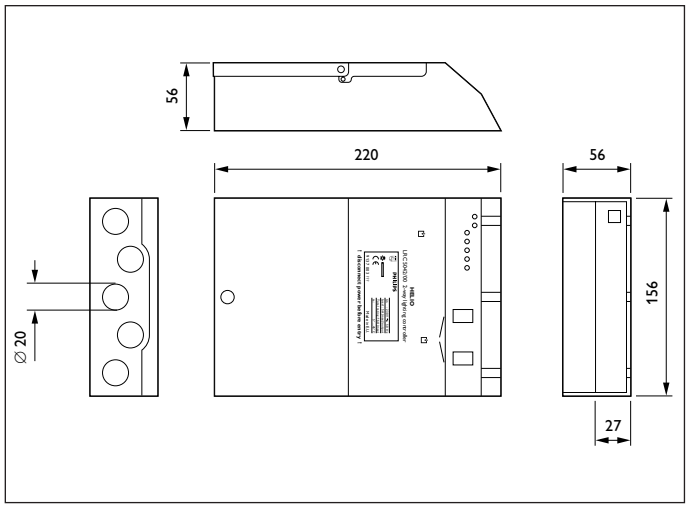
3222 636 31070
02/2000
Printed in the Netherlands
Data subject to change
http://www.lighting.philips.com



PHILIPS

LRC 5042/00
HELIO 2 way light controller

dimensions



Product details

General

- The LRC 5042/00 (also known as 2-way Luminaire Switch or 2LS) is a LonWorks™ light controller with two configurable outputs and one sensor interface for standard movement detectors, light sensor and IR receivers.
- The light controller is LonMark™ compliant and can easily be integrated with other LonMark™ products.
- The outputs have a 5-pole screw connector that provides Live, Neutral, earth for switching lighting loads upto 5A and a + and –for 1-10V HFR dimming.
- The LRC 5042/00 has an installer box housing. The side panel has five access holes dimensioned for 20mm diameter cable glands (not provided) for mains and output connections
- The metal "hands free" housing can be screw mounted against a wall or ceiling.
- LEDs are provided on the housing top to indicate power, output and the controller state.
- The twisted-pair bus cable is screw connected to a 2-pole connector at the side of the unit.

Sensor interface

- The sensor interface has two modular input sockets for conventional sensors. Up to four movement detectors, five IR-receivers and one light sensor can be plugged into the socket with standard sensor cables. A modular branching connector is needed when more than two sensors are connected.

Commissioning software

- Unilon and Helio application software is used to configure the movement detector, light sensor and IR Receiver to link them to individual outputs in any light controller. The functionality of connected luminaires is defined by setting the control parameters of the output.
- The unit's neuron ID is registered in Unilon by pressing a service pin on the housing front. Neuron IDs are also printed in bar-code and hexa-decimal characters on two stickers placed on the unit. This allows ID registration by barcode scanner or keyboard.
- Commissioning of the unit is also possible using the plug-in for LonMaker.

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Philips Lighting

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LRC 5042/00
HELIO 2 way light controller

Applications
- The LRC 5042/00 is designed for automatic and manual light control in offices, but can be used in almost any indoor lighting application.
- The LRC 5042/00 can be used for:

Energy saving
- A light sensor can be used for daylight linking. If the daylight level in a room increases the LRC 5042/00 will dim the artificial light. The result is a constant light level, with the minimal use of energy. Movement detectors can be placed in the working area to automatically switch lights off when this area is vacated. Clock control can be used to dim or switch off lighting after working hours.

Flexible office lay-out's
- Since lighting functions and functional relations are defined by software, rewiring is unnecessary when office layouts change. In combination with wireless IR wall switches or hand-held remote control a completely flexible solution is created, without any vertical wiring.

Comfort
- The user can set the light level as required. Predefined light levels (presets) can easily be recalled and changed. Automatic control with movement detectors ('hands-free' operation)
- and clock is possible.

Project versions
- Project versions of the LRC 5042/00 application program can be downloaded to the controller. For instance to add integration functions like manual control for sunblind and HVAC systems, in combination with the IRT 8070 remote control.

