



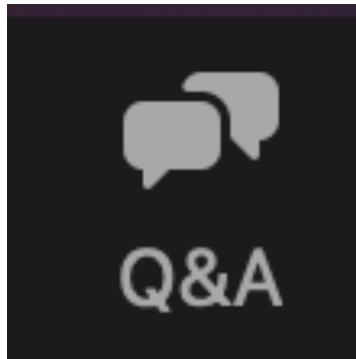
# C&I Lighting & Lighting Controls

WE ARE MASS SAVE®:



# We look forward to hearing from you

Please put all your questions into the questions section with this icon.



# We have BIG Goals in 2024



Convert last of  
Non-LED to LED.  
2025 = Controls  
Focused



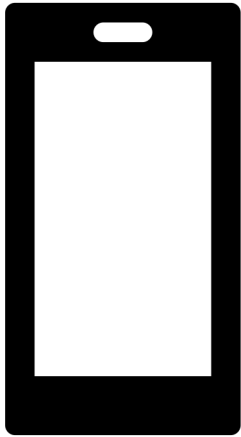
Maximizing  
projects with  
Advanced Lighting  
Controls



Strong  
encouragement of  
comprehensive  
projects

# Maximizing Advanced Lighting Controls

Controls are the future of our lighting programs. Gain the know how NOW so you are ready for 2025



# Current State of Controls

- Controls are the largest lighting related opportunity in MA today
- 1/3 of customers are interested in controls in the future
- Cost & training appear to be the primary barrier to the adoption of controls-Stay tuned for training opportunities



# Advanced Lighting Controls Benefits



Lower energy  
usage



Create a more  
comfortable work  
environment



Make a  
difference

# Trainings Available



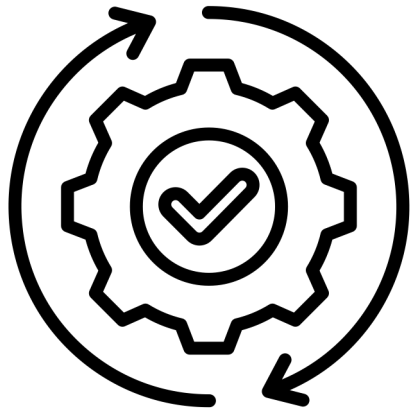
In-Person  
Training in Q2  
with Steve Mesh



Prepare for the training  
by visiting the Lighting  
Controls Association to  
increase your lighting  
controls knowledge.  
Scan QR code.



# Comprehensive Projects





# Comprehensive Projects



Look at the whole  
building

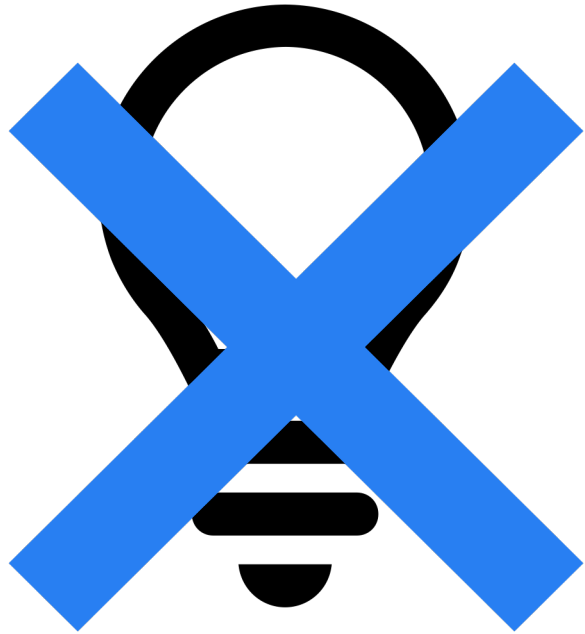


Address other  
measures – like  
heating & cooling



Include Advanced  
Lighting Control

# 2024: Full Removal of screw-based offerings





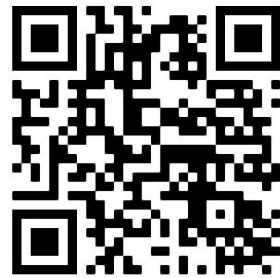
# Instant Lighting

WELCOME  
OPEN  
PLEASE COME IN

# 2024 Instant Lighting Announcement

- Energy Solutions has been announced as the new lead vendor for Massachusetts
- Updated install guidelines for Strip/Wraps, High Bays, Low Bays, and Stairwells
- Starting in 2025 we expect the program to be controllable fixtures only

**For a full list of instant lighting incentives scan this QR code:**



# How does instant lighting work?

Instant incentives are point-of-sale incentives available for contractors and customers, sometimes also called midstream incentives.



# How to participate in instant lighting



Find a [participating distributor](#) for your lighting equipment.



Work with your contractor or distributor to choose efficient equipment that qualifies for instant rebates



Install high-efficiency equipment and enjoy the benefits of energy savings!

# Instant Program Rules & Reminders

# Program Rules & Reminders



Only commercial and industrial customers serviced by Cape Light Compact, Eversource, National Grid, and Unitil are eligible.



Customers are only eligible for one incentive pathway (e.g., customers receiving whole building incentives are NOT eligible).



Equipment must be purchased through a participating distributor.



Equipment must be on the specified qualified product list (QPL), [DesignLights Consortium](#) or [ENERGY STAR](#).



# Program Rules & Reminders



Pre-approval may be required, please consult with your distributor or dealer.



A minimum customer contribution is required.



Lighting product must be installed within 30 days.



Projects are subject to inspection.

