Monique Castonguay Design

Under Cabinet Lighting

Bottom Trim Installation
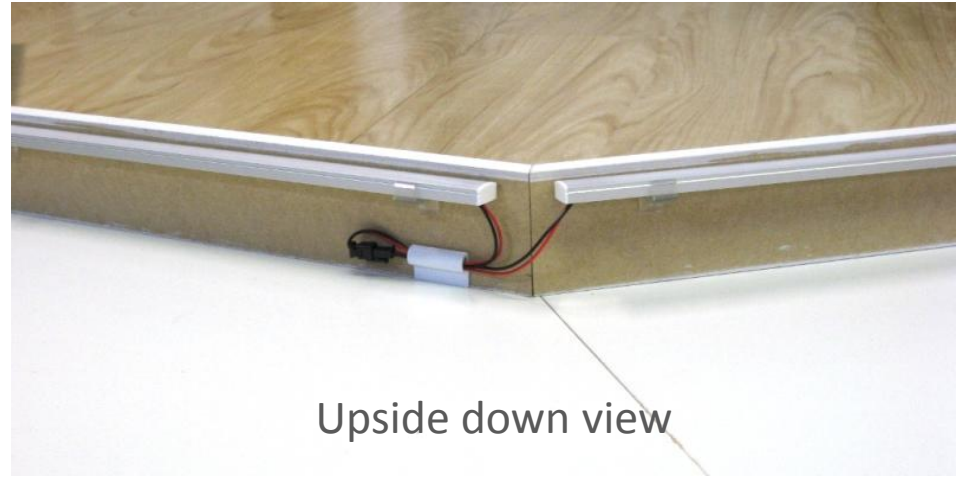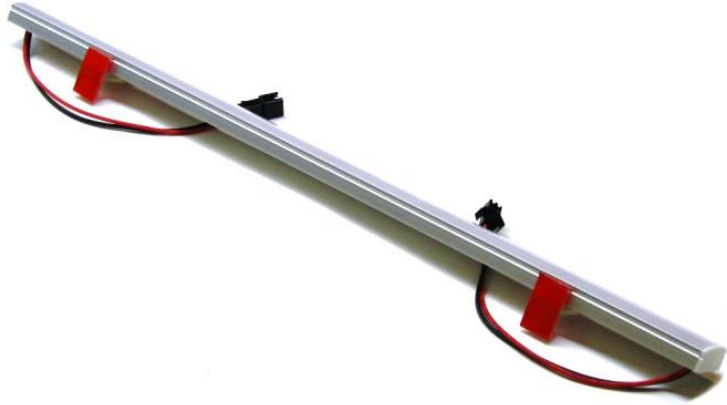### *Trim width ≥ 1 inch*

iLuxx
LED Lighting

UC1 Series

Bottom trim

In this project, we'll use the UC1 Series from iLuXx Lighting. This Series is specifically designed to be installed on the bottom trim of the cabinets. Works best on bottom trim width ≥ than 1 inch.

UC1 Series

Upside down view

Using the bottom trim is a great way to conceal the light source. UC1 should be your first choice for cabinets having a bottom trim width of 1 inch or more.
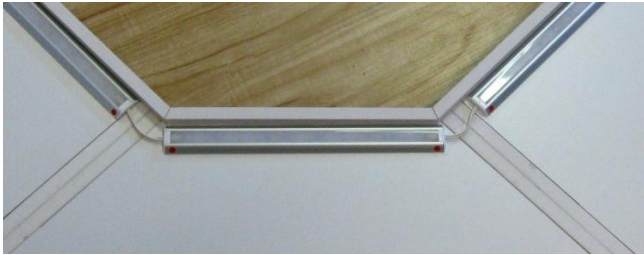

≥1''

8,9 | 8

Dim: mm

17,1
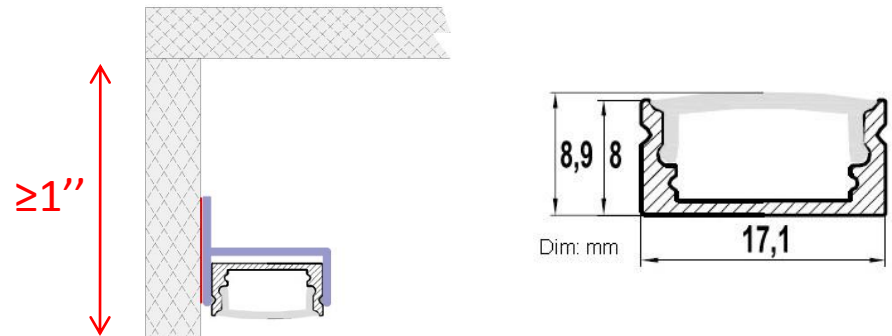
Other mounting options
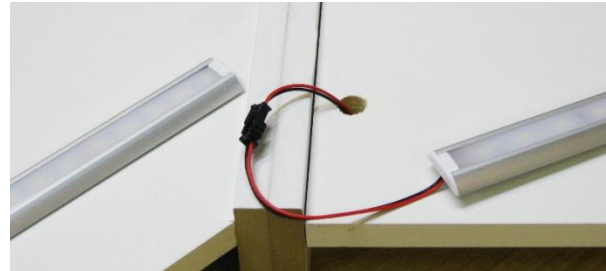
UC2A Series

Surface mount – Ideal for installation behind a narrow bottom trim

UC2 Series

Surface mount - Ideal for cabinet manufacturer using a dual bottom panel

UC3 Series

Recessed mount - Ideal for cabinet manufacturer using a dual bottom panel

UC1 Series
Installation instructions

Every kitchen is unique and therein lies the challenge. The installation process is simple but requires some planning.

The following will show the different steps of a typical installation and help you plan the project.

Presentation Content

- **Project Overview:** required items
- **Electrical Diagram**
- **Step 1:** how to power the system – 4 options
- **Step 2:** luminaires installation
- **Step 3:** getting power to the luminaires
- **Step 4:** test the system
- **Step 5:** remote controller installation
- **How to Order:** luminaires length
- **How to Order:** light output – 2 options
- **How to Order:** light color – 2 options
- **How to Order:** power supply selection
- **How to Order:** controller selection
- **How to Order:** accessories
- **How to Order:** summary

