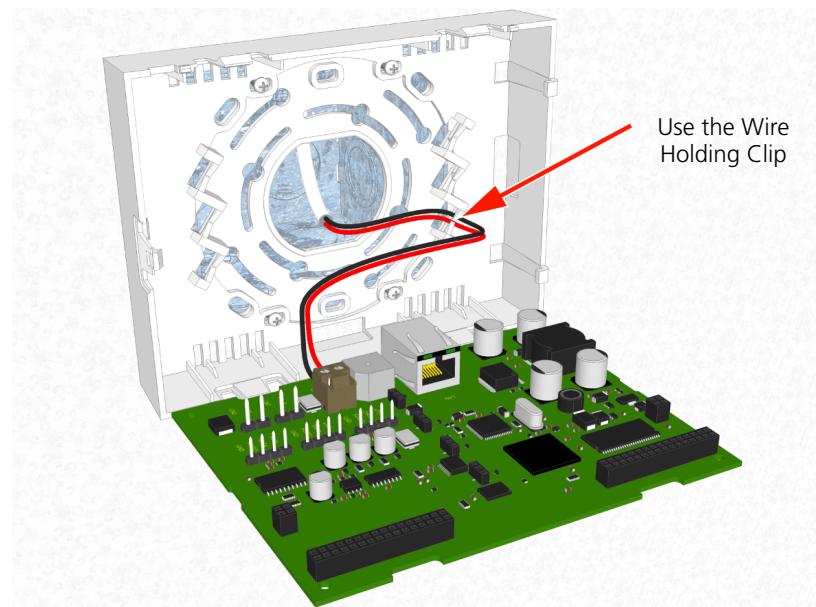


5.5.1 Connecting the 24Vdc Power Supply

The 24Vdc power supply uses a 2-pole connection terminal as described in section [5.4.2 on page 33](#). The connection point on the room controller circuit board for the power supply is shown in section [5.3.2 on page 28](#).

The power supply wires should be guided around the sides of the room controller housing and held in place by the wire holding clip, as shown in the following illustration:

Figure 36. Connecting the 24V/DC power supply



The connection point on the room controller circuit board for the power supply of the NIRC3 is shown in section [5.3.5 on page 37](#).

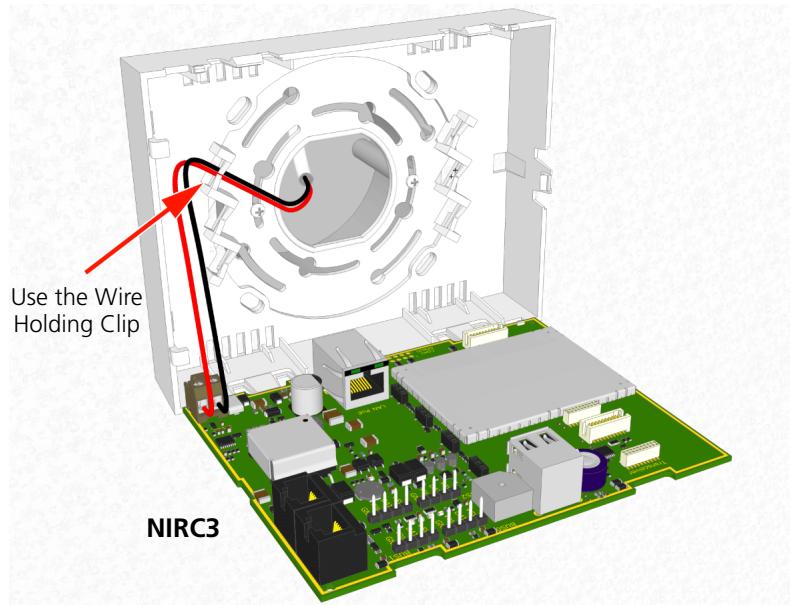


Figure 37. NIRC3 - Connecting the 24V DC power supply

Note: An external power connection is not required when Power over Ethernet - PoE is used to power the NIRC3.

5.5.2 Connecting the Power Supply and Corridor Lamp Power Outputs

The room controller supports two corridor lamps and each has a 2-pole connector similar to the 24Vdc power supply, as described in section [5.4.2 on page 33](#). The connection points on the room controller circuit board for the power supply and corridor lamps are shown in section [5.3.2 on page 28](#).

The power supply wires and the corridor lamp power supply wires should be guided around the sides of the room controller housing and held in place by the wire holding clip, as shown in the following illustration:

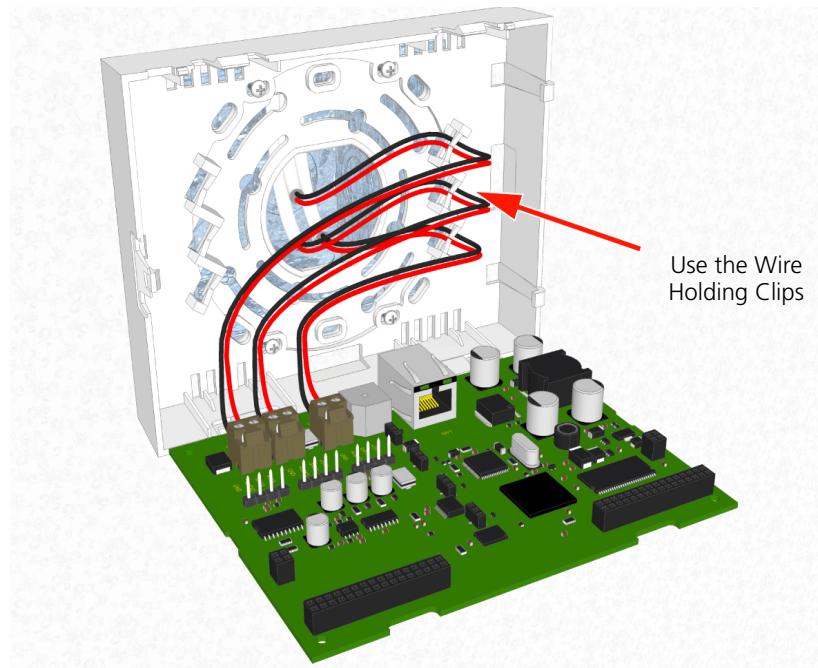


Figure 38. Power supply and corridor lamp power connections

NIRC3

The corridor lamp (NICL2) that must be used with the NIRC3 is powered directly from the 5.5V room bus power and does not require a separate 24 volt power connection, therefore the NIRC3 is not equipped with the 24 volt power outputs.