# Downstream Lighting & Lighting Controls

# New Incentive Amounts for 2024

Incentives have increased for 2024

Labor Cost + Product Costs

Encourage more controls projects

Last push for LED conversions  
before we go 100% controls  
focused



# How to participate

## Contact Your Program Sponsor

Provide your [Program Sponsor](#) with your [completed application](#)

## Receive Pre-Approval from Your Program Sponsor

## Install Pre-Approved Equipment

## After Installation Is Completed

**Only available to Cape Light Compact, Eversource, National Grid, & Unitil commercial & industrial electric customers**

# Overview of 2024 Downstream Lighting Changes



Complete removal of screw base bulbs and downlights



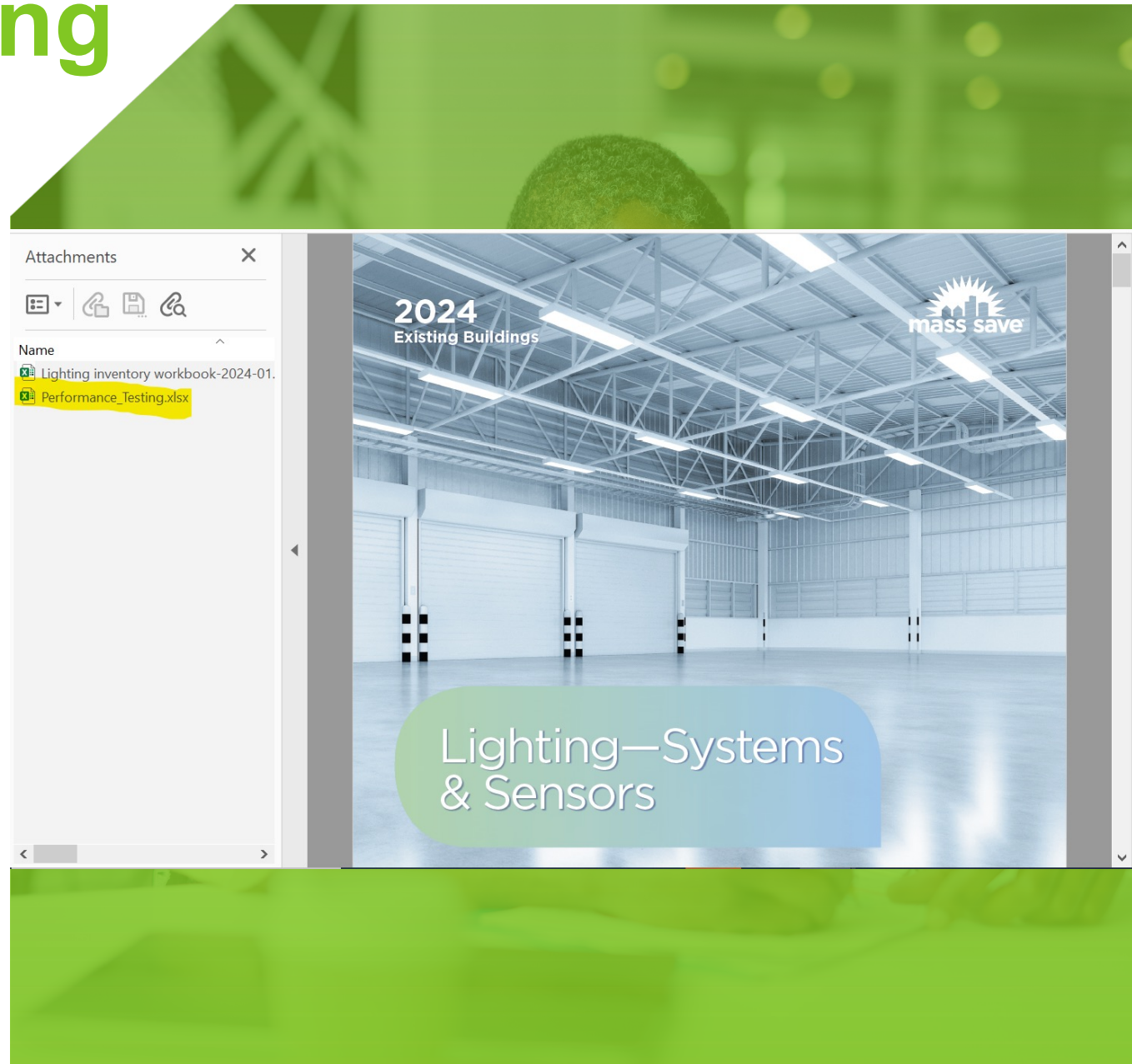
Additional incentives available for codes 63A & 65A - NLCs



Commissioning is now called "Performance Testing"

# Performance Testing

- Documentation to be completed with every lighting controls project
- Template is embedded within the application. Must be downloaded and opened in Adobe to View
- Replaces previous 30-day Commissioning Requirements
- Reach out to your sponsor for more details on how to complete form



**More information on the downstream lighting program, including the application and a full list of incentives can be found by scanning this QR code.**



# Other Lighting Pathways



## Custom

If your project does not fit our prescriptive offerings or if you have a complex controls project custom can be considered.



## Small Business Program

Contact your program administrator to learn more about the comprehensive offerings available through this program!



## New Construction

Limited lighting offerings are available through the new construction pathway. Watch the recording of the New Construction session to learn more about comprehensive New Construction projects.