Project Overview: required items

24 Vdc

120 Vac
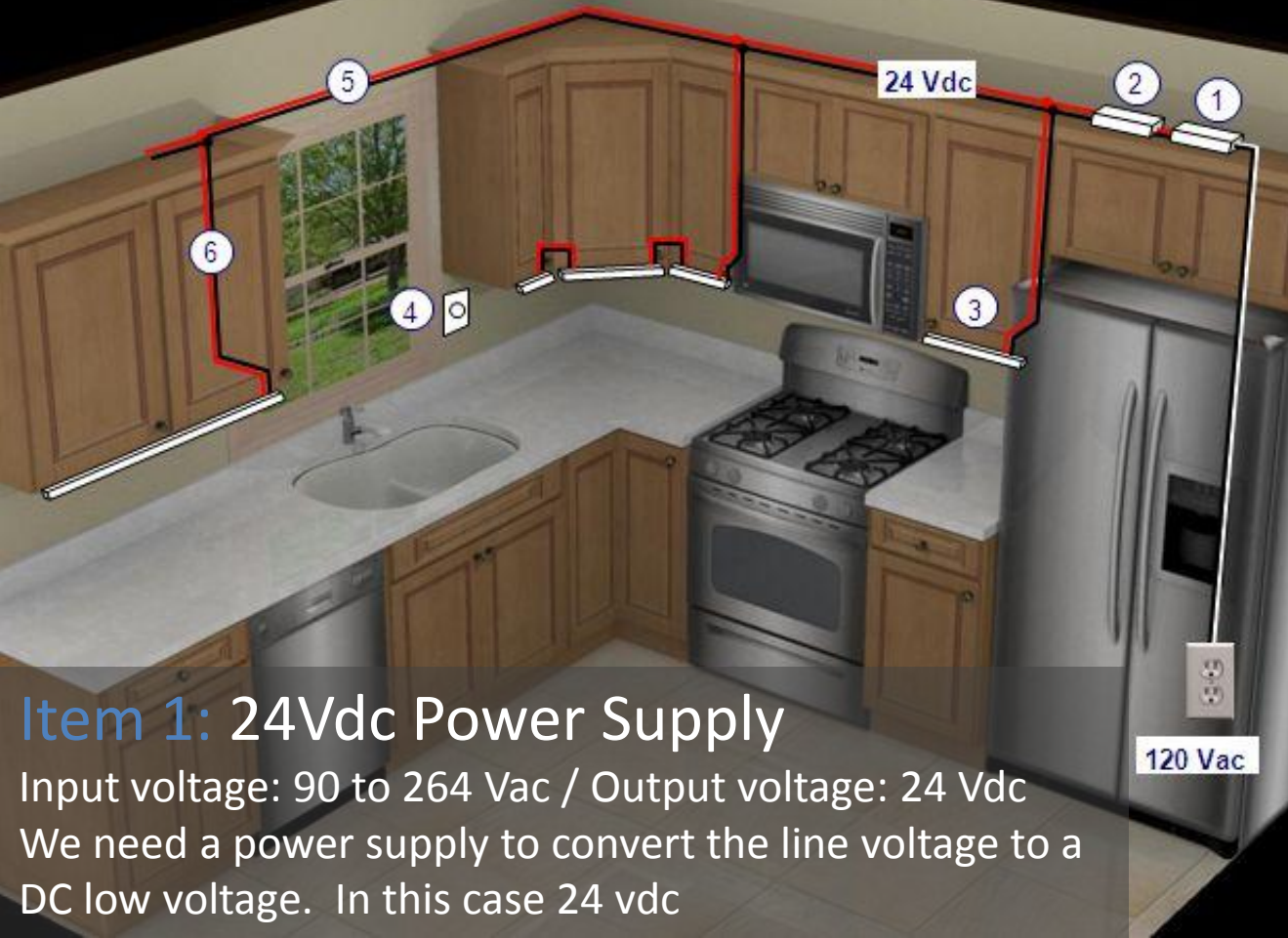
Item 1: 24Vdc Power Supply
Input voltage: 90 to 264 Vac / Output voltage: 24 Vdc
We need a power supply to convert the line voltage to a
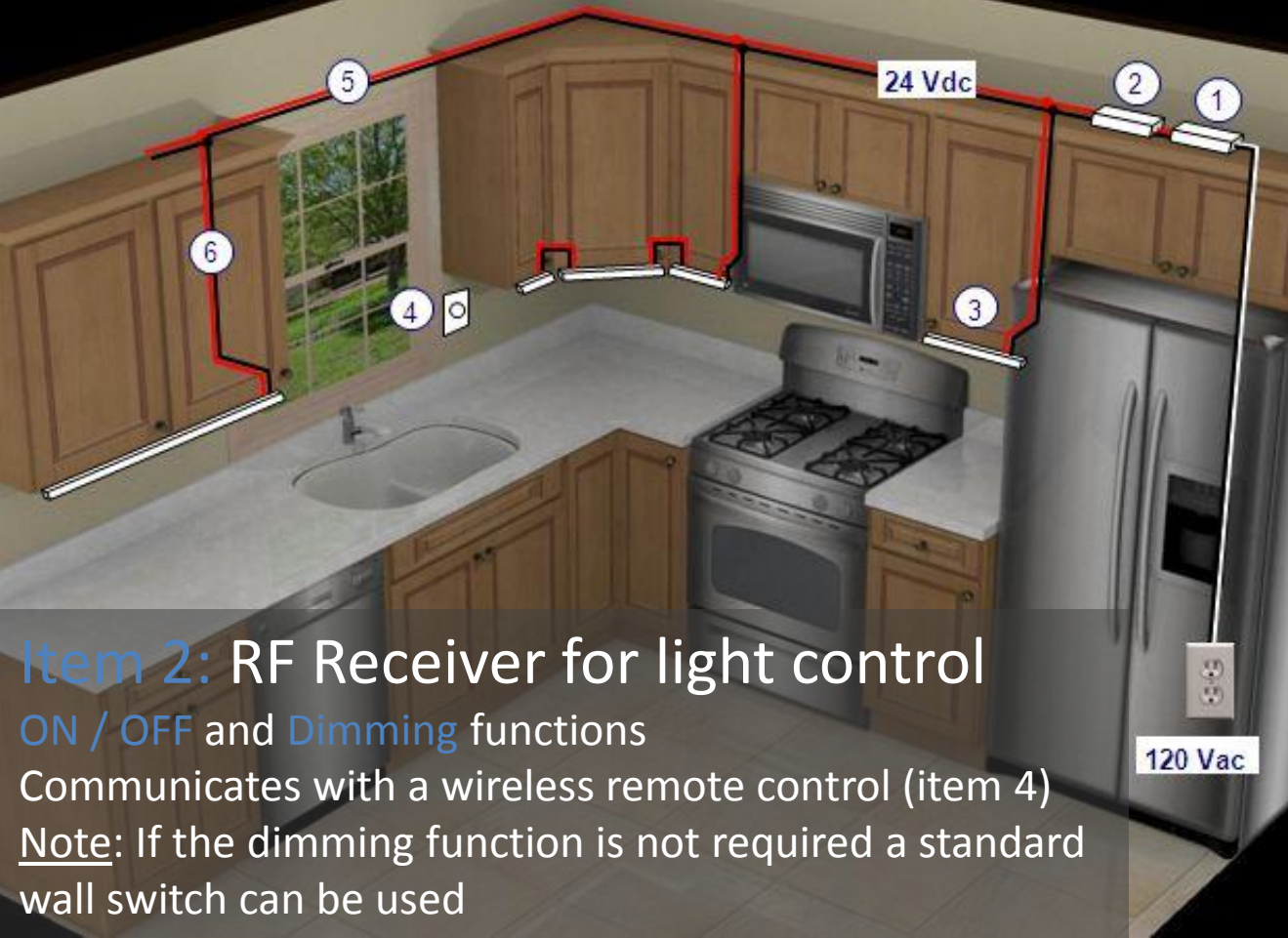DC low voltage. In this case 24 vdc