Related equipment and software Helio
- multi-sensor LRI 5133
- system clock LCU 5315
- digital I/O unit LCU 5305

Standard sensors
- movement detector LRM 8112 (ceiling) and LRM 8015 (wall)
- light sensor LRL 8101
- IR-receivers IRR 8124 and IRR 8125
- multi-sensor LRI 8133

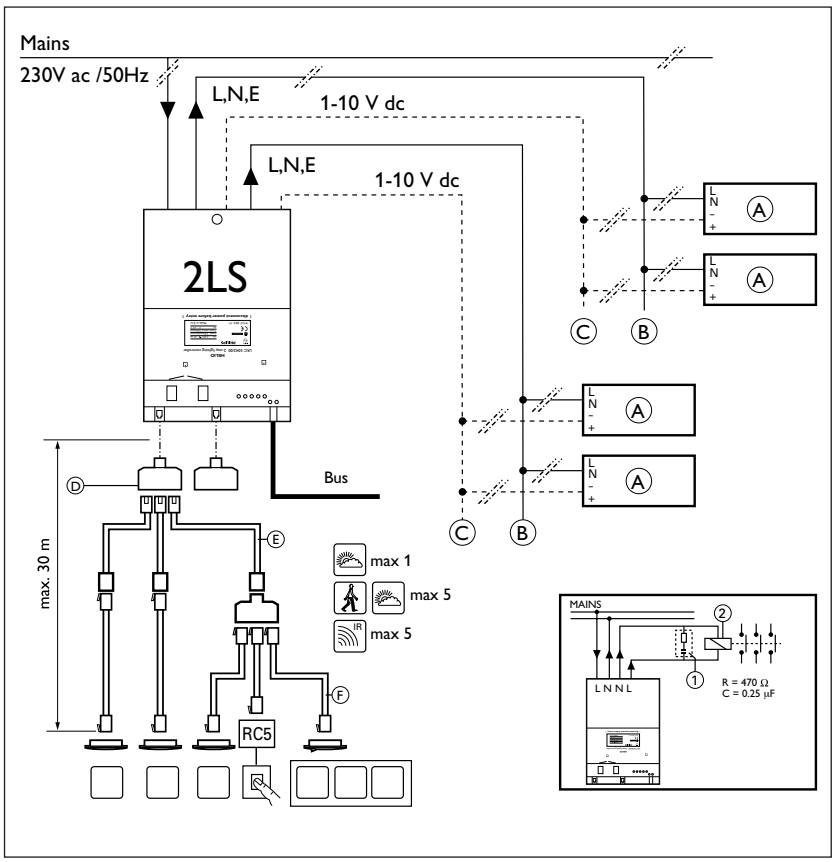
IR transmitters
- wall transmitter IRT 8050
- wall transmitter with temperature sensor IRT 8065
- hand transmitters IRC 2130 and IRT 8070

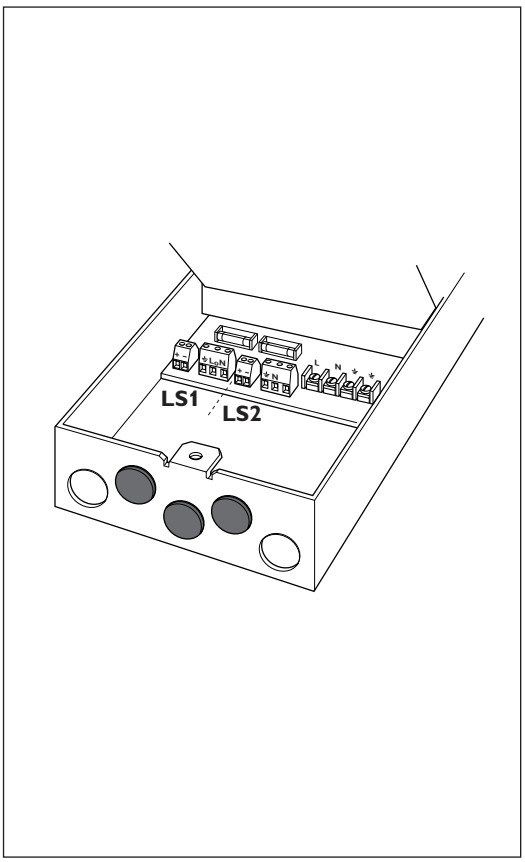
Connecting equipment
- sensor cable LCC 8012; 5m with modular plug & socket
- sensor cable LCC 8013; 20m with modular plug and socket
- sensor cable LCC 8014; 5m with modular plugs at both ends
- branching connector LCC 8024; 3 sockets/1 plug
- bus cable LLC 5301/00; 100m long twisted-pair cable