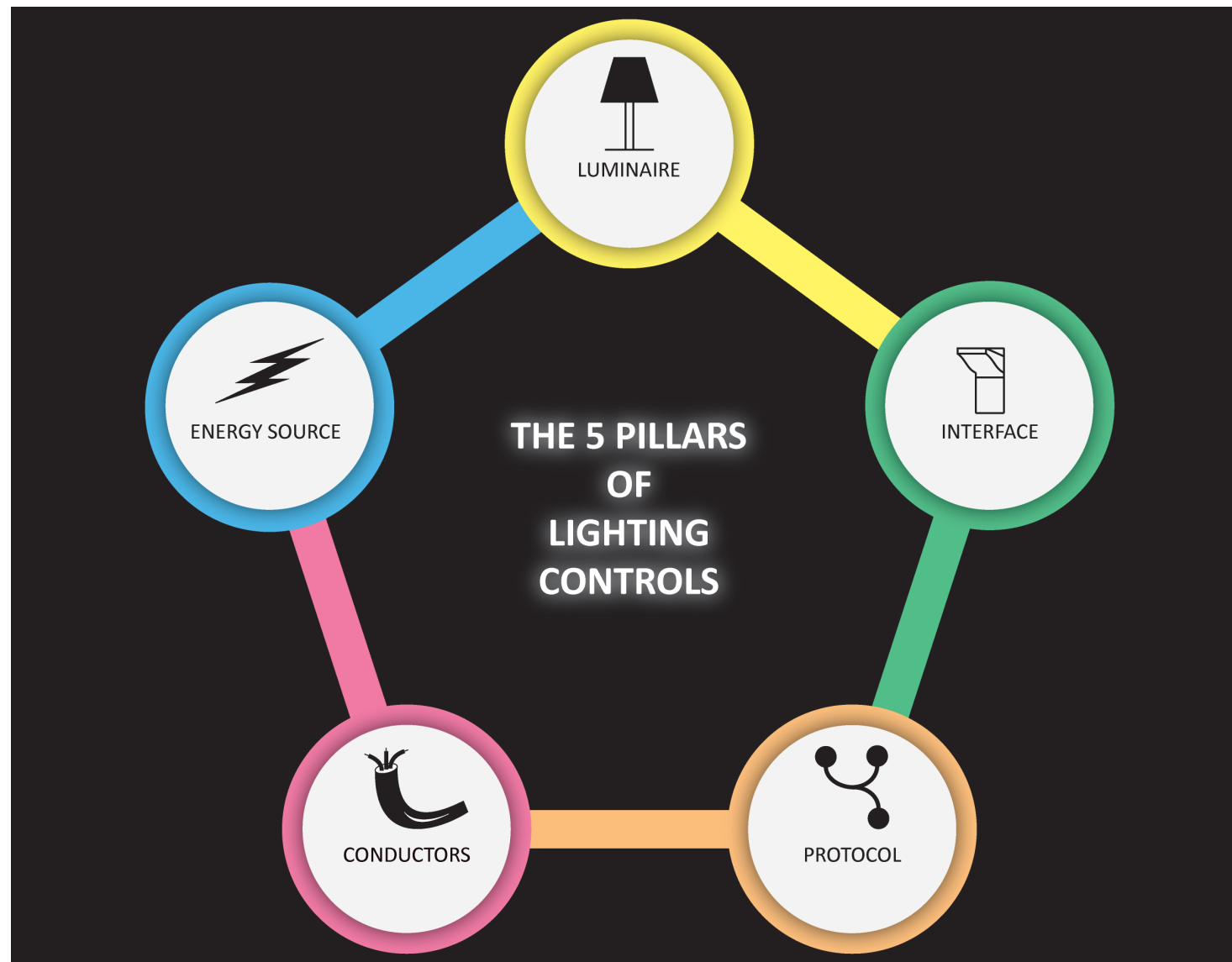


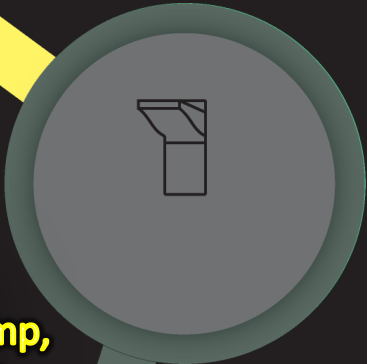
# C.Webster Marsh



C. Webster Marsh MIES, CLCP  
[Webster@PenumbraControls.com](mailto:Webster@PenumbraControls.com)







LUMINAIRE

A complete lighting unit consisting of a lamp, a driver, a housing, a medium to distribute the light, and connection to an energy source.

# EXAMPLE



LUMINAIRE



An incandescent stand light  
with a lamp

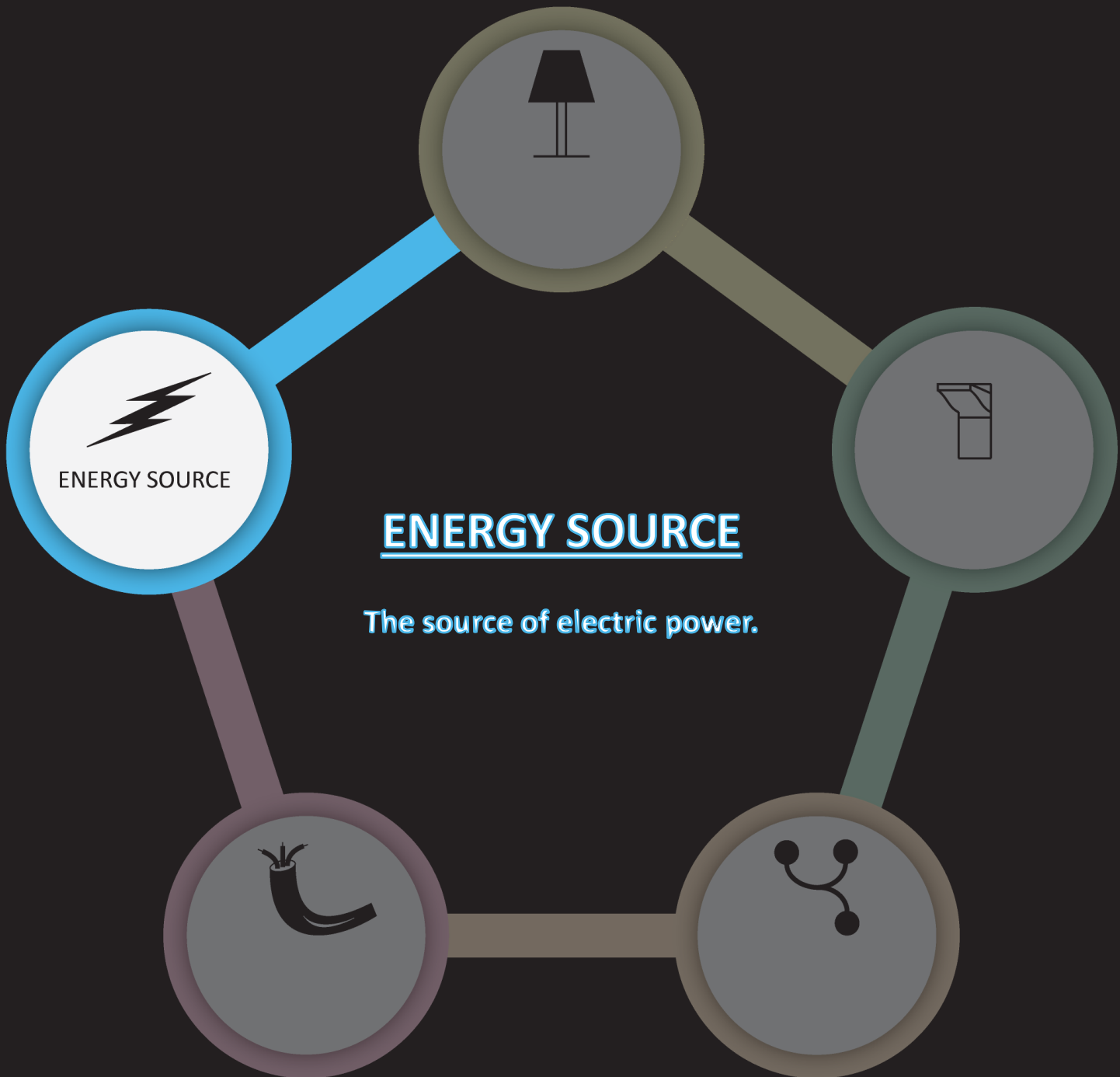
Image Credit: <https://www.pexels.com/photo/bedroom-night-lights-stand-1853607>