Example

☐ LPS CE cᴿᵁus

LPV Series from Mean
Well. Class II power
supplies with good
quality and low cost.
Available at
www.iluxxinc.com

Project Overview: required items

5

24 Vdc

2   1

6

4

3

120 Vac

Item 2: RF Receiver for light control
ON / OFF and Dimming functions
Communicates with a wireless remote control (item 4)
Note: If the dimming function is not required a standard wall switch can be used

Example

SR-2501NS
LED Dimmer
PRI:
Uin=12-36VDC
Iin=8.3A
SEC:
Uout=1x(12-36)VDC
Iout=1x8A
Pout=1x(96-288)W
TEMP RANGE:-20℃-+50℃
GND
Push Switch
tc=75℃
0.5-1.5mm²
6-7mm
SEC
+
−
+
−
INPUT
12-36VDC
Learning Key
CE RoHS
SUNRICHER
+
−

The no 1 reason to choose RF technology in this application:

Flexibility of installation
• No wiring between receiver and remote
• The remote is battery operated
• The RF signal goes through walls, doors, furnitures, etc
Available at www.iluxxinc.com

Project Overview: required items

24 Vdc

120 Vac

Item 3: UC1 Series Luminaires
Solid State LED device built to provide plenty of light on the work surface

UC1 Series

Features
• Hi-Output (126 or 70leds/meter)
• Many lengths available
•Fully dimmable
• Available in warm white (3000K) and neutral white (4000K)
• Super efficient
• Long lasting (50 000 hours +)
• Built with UL certifed LED engine
Available at www.iluxxinc.com

Project Overview: required items

24 Vdc

120 Vac

Item 4: Wireless RF Remote Controller
ON / OFF and Dimming functions
Communicates with the receiver (item 2)

Example

The no 1 reason to choose RF technology in this application:

Flexibility of installation
• No wiring between receiver and remote
• Battery operated
• The RF signal goes through walls, doors, furniture, etc
Available at www.iluxxinc.com

Project Overview: required items

Examples

24 Vdc

120 Vac

Item 5: Electrical Wiring
We recommend using a multi-strands 18AWG hook-up wire.

Item 6: Power Harness
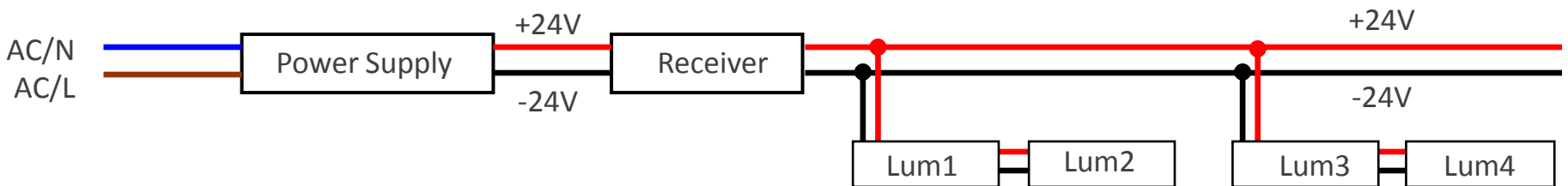Wire assembly with mating connector for the luminaires

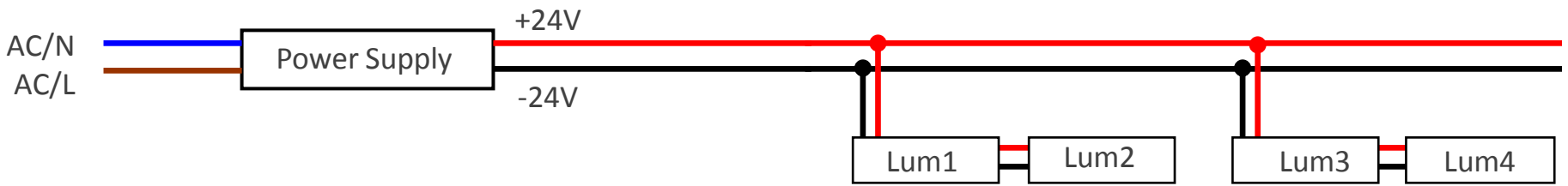*Both items available at*
www.iluxxinc.com

Electrical Diagram

With optional receiver

AC/N

AC/L

Power Supply

+24V

Receiver

-24V

+24V

-24V

Lum1   Lum2

Lum3   Lum4

Without receiver

AC/N

AC/L

Power Supply

+24V

-24V

Lum1   Lum2

Lum3   Lum4

Working with low DC voltage

Being exposed to a voltage of 24Vdc constitute a minimal risk to humans however, under certain conditions, you may be exposed to an electrical shock. Disconnect the power supply before making any electrical connections.

Make sure the polarity is respected when making electrical connections. Failure to do so may damage the luminaires or receiver.
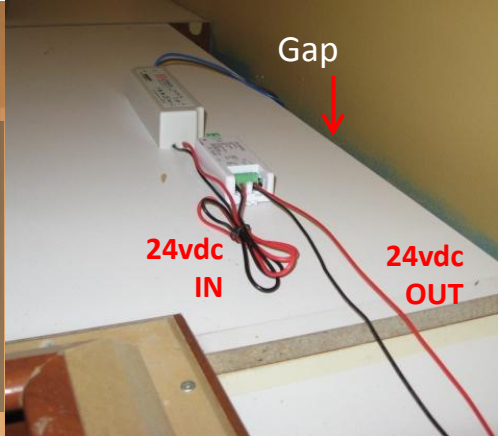
Step 1: How to power the system – 4 options for an existing kitchen

Power supply + Receiver

Free outlet

Option 1

Use the free outlet behind the fridge and hide the power supply (+ receiver) on top of the cabinets over the fridge. Usually there's a gap behind the cabinets located over the refrigerator. Use that to run the wires.

Gap

24vdc IN

24vdc OUT

Variant: Power supply and receiver installed directly on the wall behind the refrigerator.