Software
- Unilon Software (version 2.4 or higher) LCS 5400/00 9137 010 30003
- Helio Plug-ins LCS 5505/00 9137 010 32303
- Helio Manual Control LCS 5410/00 9137 010 30103
- Helio Energy Saving LCS 5415/00 9137 010 30203
- Helio Trainings Software LCS 5496/00 9137 010 30603
- Lonmaker Plug-ins LCS 5506/00 9137 010 32403

Related documentation
- Installation instructions LRC 5042/00 3222 636 41020
- Unilon + Helio Handbook LCH 5999/00 9137 010 00703

For documentation contact your local Philips representative.





LRC 5042/00
HELIO 2 way light controller

Technical data

- Environmental conditions
  - Operating conditions
    - Temperature: +5 to +45°C
    - Rel. humidity: 15% to 90%; no condensation
  - Storage conditions
    - Temperature: 40 to +70°C
    - Rel. humidity: 5% to 95%
- Mains input: 230Vac ± 10%; 50Hz /60Hz
  - P_{DIS}..: 6.4 W. (Iin 31 mA
  - Connection: Three screw terminals (L,N,E).
    The unit requires protective earth.
- Outputs
  - Switched load: 1150VA (per output); any type of lighting load
  - Regulating load: 1..10Vdc; current sinking (max. 5mA)
  - Connection: 2* 5 screw terminals (L, N, E and +/ regulating)
    For wire 0.5 .. 2.5 mm^2
- Sensor interface
  - Power supply: +12Vdc ± 10%; 50mA
    + 5Vdc ± 10%; 15mA
  - for : - movement detector(s) (4 max.)
    - light sensor (1 max.)
    - IR receiver(s) (5 max)
  - Connection: Two modular sockets for :
    - branching connector or sensor cables with RJ 12 (6p/6c) modular plugs
      see Related equipment for type nrs.
- LED indicators
  - Mains power: 1 green LED indicates presence of mains power
    Service 1 yellow LED indicates configured state of unit
    - flash = unit is unconfigured
    - off = unit is configured (factory default)
    - on = unit is defective or has no application software
    2 green LED indicates the state of the outputs
- Communication
  - Bus cable: The bus must be double isolated from mains (4kV)
    Types LLC 5301/00 Helio bus cable, Belden 85102, Belden 8471
  - Connection
  - Service pin: At the rear of housing. Press to generate neuron ID over bus
- Safety
  - Housing protection class: IP 20
  - Insulation
    - sensor/bus part: Double insulation (4kV) towards mains.
      Supplementary insulation (2.5kV) towards regulating output
    - regulating part: Basic insulation (2kV) towards mains
    - Ballasts/dimmers: Connected regulating ballasts and dimmers must have at least basic insulation (2kV) towards connected mains
- EMC compliance
  - Immunity: EN 601547
  - Emission: EN 55015, EN 55022 Class B
- Weight: 1100 gr.