# HOW TO IDENTIFY



LUMINAIRE

- Type of luminaire
- Voltage
- Integral or remote driver
- Dimming range





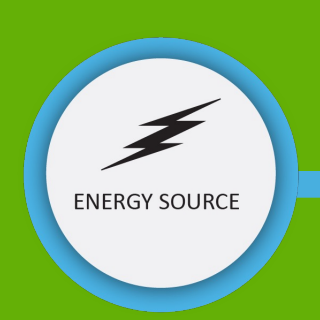
ENERGY SOURCE

# EXAMPLE



Image Credit: <https://www.flickr.com/photos/brendan-c/6333080789>

Line Voltage  
AC (120V, 277V, Multi-Volt...)

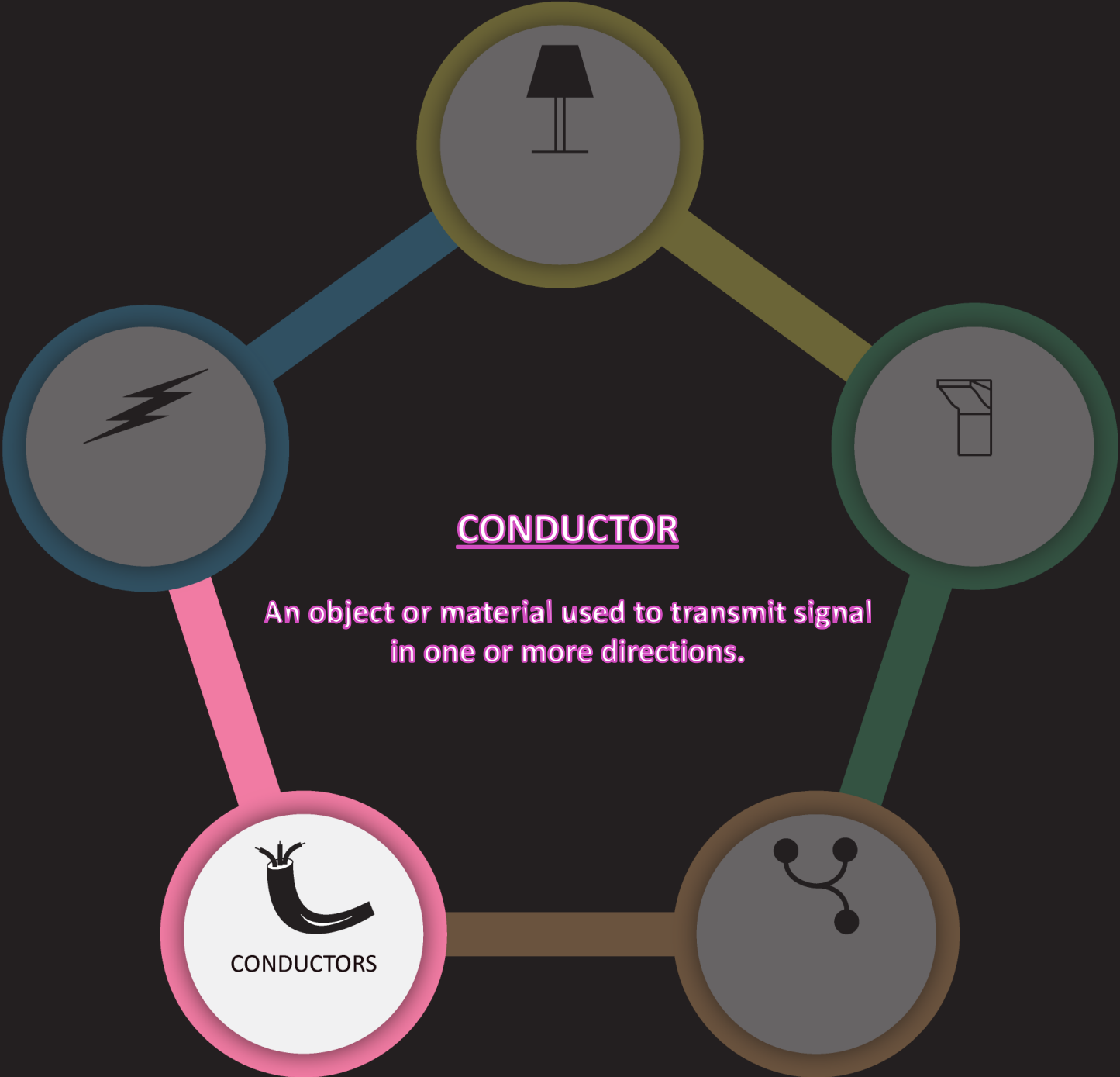


# HOW TO IDENTIFY

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- Input and output voltage
- Luminaire or connected device power requirements
- Mounting location/s
- Environmental requirements