Step 1: How to power the system – 4 options for an existing kitchen
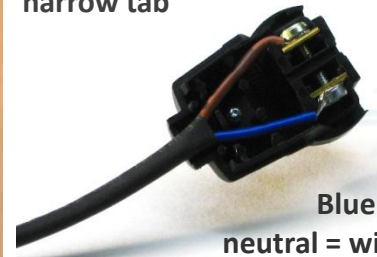
Power supply + Receiver

Free outlet

To be as flexible as possible, the power supply comes with cables only, implying that a standard electrical plug must be installed.

Example

Brown wire = line = narrow tab

Blue wire = neutral = wide tab

Available at any hardware store

Step 1: How to power the system – 4 options for an existing kitchen

Option 2
Directly under the cabinets. The power supply and receiver will be completely concealed by the bottom trim.

to a wall outlet

Wire sleeving for aesthetic

For ease of installation our controllers and power supply are supplied with a UHB double face tape. Once the installation is complete it's recommended to add screws to the power supply for added security.
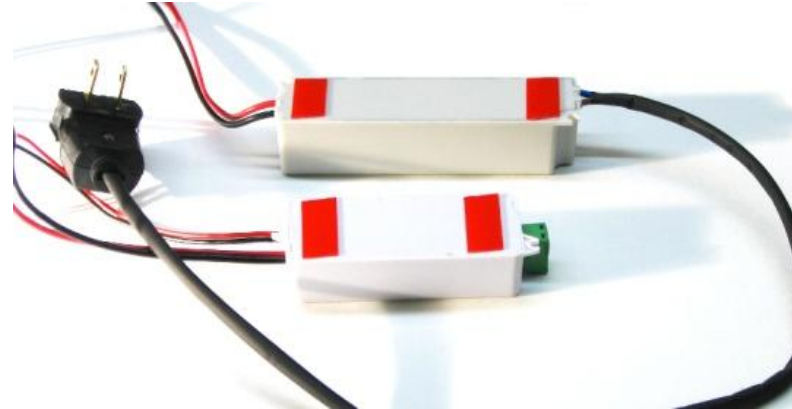
Step 1: How to power the system – 4 options for an existing kitchen

Option 3

Inside a cabinet. You'll still be able to use this cabinet. The power supply is very efficient and does not generate a lot of heat. Just make sure air can circulate around the power supply.

To first luminaire

To a wall outlet

Power cable from power supply

Step 1: How to power the system – 4 options for an existing kitchen

Option 4

if you replace an existing lighting system like fluorescent, it's most likely that you already have access to an AC feed without using a wall outlet. Here's an example:

Important: Be sure to remove the power before connecting the power supply to the AC. You can use regular marettes.

Note: the fluorescent system you're replacing is most likely linked to a standard wall switch. That switch will now control the power supply. *In this case, you don't have to install the RF receiver and remote control if all you need is the ON / OFF function.*
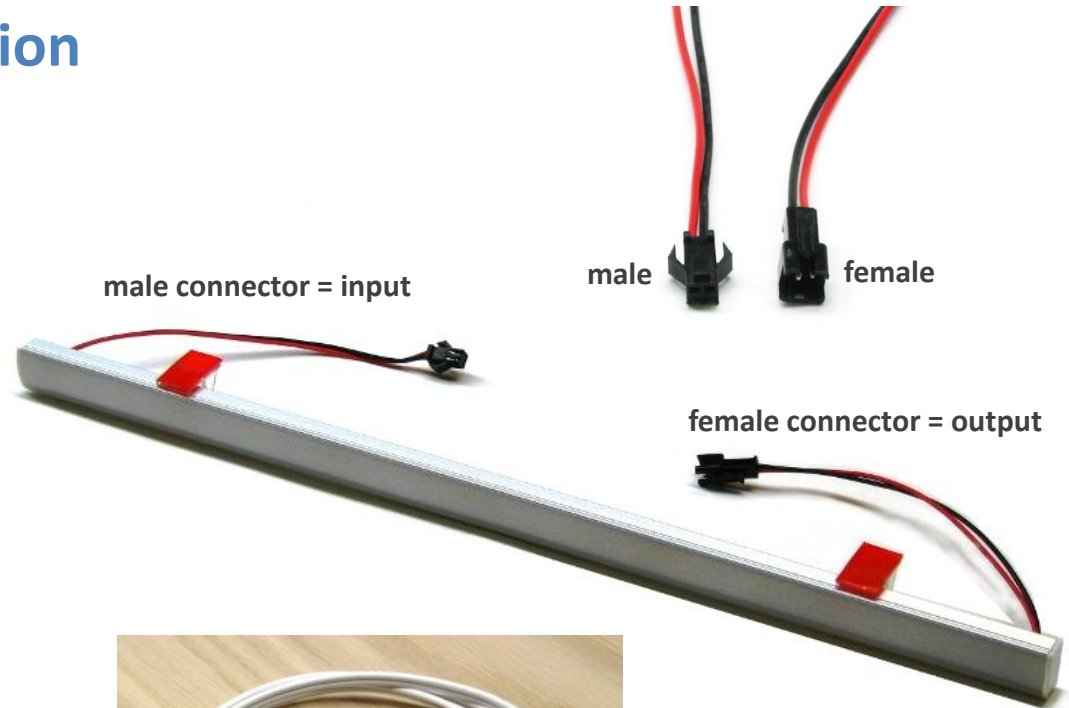
Step 2: Luminaires installation

Basic Concept

The luminaires don't have a specific direction meaning that the input supply could be applied to one side or the other but by convention we use the male connector of the luminaire as the input and the female connector as the output. Make sure the luminaires are installed in the same direction so connections between them is possible.

male connector = input

male   **female**

female connector = output

The power harness connecting the main wiring and the luminaire is available with a female or male connector depending on your need.

Step 2: Luminaires installation

Each luminaire from the UC1 Series is provided with 2 mounting brackets. The mounting brackets are directly attached to the bottom trim via a UHB double-face tape included.

No screws are required.