IMPORTANT: Because the NIRC3 does not have 24V power outputs, the corridor lamp (NICL) should not be connected to the NIRC3. Only connect corridor lamps (NICL2) to the NIRC3 room buses.

5.5.3 Connecting the Room Bus

The room bus uses a 4-pole connection terminal as described in section [5.4.1 on page 31](#). The connection point on the room controller circuit board for the room bus is shown in section [5.3.2 on page 28](#).

The room bus wires should be guided around sides of the room controller housing and held in place by the wire holding clip, as shown in the following illustration:

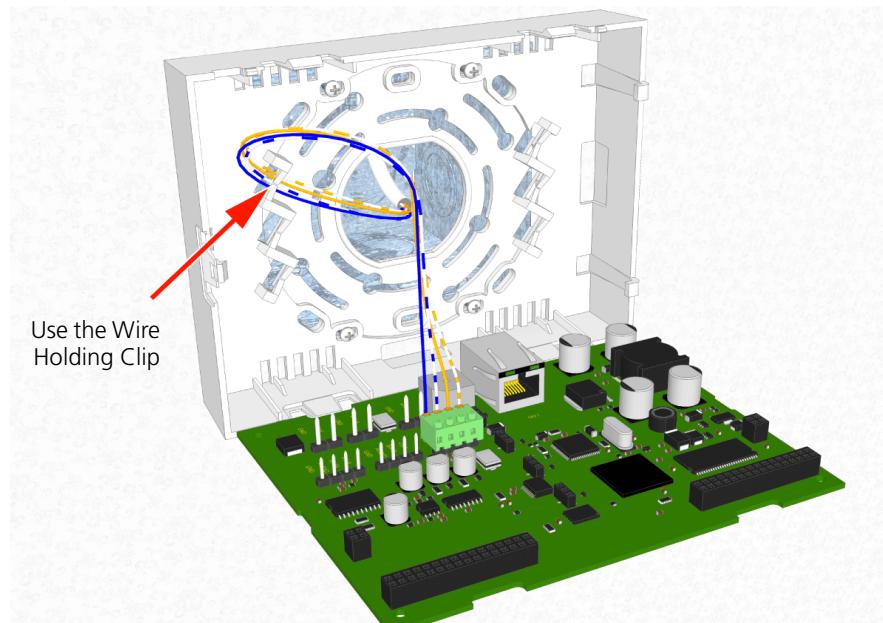


Figure 39. Connecting the room bus

The connection point on the room controller circuit board for the room bus of the NIRC3 is shown in section [5.3.5 on page 37](#)

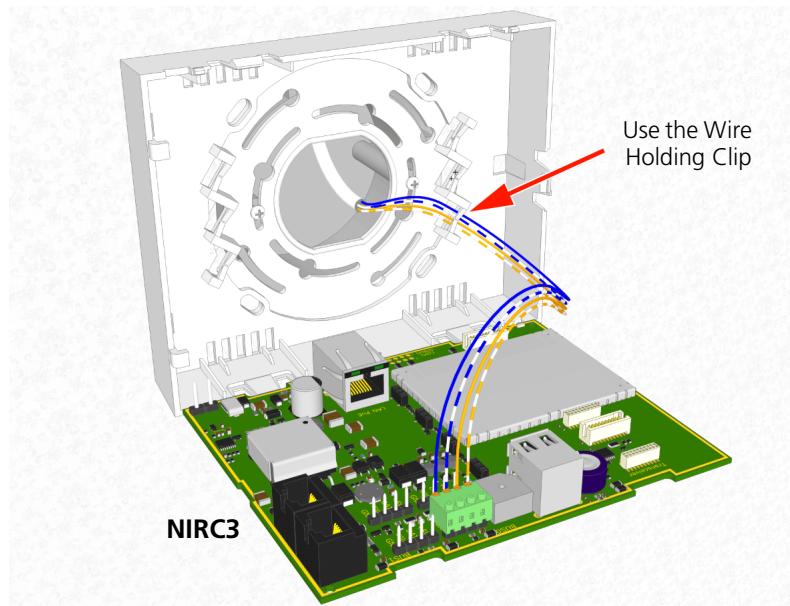


Figure 40. NIRC3 - Connecting the room bus

5.5.4 Connecting Multiple Room Buses

The IP room controller supports three room buses and each has a 4-pole connection terminal which is wired as described in section [5.4.1 on page 31](#). The connection points on the room controller PCB for the room buses are shown in section [5.3.2 on page 28](#).

The room bus wires should be guided around the sides of the room controller housing and held in place by the wire holding clip, as shown in the following illustration:

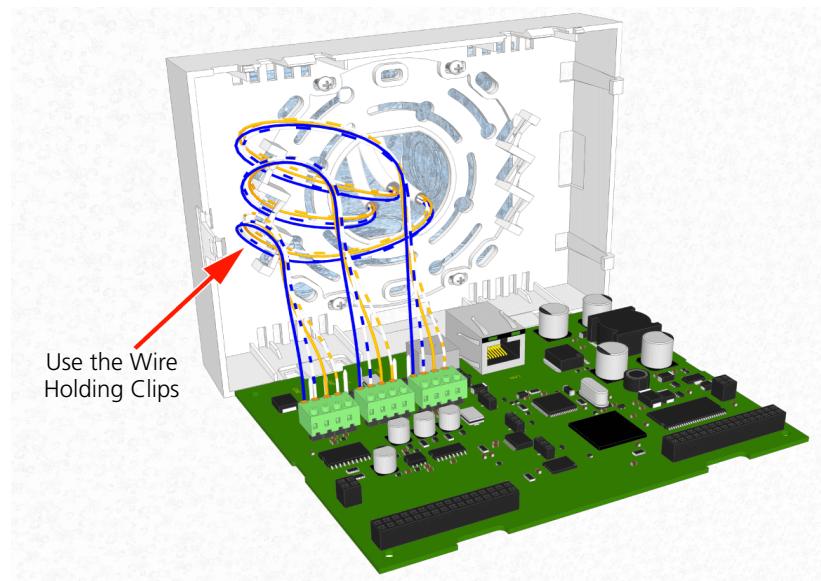


Figure 41. Connecting multiple room buses

The connection points on the room controller PCB for the room buses of the NIRC3 are shown in section [5.3.5 on page 37](#).