# WHAT DO THEY DO?



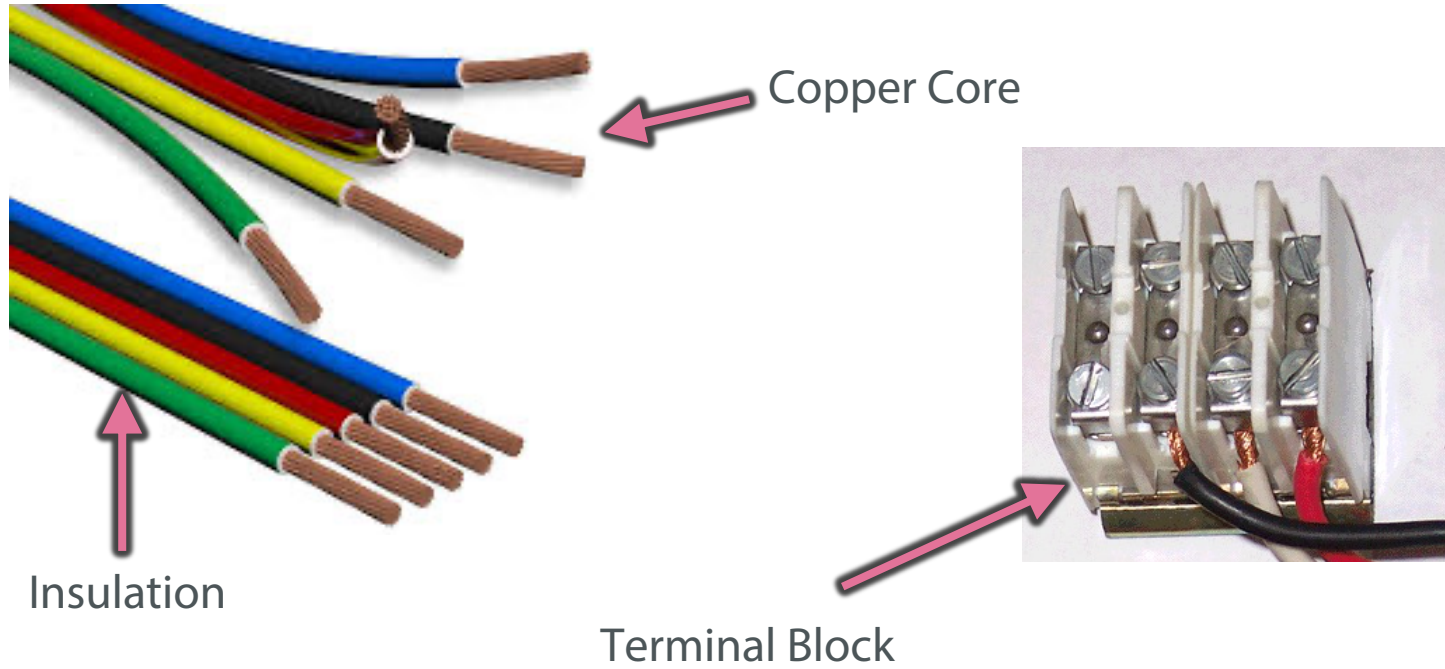
CONDUCTORS

- Connect devices to a power source
- Protects protocol communication
- Connect devices to other devices

# COPPER WIRE



CONDUCTORS



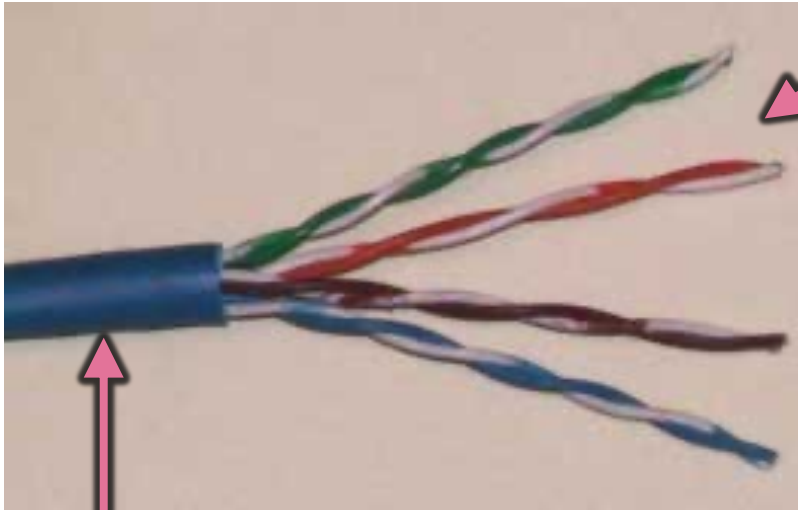
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1. <https://pixabay.com/illustrations/wires-and-cables-wires-cables-cable-4298193/>
2. [https://commons.wikimedia.org/wiki/File:Terminal\\_Blocks\\_01CJC.png](https://commons.wikimedia.org/wiki/File:Terminal_Blocks_01CJC.png)

# CAT5 CABLE

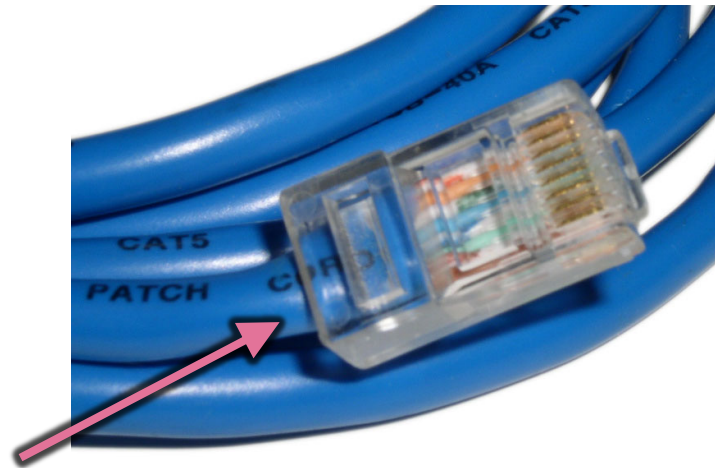


CONDUCTORS



Insulation

4 Twisted Conductor Pairs



RJ45 Termination

Modified Images Credits:

1. [http://www.swhowto.com/images/CAT5\\_CAT5e\\_Cable1text\\_a.jpg/](http://www.swhowto.com/images/CAT5_CAT5e_Cable1text_a.jpg/)
2. <http://ciscorouterswitch.over-blog.com/article-cat5-vs-cat5e-vs-cat6-cables-123551019.html>

# HOW TO IDENTIFY



CONDUCTORS

- Luminaires or devices it connects
- Part number or gauge manufacturer specifies
- Distance limitations
- Terminations used (terminal blocks, RJ45, 5-pin neutrik)
- Distance limitations
- Labelling
- Additional standards or manufacturer requirements



## A PROTOCOL IS

**A common and standardized set of rules that allow devices to communicate with each other. A protocol will also employ a topology for device-device connectivity.**



PROTOCOL

A circular icon with a white background and an orange border. Inside the circle, there is a black network diagram with three nodes and connecting lines. Below the diagram, the word "PROTOCOL" is written in a small, black, sans-serif font.