Mounting brackets
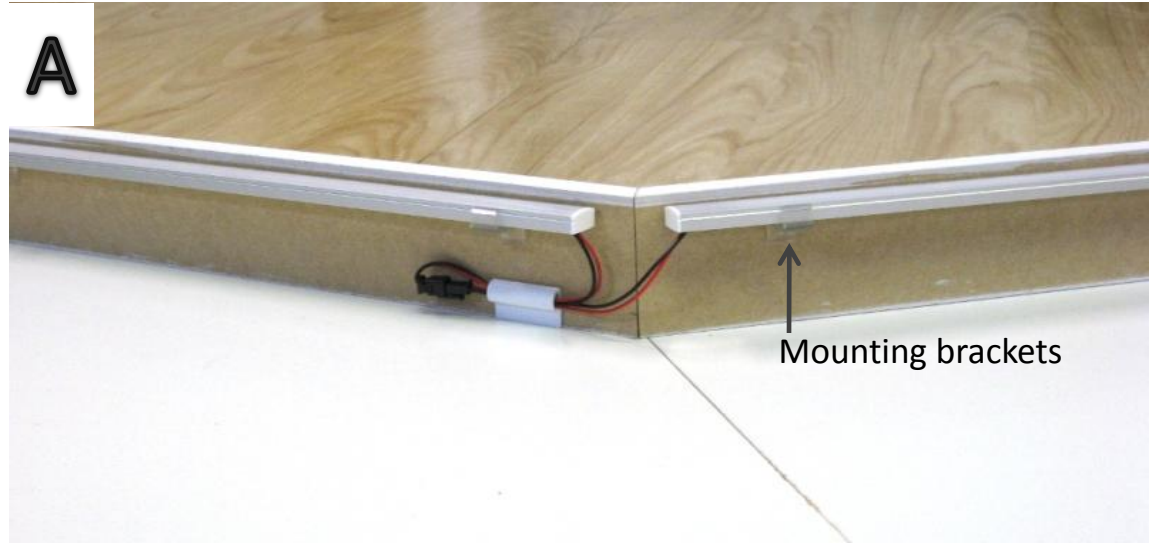
A- Position the luminaire at approximately 5mm from the edge of the trim and stick. This is the ideal position to properly conceal the luminaire without hindering the light beam. The positioning tool greatly facilitates this task. See next slide.

Step 2: Luminaires installation
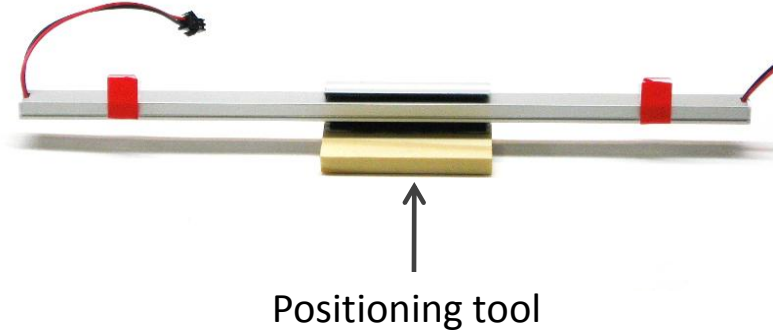
Positioning tool

The positioning tool provides the desired 5mm gap and makes the process easier.

How to use the tool

1. Insert luminaire in the tool like picture above
2. Peel the red liner from each bracket.
3. Press the wooden guide on the edge of the trim and pull it towards you to stick the mounting brackets.
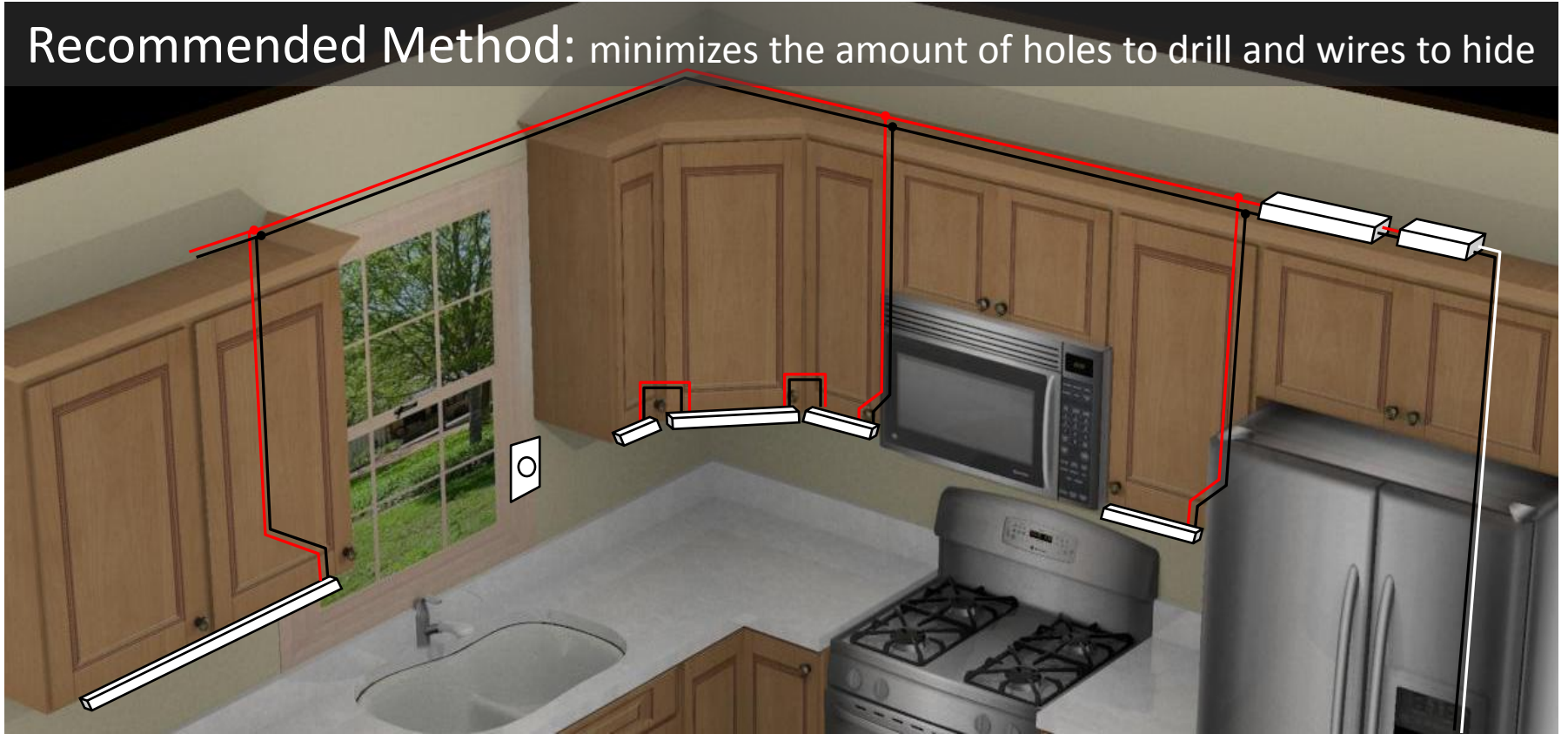
Step 2: Luminaires installation

B- Connect the luminaires with each other.

C- Stick the wire holder close to the end of the luminaire and use it to secure in place the wire harnesses. 1 wire holder is included with each luminaire.