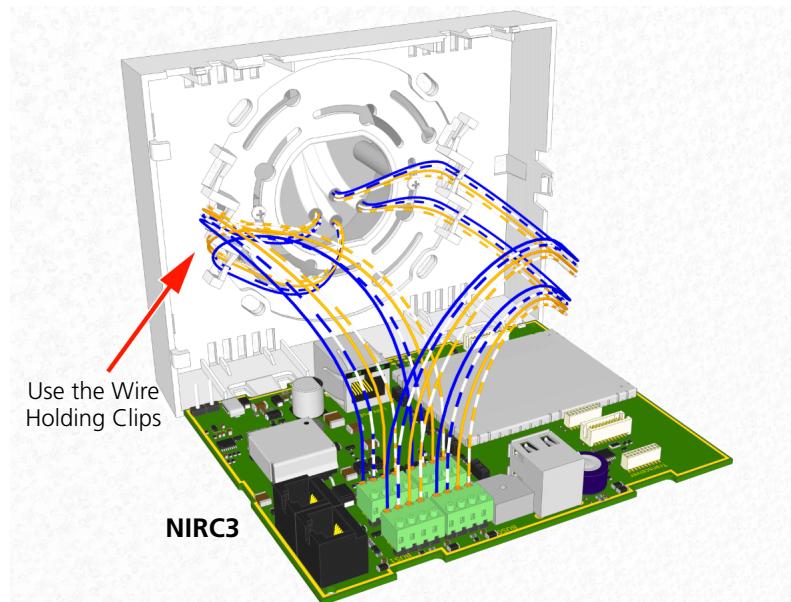


Figure 42. NIRC3 - Connecting multiple room buses

5.5.5 Connecting LAN Cable

The LAN cable has an RJ45 plug which connects to the socket on the room controller printed circuit board shown in section [5.3.2 on page 28](#). The LAN cable should not be guided through the wiring clips inside the room controller housing. It should be plugged directly into the RJ45 connector on the printed circuit board with enough cable to avoid straining the LAN connection.

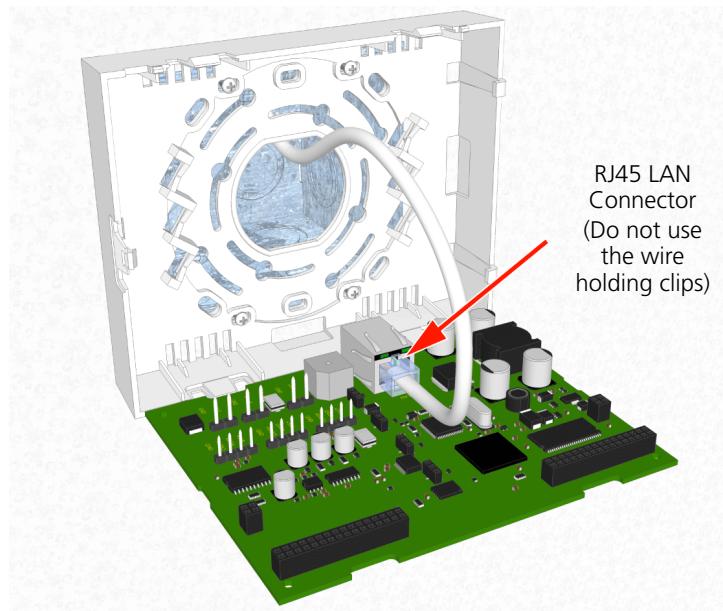


Figure 43. Connecting the LAN cable

5.5.6 Fully Wired IP Room Controller

The following illustration shows how the room controller should look with all wiring connected when external power is used:

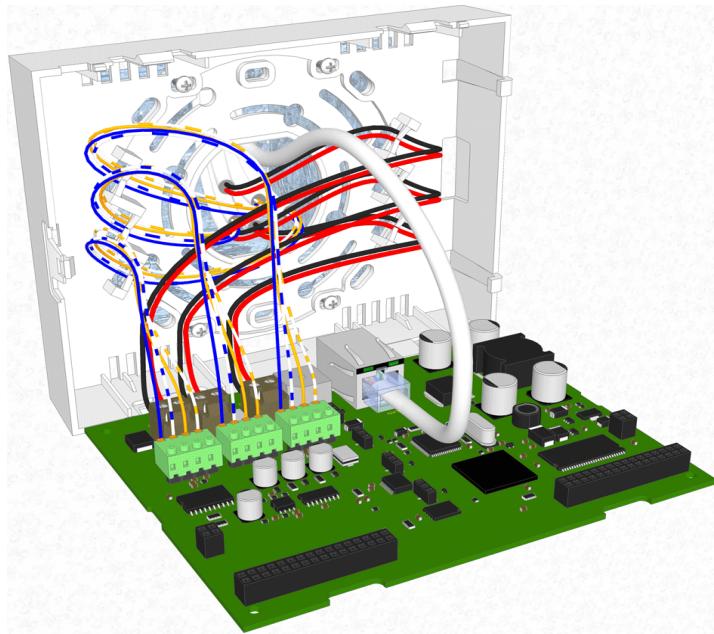


Figure 44. Fully Wired IP room controller

The following illustration shows how the room controller (NIRC3) should look with all wiring connected when external power is used:

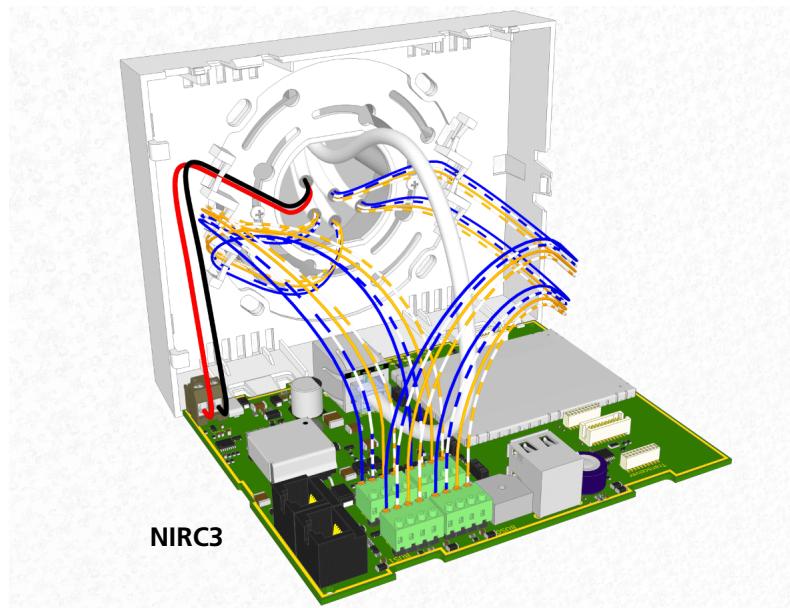


Figure 45. Fully Wired room controller - NIRC3

5.6 LED Lamp Boards

The LED lamp board contains four high intensity LED lamps which are used in the corridor lamp of the room controller and corridor lamp. The three pins in the back side of the board are used to connect the LED lamp board through holes in the back side of the room controller or corridor lamp printed circuit board. The room controller and the corridor lamp each accept up to four LED lamp boards.