# WHAT DO THEY DO?

---

- Help devices and luminaires communicate
- Ensure compatibility among devices
- Regulate data
- Enforce operational procedures
- Use specific conductors

# THE THREE CATEGORIES OF PROTOCOLS

- Analogue
- Wired Digital
- Wireless Digital



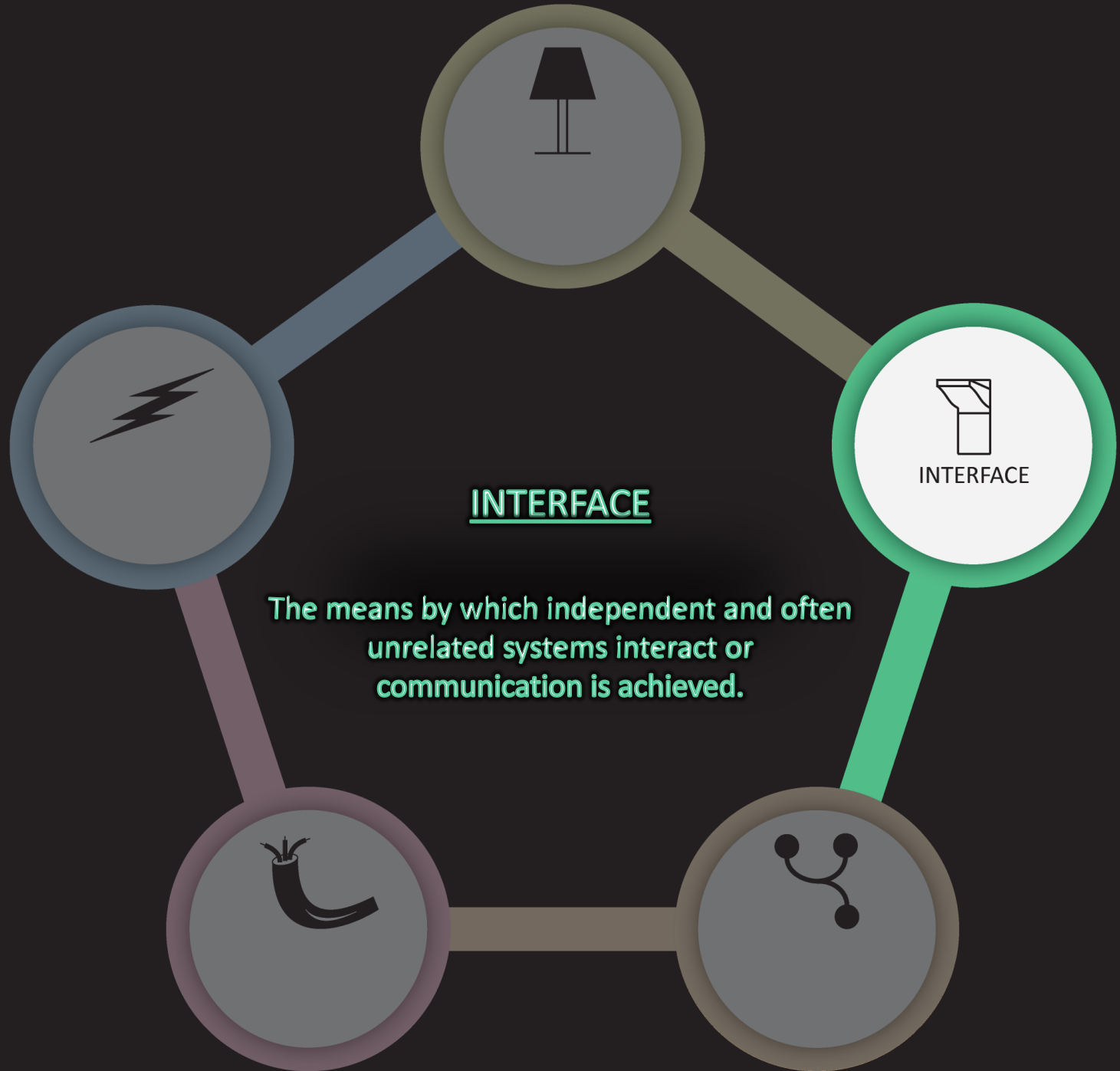




# HOW TO IDENTIFY

---

- Luminaires or devices
- Conductors
- Protocol name and version
- Topology



INTERFACE

The means by which independent and often unrelated systems interact or communication is achieved.



INTERFACE



INTERFACE

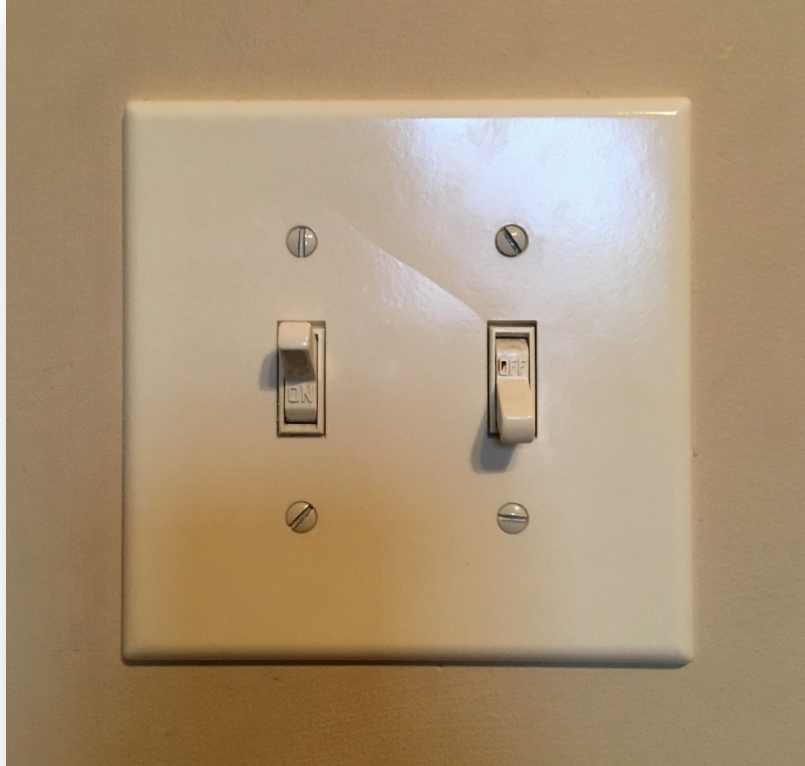
# WHAT DO THEY DO?