B

C

Wire holder
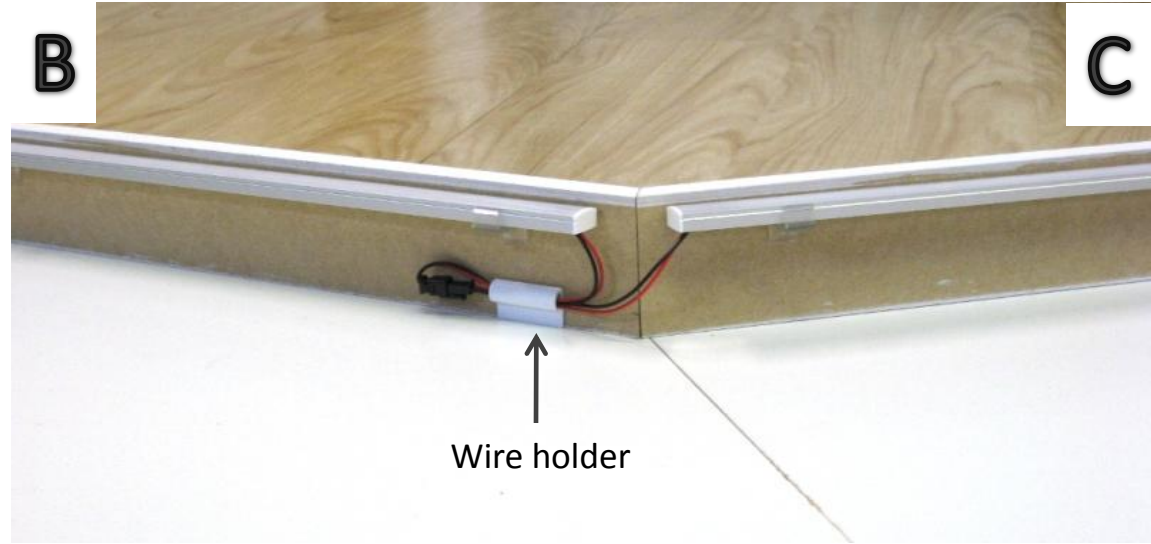
Step 3: Getting power to the luminaires

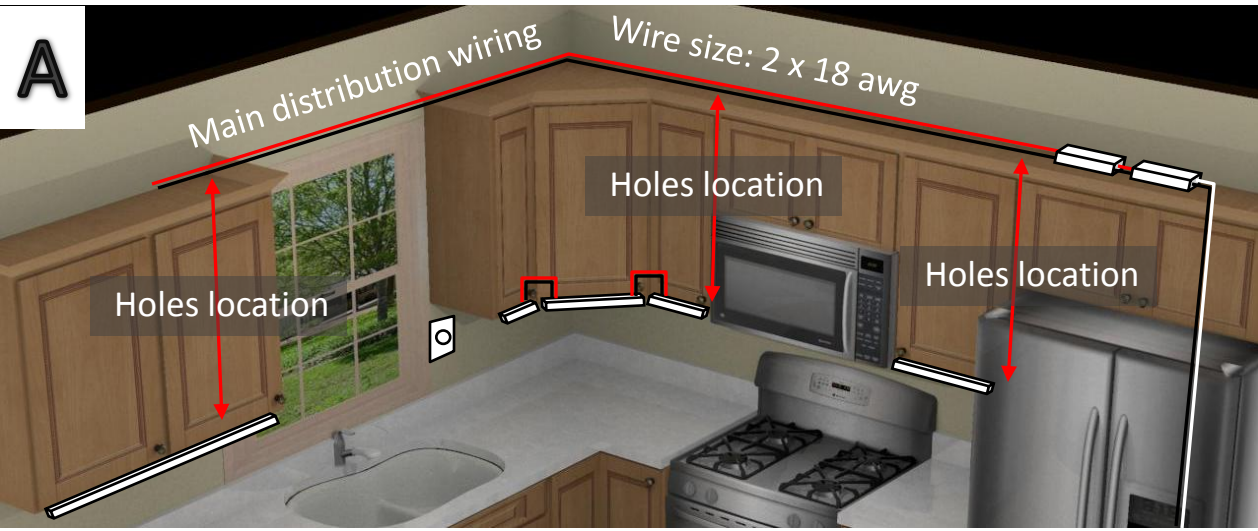Recommended Method: minimizes the amount of holes to drill and wires to hide

Step 3: Getting power to the luminaires

Alternative: less desirable because more holes to drill and wires to hide
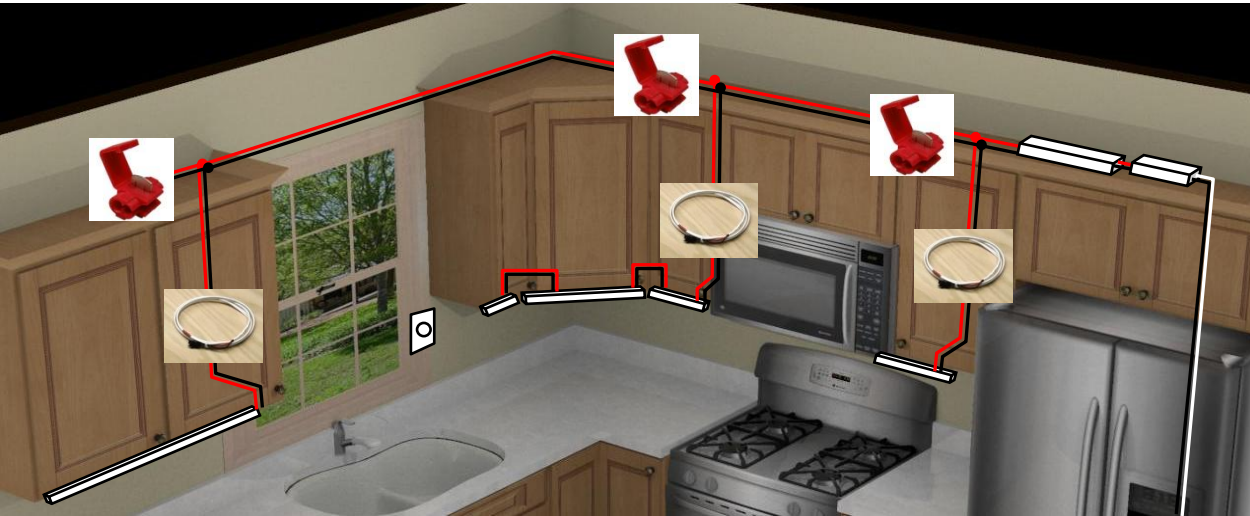
Step 3: Getting power to the luminaires

A- Install the main distribution wiring
B- Drill the top and bottom panels of the cabinets (usually not necessary to drill the shelves). The hole diameter must accommodate 2 x 18 awg wires.