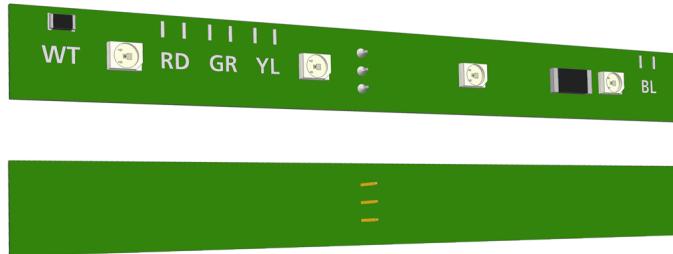


Figure 46. LED lamp board front and back view

Note: The LED lamp boards are not delivered as part of the IP room controller and therefore, must be ordered separately.

The LED lamp board is available in five colors: red, green, yellow, white and blue. The LEDs are used for the signaling of various types of call, as well as staff presence and faults. The functions of the LEDs are determined by the system setup.

The color of the LEDs is determined during manufacture and cannot be changed. A resistor on the component side (front) of the board indicates the color of the LEDs, as shown in the following illustration:



Figure 47. LED lamp boards: white, red, green, yellow and blue

The LED lamp boards can be plugged into any of the LED connection points on the room controller board and the corridor lamp but it is normal to have each color in the same position in every room controller board. The functioning of the LEDs colors is determined by the system setup.

5.6.1 Auxiliary Lamp Connection - NILD2

The green LED board (NILD2-GAA) has a galvanically separated output that can be used to connect to an auxiliary lamp. It has a maximum switching capacity of 0.4A at 60V peak.

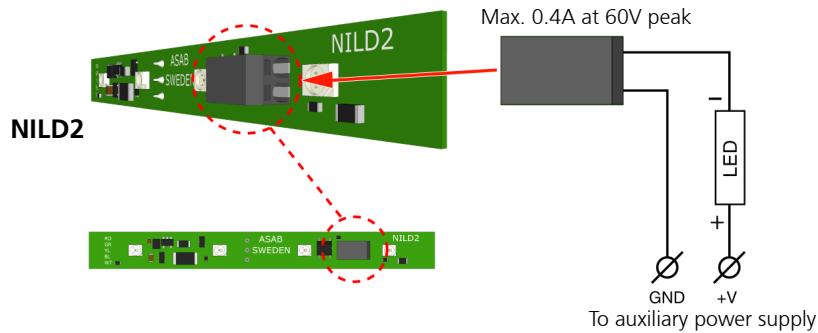


Figure 48. External corridor lamp connections through the NILD2-GAA

IMPORTANT: In order to retain the galvanic separation, it is not allowed to connect the GND (-) of the auxiliary power supply to the GND (-) of the NIRC3.

5.6.2 Connecting the Wires to the NILD2-GAA

The 2-pole connector terminal on the green LED lamp board (NILD2-GAA) has two terminals with one connection point at each terminal. A connection point accepts one solid wire of maximum wire size 0.5MM² (0.8mmØ). To connect the wires first strip 6 mm of the insulation from the end of each wire which is to be connected.

After stripping the wire, insert the wire in the appropriate opening of the connection point by pressing the wire firmly into the terminal, as illustrated below:

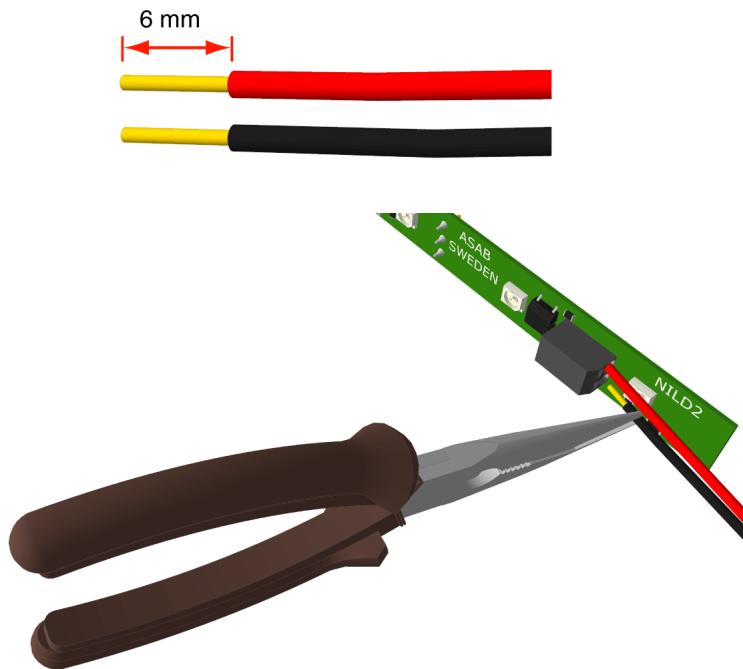


Figure 49. Connecting the wires of an external lamp

Note: Each connection point in the connector terminal accepts only one solid wire. Maximum wire size 0.5MM² (0.8mmØ).

5.6.3 Installing the LED Lamp Boards on the IP Room Controller Board

On the back side of the IP room controller PCB there are the four sets of through-board connections for the LED lamp boards. Each through-board connector has three holes which accept the three connecting pins on the LED lamp board.

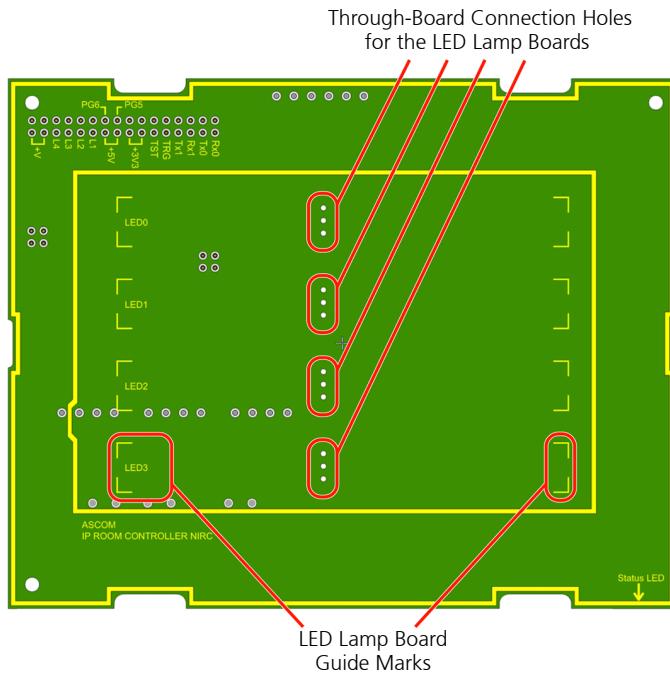


Figure 50. LED through-board connectors and guide marks

The LED lamp connection points are labeled LED0, LED1, LED2 and LED3. Any color LED board can be plugged into any of the connection points in the IP room controller. The appropriate position of the LED color is determined during the system setup.