- Allow people to adjust lighting
- Translate from one protocol to another
- Control non-lighting systems
- Trigger presets



INTERFACE

# EXAMPLE



Light switch

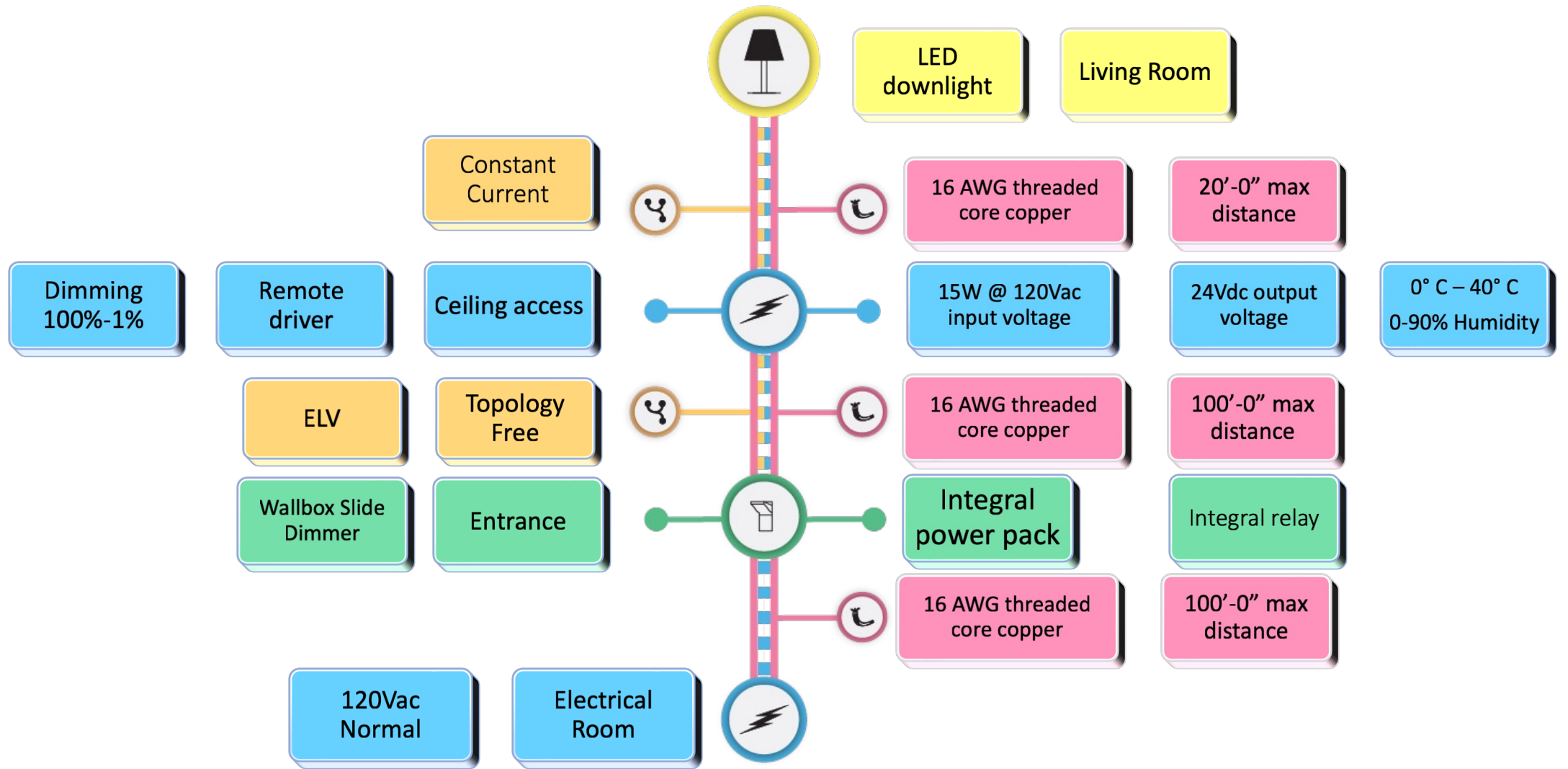
Image Credit: [https://commons.wikimedia.org/wiki/File:A\\_double\\_toggle\\_light\\_switch.jpg](https://commons.wikimedia.org/wiki/File:A_double_toggle_light_switch.jpg)



INTERFACE

# HOW TO IDENTIFY

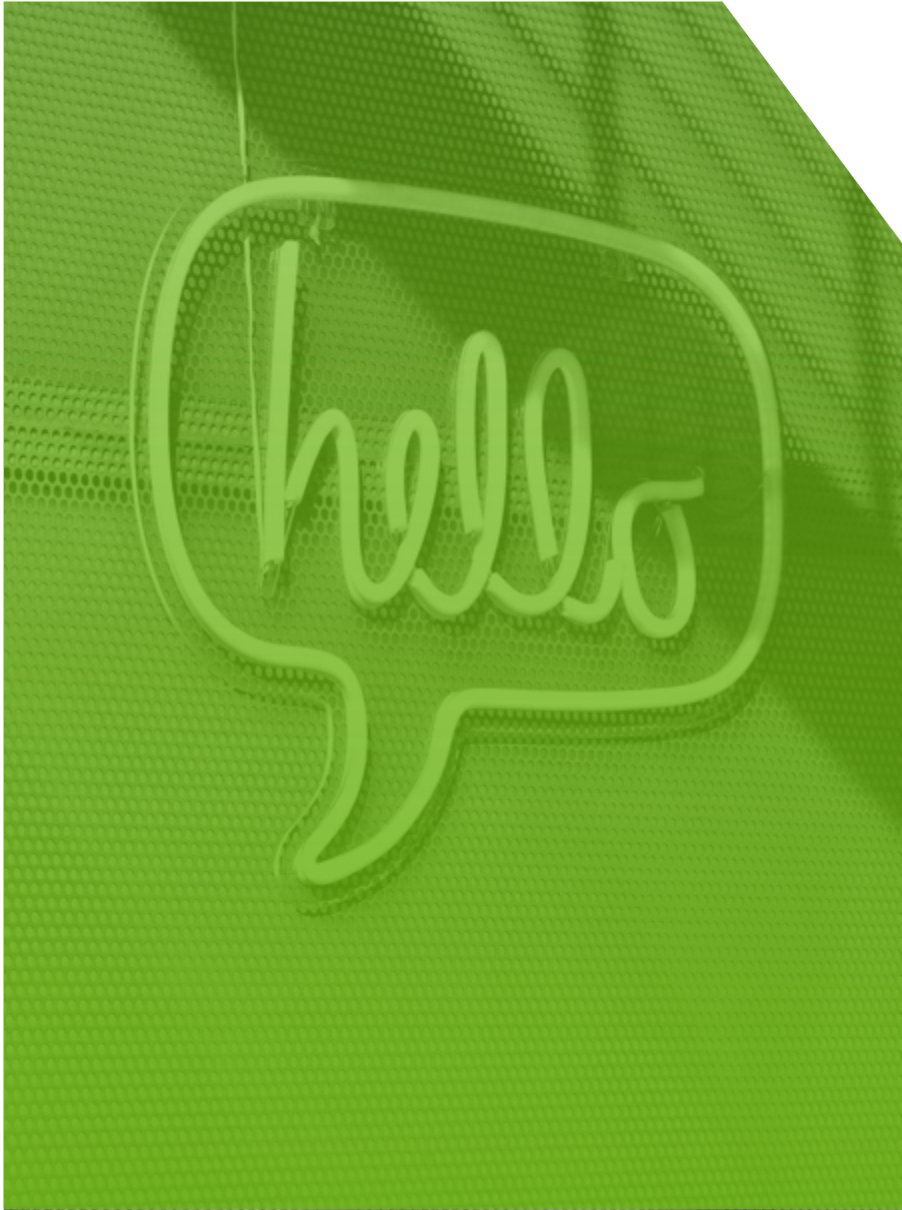
- Luminaires to control
- Energy source
- Conductors connecting
- Protocol
- Mounting location
- Devices connecting to
- Functionality and environmental inputs
- User experience and quantities of inputs
- Labeling