A

Main distribution wiring

Wire size: 2 x 18 awg

Holes location

Holes location

Holes location

B

Top hole

Bottom hole

Step 3: Getting power to the luminaires

C- Route the power harness inside the cabinet. Pull the shelves a little to make way for the wires.

D- Connect the power harness to the first luminaire of a series.

C

Routing of power harness behind the shelves. From bottom to top.

D

Step 3: Getting power to the luminaires

E- Pull on the wires to remove slack and secure the wiring with a wire holder.
F- Connect the other side with main distribution wires using wire taps.

Important:
1) Make sure the polarity is respected. The wire identified with a red shrink tubing is the positive and the other one is the negative.
2) Do not make electrical connections while the power is ON. Unplug the power supply.

Distribution wire

Wire from power harness

E

Wire holder

F

Top of cabinet

Red shrink tubing = positive
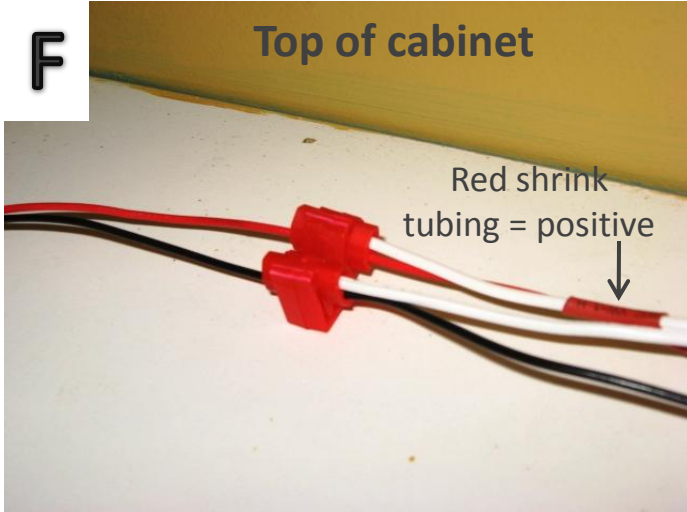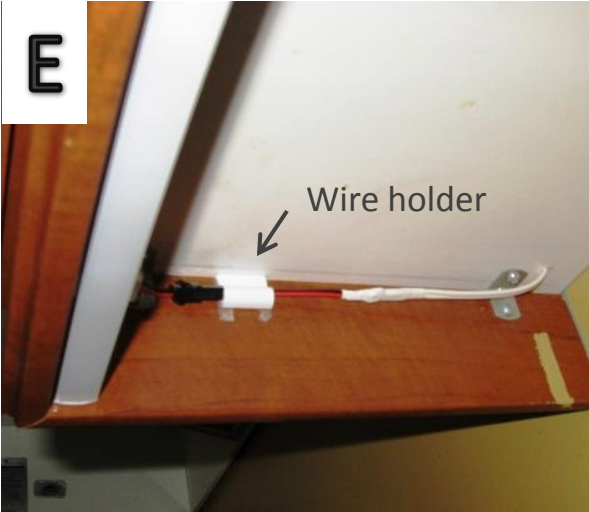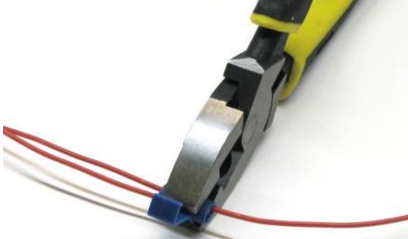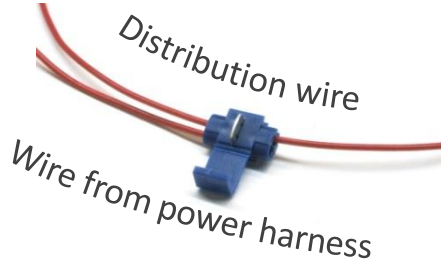
Press tab through the wire insulation

Close cover

Step 4: Test the system

Once the first luminaire is connected, check that the system is working. Make sure the polarity is correct throughout the system before proceeding.

System without receiver / remote control
1. Apply power to the power supply (probably via the wall switch)
2. The light should be ON

System with receiver / remote control
1. Apply power to the power supply
2. Use the remote control to turn on the light

Note: Each remote controller must be paired to a receiver in order to work. This operation was carried out for you in our factory. If need be, please refer to the controller datasheet for the pairing / unpairing procedure.

Step 5: Remote controller installation

iLuXx is offering remote controllers based on the RF technology. It means that the device is wireless (no electrical connections is required – battery operated). So basically it means that you find a location and stick it to the wall. Please refer to your controller datasheet for more details.

How to Order: Luminaires length

Many standard lengths available

iLuXx offers a wide selection of standard lengths. That level of flexibility is unique and an important advantage over other solutions. See table 1 and 2 on next slide (Dim A is the overall length)

Determining the lengths you need :

1. Measure the available space on the bottom trim (inside face)
2. According to table 1 or 2 on next slide, choose the longest luminaire fitting that space (see example below)

Included with each luminaire:

• 2 mounting brackets with UHB double-face tape (no screws needed)

• 1 self-adhesive wire hook.

18''

In this example, the available space on the inside face of the trim is 18''
Choose the longest luminaire ≤ 18''
Table 1 = 16.3'' / Table 2 = 16.7''
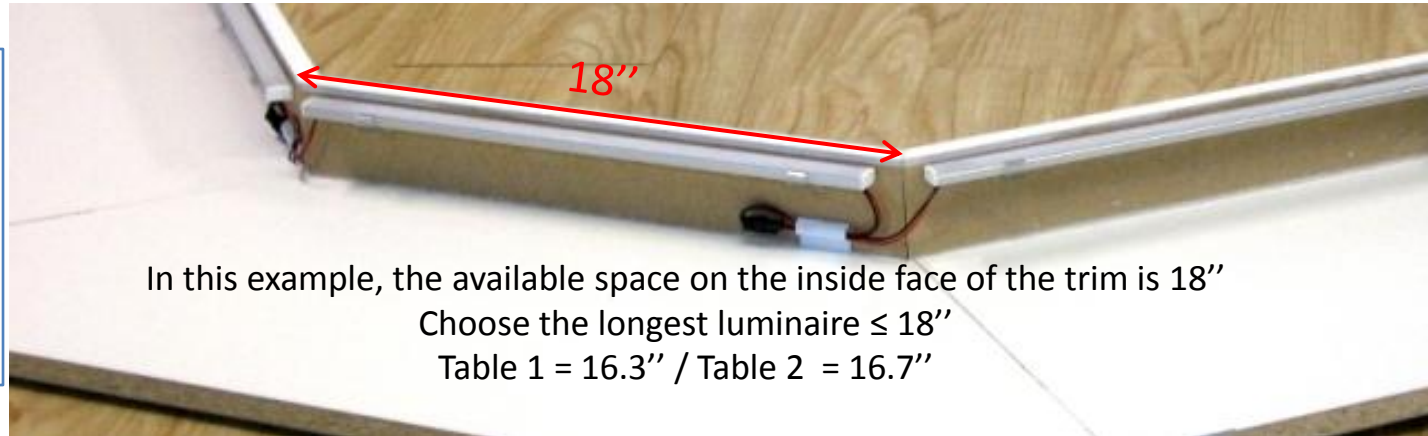
How to Order: Light Output – 2 Options

Select your light output

We deliver more light than anyone out there. Both versions will do a great job but there's a Wow! factor with the 126 Led /meter version that you won't find anywhere else.