Packing data

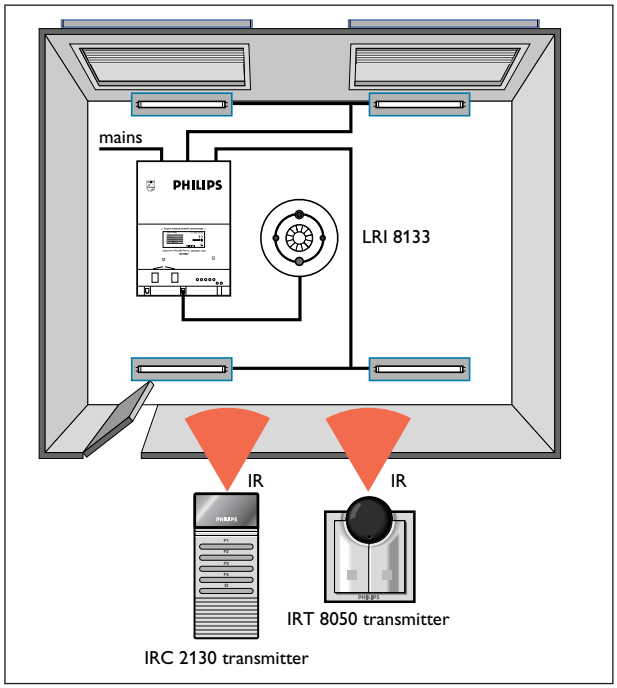
Type	Box dimensions (mm)	Qty	Material	Weight (g) net	Weight (g) gross
Unit box	220 x 157x 55	1	cardboard	1100	1200
Outer box	340 x 250 x 260	8	cardboard	9600	9800

Ordering data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 2
LRC 5042/00	1	9137 003 11803	87 11559 517278	87 11559 517285

LRC 5042/00
HELIO 2 way light controller

Detailed description



cellular office

Functionality

Figure 1 shows a typical application of the 2LS in an office environment. The 2LS is used in combination with the LRI 8133 multi sensor, and the LCC 8014 sensor cable.
In this example the following functions are used:
- Daylight linking
- Occupancy control
- Manual control

For each function the following parameters can be set

IR receiver

Dim speed
IR group addresses (A...G)
Switch off timer

The IR group address should correspond with the address of the transmitter. If the switch off timer is enabled lights will stay on for the specified period. This timer (stair case)is triggered by (IR) channel commands.

Movement detector

Hold timer

The hold timer is used to prevent transmission of temporarily state changes on the Hello bus.

Light sensor

Calibration factor
Min. transmission period
Max. transmission period
Send on delta

The maximum transmission period as well as the send on delta parameters are used to prevent unnecessary transmissions on the Helio bus. The minimum transmission period creates a "heartbeat" for reliable operations in case of the light value does not change (<send on delta).

Daylight linking

Daylight linking mode
Switch off level
Switch off delay
Switch on level
Switch on delay
Maximum LUX level
Maintained level
Slave offset

Daylight linking is possible in two modes
- Daylight switching, lights will not regulate, but only switch off and on.
- Daylight regulating, lights will regulate and switch off and on.

It is possible to set the light levels and delays for automatic switch and/or off, or to disable the function.
The maximum LUX level is the light level when the luminaires are set to 100% light output, and no daylight is present.
The maintained level is the light level that will be maintained during daylight regulation. Manual commands, clock, default on, or other settings can effect this level, also known as reference level. For example a maintained level of 500 lux, and a preset of 50% will result in a reference level of 250 lux.

Occupancy control

Delay timer
Off value
Stand-by timer
Stand-by value
Occupancy priority
Operation mode

Lights will always switch off (or will be set to the off level if set) if no presence is detected and the switch off delay timer has elapsed. If presence is detected the lights will switch on according to following scheme.

Occupancy priority

No switch on
Conditional switch on
Always switch on

In all modes lights will be switched off when absence is detected.
In the "No switch on" mode, lights must always be manually switched on. In the "Always switch on" mode, light are always automatically switched on when presence is detected.
In the conditional mode lights will only be automatically switched on when presence is detected and the lights were previously switched off by occupancy control.

Occupancy operation mode

Normal operation
Enabled/Disabled by clock
ON/OFF value by
Clock

Except for the normal mode, as described before, two other modes are available. By means of clock commands it is possible to enable/disable the (conditional and always) switch on modes.

Occupancy operation modes (continued)

It is also possible to change the switch on and off values by means of clock commands.
Combinations of the three modes are not possible

Occupancy control (continued)

Except for the normal switch off delay function it is also possible to use a stand-by function. After the normal switch off delay, lights can be dimmed for a certain period of time, before they are actually switched off.