Caution: The pins on the LED lamp board are not in the center of the board so it is important to make sure that the LED lamp board lines up with the guide marks on the IP room controller PCB when the pins are inserted.

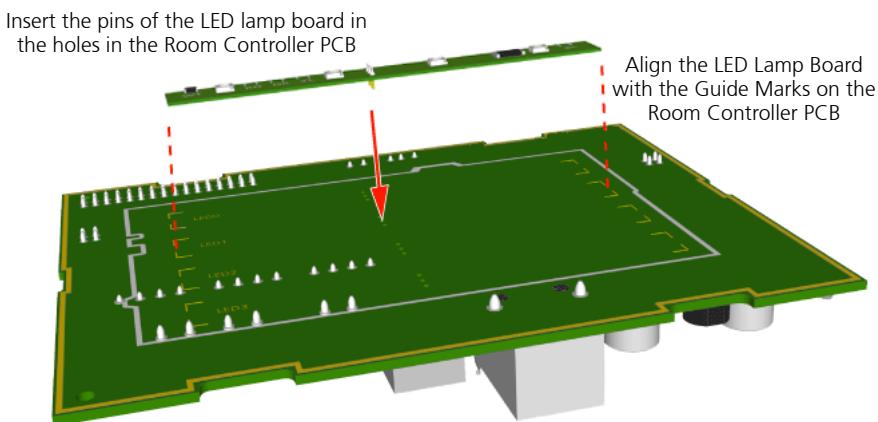


Figure 51. Plugging LED lamp board into the room controller PCB

With the three pins inserted and the LED lamp board lined up with the guide marks, firmly press the LED lamp board into the IP room controller PCB. Repeat the procedure on the other required LED lamp

boards.

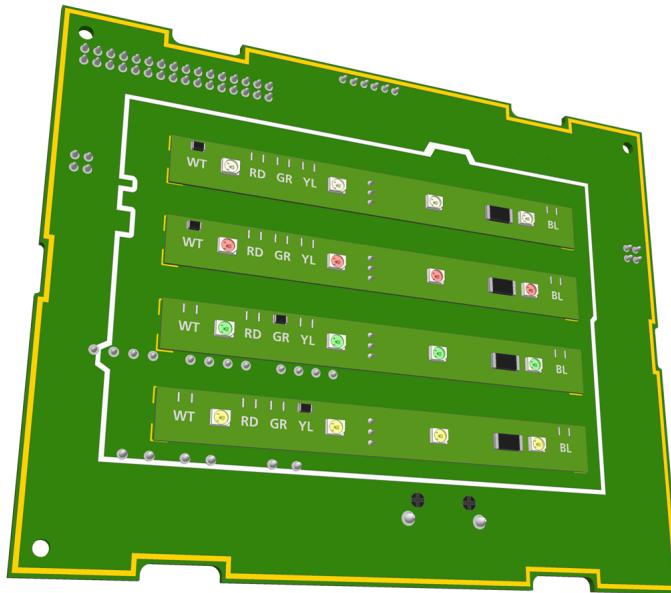


Figure 52. NIRC room controller PCB with 4 LED lamp boards

Example of the second generation LED lamp boards (NILD2) mounted on the NIRC3.

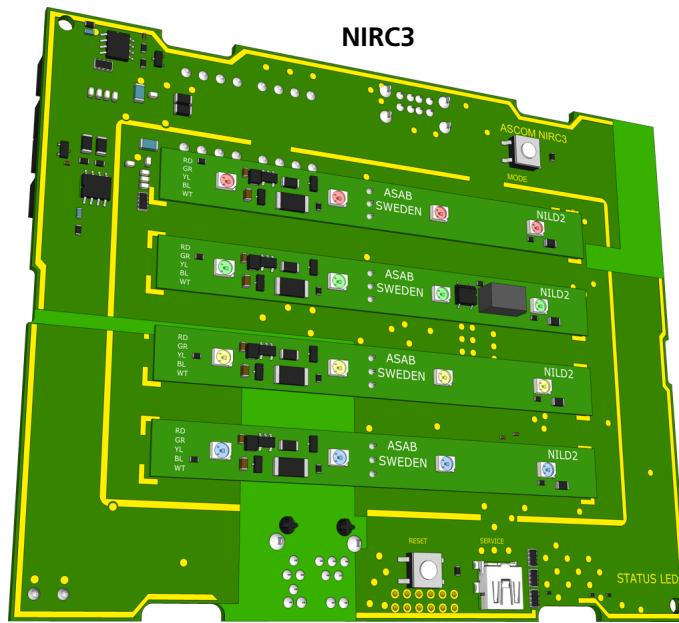


Figure 53. NIRC3- room controller PCB with 4 LED lamp boards

5.6.4 External Corridor Lamp Connections

The NIRC has a 6-pole connector for connection of an external corridor lamp with up to four separate LEDs.

The outputs L1, L2, L3 and L4 are parallel circuits to LED connections on the NIRC printed circuit board. Each external LED must be connected between the lamp connector (L1, L2, L3 or L4) and +V on the 6-pole connector.

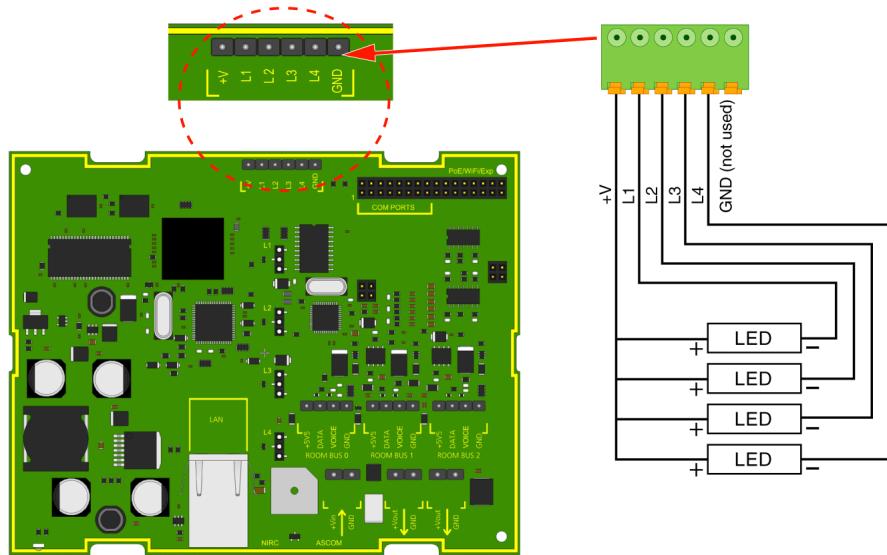


Figure 54. External corridor lamp connections of the NIRC

Caution: The maximum load on each external LED circuit is 60mA.