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# Program Contacts



## Instant Lighting

nelighting@energy-solution.com  
617.440.5471 or 510.852.8491

## Eversource

efficiencyma@eversource.com  
844-887-1400

## National Grid

efficiency@nationalgrid.com  
800-787-1706

## Cape Light Compact

efficiency@capelightcompact.org  
800-797-6699

## Eversource

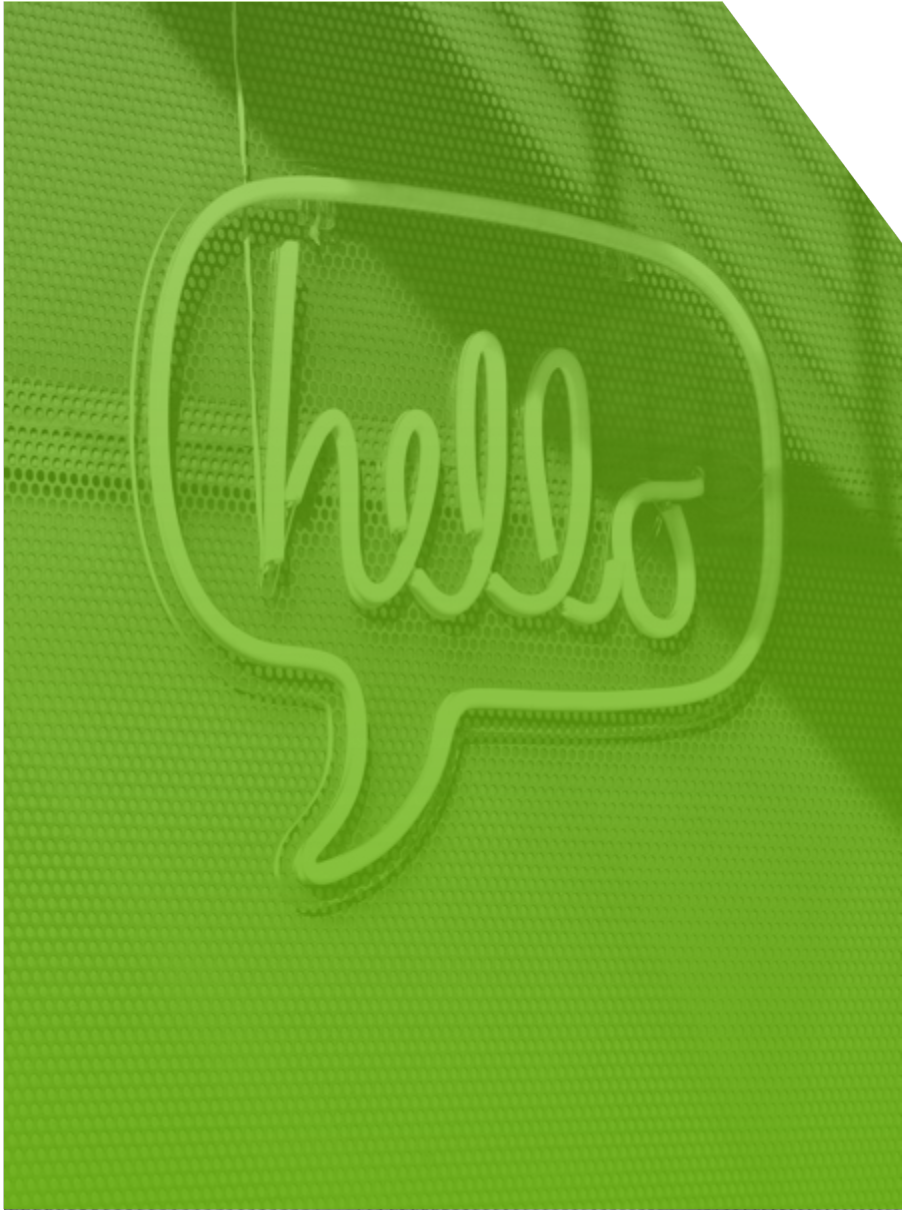
Express Only  
expltg@eversource.com

## Unitil

efficiency@unitil.com  
888-301-7700



# Sponsor Contacts



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## Tom Palma

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# Questions?

WE ARE MASS SAVE®:



# Supplemental Information

- A full list of the 2024 Downstream lighting incentives can be found [here](#).
- A full list of the 2024 Instant Lighting Incentives can be found [here](#).
- To find a participating distributor for the Instant Lighting Program click [here](#).
- More information on the downstream lighting & lighting controls program along with the full application can be found [here](#).
- The DesignLights Consortium qualified product list can be found [here](#).
- Courses to increase lighting knowledge from Lighting Controls Association can be found [here](#).
- Find your [Program Sponsor](#) here