Very High Output

- Best results
- 126 Led / meter
- 494 Lumen / feet
- 5.4 Watt / feet

High Output

- Very good results - economical
- 70 Led / meter
- 334 Lumen / feet
- 3.8 Watt / feet

Table 1: Very High Output

Dim A (in/mm)	Power (Watt)	Part Number (1)
UC1 126 LED / meter version		
5,5 / 140	2,2 W	UC1-12624x-140
7,7 / 195	3,2 W	UC1-12624x-195
9,8 / 250	4,3 W	UC1-12624x-250
12,0 / 305	5,4 W	UC1-12624x-305
14,2 / 360	6,5 W	UC1-12624x-360
16,3 / 415	7,6 W	UC1-12624x-415
18,5 / 470	8,6 W	UC1-12624x-470
20,7 / 525	9,7 W	UC1-12624x-525
22,8 / 580	10,8 W	UC1-12624x-580
25,0 / 635	11,9 W	UC1-12624x-635
27,2 / 690	13,0 W	UC1-12624x-690
29,3 / 745	14,0 W	UC1-12624x-745
31,5 / 800	15,1 W	UC1-12624x-800
33,7 / 855	16,2 W	UC1-12624x-855
35,8 / 910	17,3 W	UC1-12624x-910
38,0 / 965	18,4 W	UC1-12624x-965

Table 2: High Output

Dim A (in/mm)	Power (Watt)	Part Number (1)
UC1 70 LED / meter version		
4,9 / 125	1,3 W	UC1-7024x-125
8,9 / 225	2,6 W	UC1-7024x-225
12,8 / 325	4,0 W	UC1-7024x-325
16,7 / 425	5,3 W	UC1-7024x-425
20,7 / 525	6,6 W	UC1-7024x-525
24,6 / 625	7,9 W	UC1-7024x-625
28,5 / 725	9,2 W	UC1-7024x-725
32,5 / 825	10,6 W	UC1-7024x-825
36,4 / 925	11,9 W	UC1-7024x-925

(1) x = Color

Dim A
(overall length)
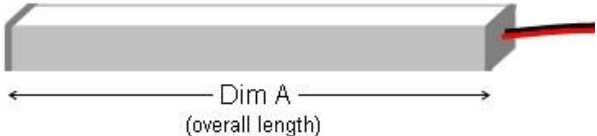
How to Order: Light Color – 2 Options

Select your nuance of white
Because white is not always the same as white.

Neutral White – 4000K
Close to natural light. A good match for cooler colors, whites, stainless steel, modern style kitchens.

Warm White – 3000K
Close to soft white incandescent lighting. A good match for warmer colors, wood, more traditional style kitchens.

Neutral White	Warm White
4000K	3000K

How to Order: Power supply selection

Power supply selection

Type: 24Vdc Constant Voltage

Power:

1. Calculate the total lighting power that will be connected to the power supply. (see table 1 or 2 for wattage according to luminaire length)
2. Select a power supply that covers your total lighting power and keep a safety margin of about 10%.

Example:

- Total lighting power: 55W
- Choose a power supply of 60W or more

How to Order: Controller selection

Controlling the light

The controller is composed of a PWM type receiver and a remote control that can be permanently fixed to the wall. Controller characteristics:

1.   Switch ON or Off the lights
2.   Adjust the lighting level - Dimming.
3.   Can handle a total of 192W @ 24vdc

Note that you can also use a standard wall switch if the dimming function is not required.

Receiver example
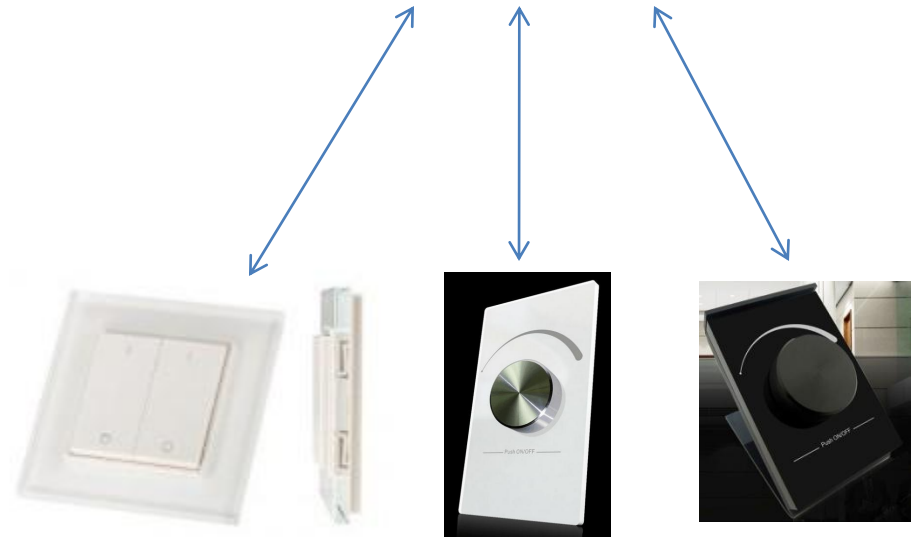
Remote Control examples ; more on website

How to Order: Accessories

Accessories

These accessories are meant to make your job easier. Most are common items you can get at your local hardware store but for added convenience we make them available at www.iluxxinc.com.

Positioning Tool

18 awg Stranded Wire

Power Harness – Male or Female

Inline Wire Tap

How to Order: Summary

In summary here are the required items for a typical project.

1- Luminaires

- Determine the required lengths
- 2 light ouput options
- 2 light color options

2- Power Supply

- Determine luminaires total wattage
- Select the power supply that covers the total wattage.

3- Controller

- Optional
- Required for the dimming function

4- Accessories

18 awg stranded wire for 24vdc power distribution.

Power Harness male or female to connect luminaires with 24vdc power distribution.

« Wire Tap » for simple electrical connections.

Wire holder – Included with luminaires.

Required tools

Luminaires positioning tool - Included

Wire stripper

Tell us about your project

iLuXx provides under cabinets lighting solutions.

www.iluxxinc.com

iLuXx
LED Lighting