IMPORTANT: The maximum load on each external LED circuit is 60mA.

The room controller (NIRC3) circuit board does not support an external corridor lamp directly, however an external lamp can be connected through a green LED lamp board (NILD2-GAA) which has a galvanically separated output with a maximum switching capacity of 0.4A at 60V peak.

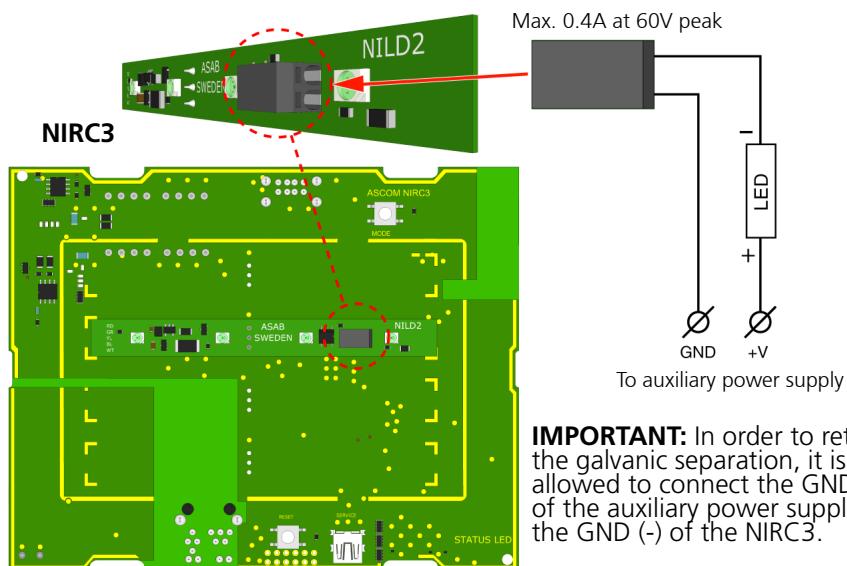


Figure 55. External corridor lamp connections through the NILD2-GAA

See "Auxiliary Lamp Connection - NILD2" on page 52. for detailed information.

5.7 Corridor Lamp (NICL)

The Corridor Lamp (NICL) is controlled by the IP room controller (NIRC only) and one IP room controller can support two corridor lamps. Each Corridor Lamp is connected to one of the three room buses of the IP Room Controller and it always has the fixed address 5.

IMPORTANT: *The room controller NIRC3 does not support the 24 volt output that is required to power the NICL, therefore the NICL should not be used in combination with the NIRC3.*



Figure 56. The teleCARE IP corridor lamp

The Corridor Lamp consists of a back box, a printed circuit module, a cover plate and translucent dome cover that can accept up to four LED boards, as shown in the following illustration:

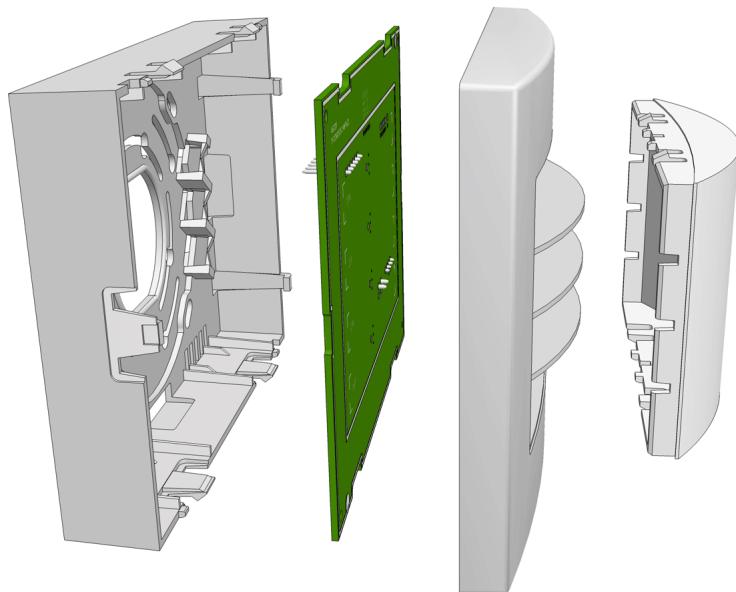


Figure 57. Corridor lamp (NICL) parts

5.7.1 Installing the Corridor Lamp

When installing the Corridor Lamp the first step is to separate the top section (cover, PC board and lamp dome) from the housing. To do that simply grip the top edge of the cover and pull it away from the housing, as shown in the following illustration:

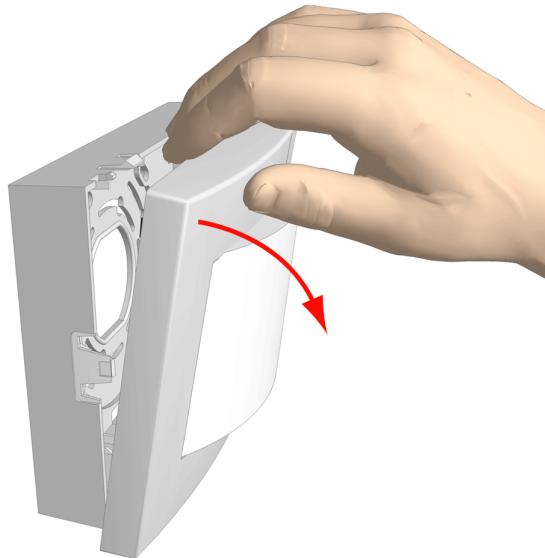


Figure 58. Separating the top section from the housing

5.7.2 Removing the Corridor Lamp Printed Circuit Board

To remove the circuit board from the housing, press the holding clip outwards until it releases the circuit board, as shown in the following illustration:

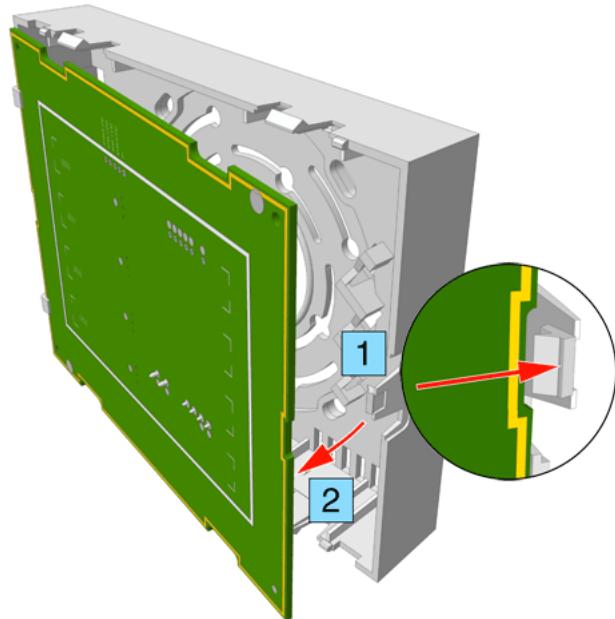


Figure 59. Removing the circuit board from the housing

With the printed circuit board released from the holding clip, partly rotate the circuit board and remove it from the housing.

5.7.3 Corridor Lamp Housing

The corridor lamp has the same housing as used for the IP room controller which is designed to be surface mounted. Refer to section [5.2.8, Room Controller Housing on page 24](#) for details of mounting

the housing.

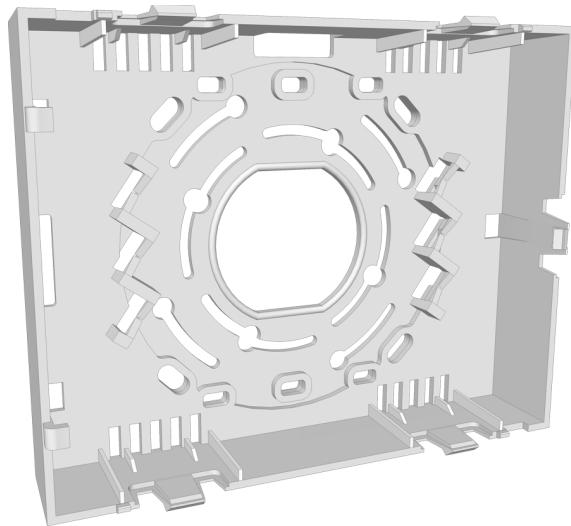


Figure 60. IP room controller housing

5.7.4 Corridor Lamp Electrical Connections

The wiring between NIRC Room Controller and the NICL Corridor Lamp consists of the teleCARE IP four-wire room bus plus two additional wires for 24Vdc to power the corridor lamp LEDs.

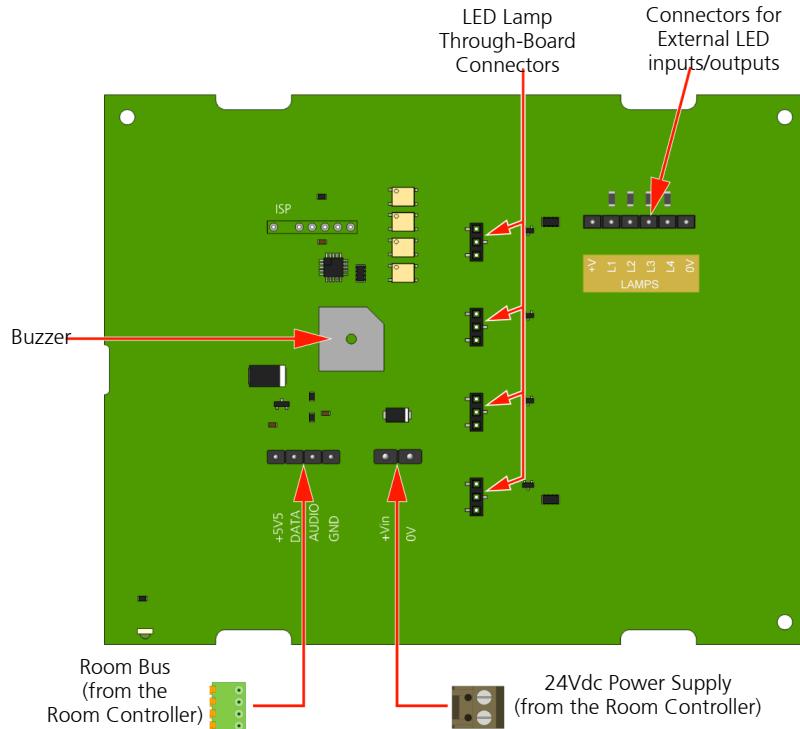


Figure 61. Corridor lamp PCB component side electrical connections

5.7.5 4-Pole Connector Terminal

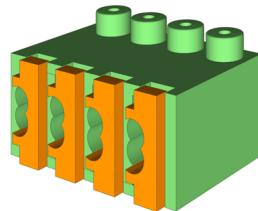


Figure 62. 4-pole connector terminal

The 4-pole connector terminal is used for connecting the room bus. It has a screw-less “spring-cage” connection technique and each terminal has two connection points.

The designation of the required four wires is as shown in the following illustration.

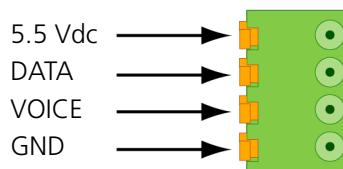


Figure 63. 4-pole connector terminal with the room bus

Preparing the wires and connecting the 4-pole connection terminal is described in section [5.4.1, 4-Pole Connector Terminal \(NICT-4AA\) on page 31](#).

5.7.6 2-Pole Connector Terminal

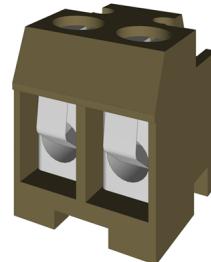


Figure 64. 2-pole connector terminal

The 2-pole connector terminal is used for connecting the 24Vdc power supply from the room controller to the corridor lamp. The designation of the required power supply wires is as shown in the following illustration.

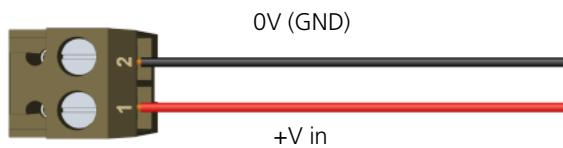


Figure 65. 2-pole connector terminal wiring

Preparing the wires and connecting the 2-pole connection terminal is described in section [5.4.2, 2-Pole Connector Terminal \(NICT-2BA\) on page 33](#).

5.7.7 Connecting the Corridor Lamp Printed Circuit Board

When preparing the wiring for connecting the printed circuit board of the corridor lamp make sure that the power supply wires and the room bus wires are stripped of the cable outer jacket and that the wires are long enough, as described in section [5.3, Preparing the Room Bus and Power Cables on page 26](#).

It is best to arrange the wires and cables neatly and securely inside the housing. The power wires and the room bus should be guided around the sides of the corridor lamp housing and held in place by the wire holding clips.

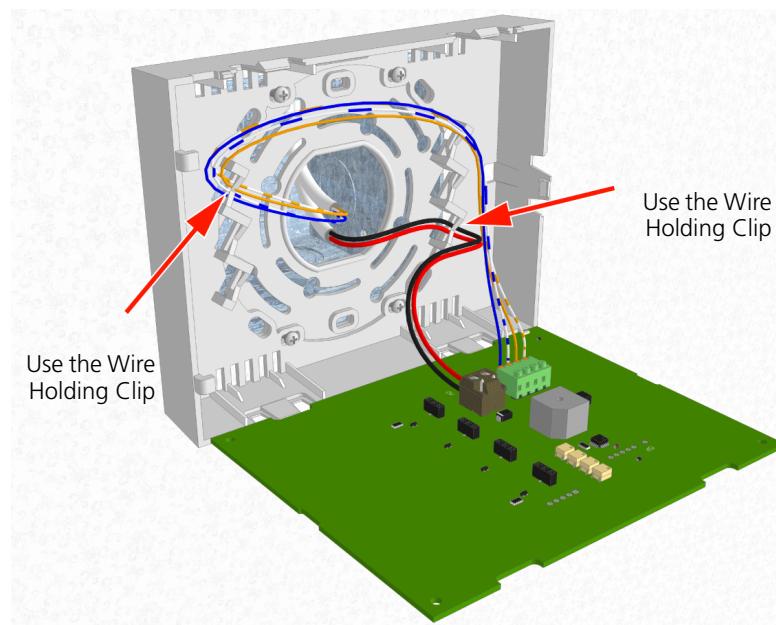


Figure 66. Connecting the corridor lamp

5.7.8 LED Lamp Boards for the Corridor Lamp

Note: The LED lamp boards are not delivered as part of the corridor lamp and therefore, must be ordered separately.

The LED lamp board contains four high intensity LED lamps which are used for the signaling of various types of calls including staff presence and system faults.

The three pins in the back side of the LED board are used to connect the LED lamp board through holes in the back side of the corridor lamp printed circuit board. The corridor lamp accepts up to four LED lamp boards.

The LED lamp connection points are labeled LED0, LED1, LED2 and LED3. Any color LED board can be plugged into any of the connection points on the IP room controller. The appropriate position of the LED color is determined during the system setup.

The LED lamp board is available in five colors: red, green, yellow, white and blue. The functions of the LEDs are determined by the system setup.

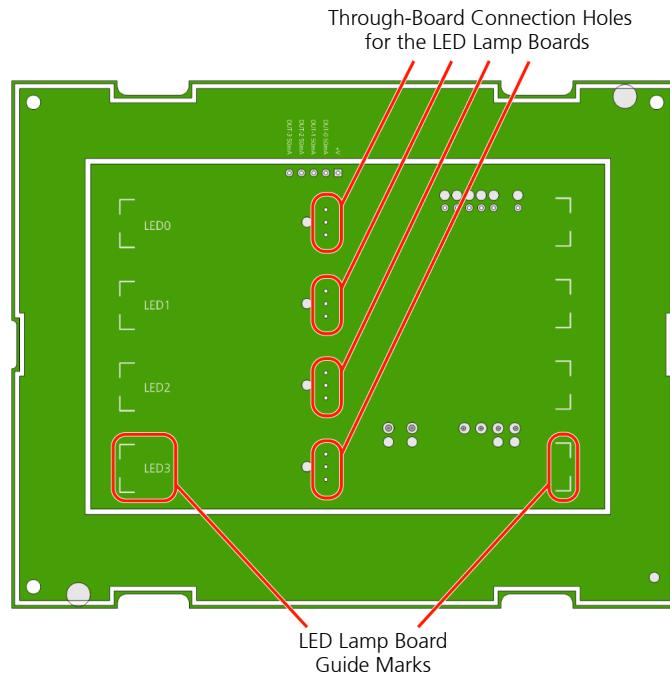


Figure 67. LED through-board connectors and guide marks

For full details of the LED lamp boards refer to section [5.6, LED Lamp Boards, page 43](#).

5.7.9 Connecting the LED Lamp Boards

To connect the LED lamp board, insert the three pins of the LED lamp board into the appropriate three holes in the back side of the corridor lamp PCB.

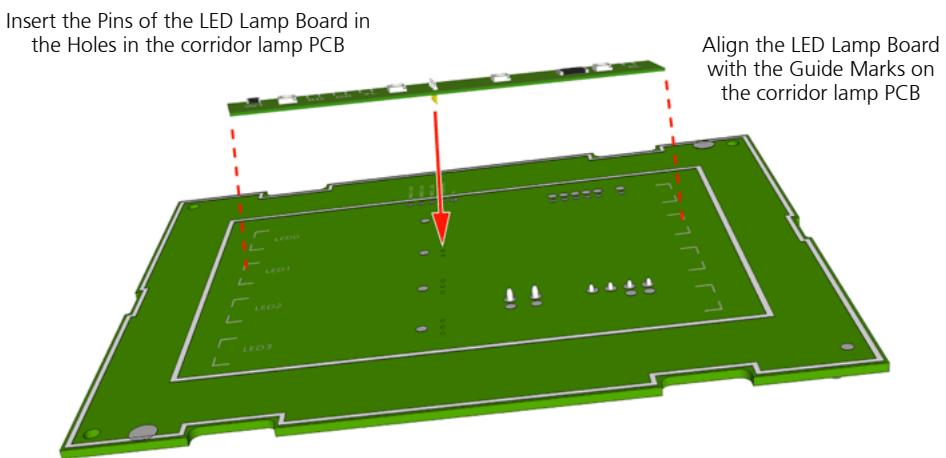


Figure 68. Plugging LED lamp board into the corridor lamp PCB

With the three pins inserted and the LED lamp board lined up with the guide marks, firmly press the LED lamp board into the corridor lamp PCB. Repeat the procedure on the other required LED lamp boards.