# **CONTROLS GUIDE** FOR LINEAR FIXTURES WITH INTEGRAL DRIVERS

ILLUMINATE THE SOUL

S. S. Stratic State



EMBEDDED CONTROLS MADE EASY ALW-INC.COM

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# **INTRO TO EMBEDDED CONTROLS**

Lighting controls are continuously evolving and are beginning to transition from distributed load controls (used to control a group of fixtures together) to embedded in-fixture solutions (also known as luminaire-level lighting controls (LLLC)).

This controls supplement provides details for specifying common embedded controls with ALW lighting fixtures. These product SKUs can be configured in ALW's online partner portal to provide you with appropriate pricing to accurately budget your project. Be sure to collaborate with your controls team and ALW's Inside Sales team to spec the appropriate product SKUs and quantities to match the controls layout in the project RCP & schedule. Drawings can then be requested to illustrate fixture mounting, electrical details, circuit lengths, etc.

If you don't see a specific control spec in this guide, contact ALW to add it to your project and/or to this supplement. This guide will be continually updated to support common control specs relevant to your controls line card. ALW is your go-to partner for embedded controls integration

Note: ALW partners with a wide range of 3rd party controls manufacturers but does not influence the sale of specific controls brands over others. Our goal is to provide ultimate flexibility for our agents and support them through the specification to build process.

# **HOW TO SPECIFY CONTROLS**

### **1) CHOOSE BRAND**

Ex: Customer wants to choose an nLight Air system by Acuity. Choose Acuity  $(\ensuremath{\mathsf{AY}})$  as the brand

AY/xx/\_\_ (Acuity, integral)

### N (None)

| <b>AY/</b> xx/ | (Acuity nLight)         |
|----------------|-------------------------|
| AI/xx/         | (Avi-on)                |
| CA/xx/         | (Casambi)               |
| CW/xx/         | (Cooper Wavelinx)       |
| EC/xx/         | (Encelium)              |
| EN/xx/         | (Enlighted)             |
| LU/xx/         | (Lutron)                |
| NX/xx/         | (NX Controls, integral) |
| WA/xx/         | (Wattstopper, integral) |

# 2) CHOOSE MODEL

Ex: Acuity's nLight Air models are listed on pg 4. For this example we'll choose **RES7**/

**AY/RES7/**\_\_ (Acuity, integral)

| ALW PRODUCT CODE | MFR PRODUCT CODE                 |
|------------------|----------------------------------|
| AY/RIO/          | RIO ZTS EXTDB ACxx 180D G2       |
| AY/RES7/         | RES7 ZTS EXT900 ACxx 180D G2     |
| AY/RES7P/        | RES7 PDT ZTS EXT900 ACxx 180D G2 |
| AY/RIOEM/        | RIO ZT EM EXTDB ACxx 180D G2     |

### **3) CHOOSE QUANTITY**

Ex: Choose a quantity of **2** for two sensors on a long fixture run

# AY/RES7/2 (Acuity, integral)

# 4) FINALIZE YOUR FIXTURE CODE

A. Choose compatible lamping (3500K)

B. Choose compatible driver (V00)

C. Add the final sensor spec (AY/RES7/2) to the end of your fixture code from your fixture spec sheet



# 5) SUBMIT YOUR PROJECT

A. Submit your spec and project details to ALW's Inside Sales team.

B. Include product types/product codes/quantities, embedded device locations, RCP, and lighting/controls schedules.

Ex: LPX-2-RT9-D-S20-MED/90/3500K-CR/S-V00-SW-UNV-SC-AY/RES7/2

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# **ACUITY nLIGHT WIRED**

|                 | ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE              | DESCRIPTION   | SENSOR<br>HEIGHT | COMPATIBLE<br>LED OUTPUT | COMPATIBLE<br>DRIVERS*      |
|-----------------|---------------------|----------------------------------|---|------------------|--------------------------|-----------------------------|
|                 | AY/NIO/             | NIO EZ PH                        | 0-10V nLight Wired integral control, no sensor                                    | N/A              | STD                      | V00 or EL0<br>(120V-277VAC) |
| 0-10V           | AY/NES7/            | NIO EZ PH +<br>NES PDT 7         | 0-10V nLight Wired integral control + dual tech occ sensor                        | 8ft - 20ft       | STD                      | V00 or EL0<br>(120V-277VAC) |
|                 | AY/NES7A/           | NIO EZ PH +<br>NES PDT 7 ADCX    | 0-10V nLight Wired integral control + dual tech occ/daylight sensor               | 8ft - 20ft       | STD                      | V00 or EL0<br>(120V-277VAC) |
| _               | AY/NIOEM/           | NIO EZ PH ER                     | 0-10V nLight Wired integral EM control, no sensor                                 | N/A              | STD                      | V00 or EL0<br>(120V-277VAC) |
| <b>)-10V EM</b> | AY/NES7EM/          | NIO EZ PH ER +<br>NES PDT 7      | 0-10V nLight Wired integral EM control + dual tech occ sensor                     | 8ft - 20ft       | STD                      | V00 or EL0<br>(120V-277VAC) |
|                 | AY/NES7AEM/         | NIO EZ PH ER +<br>NES PDT 7 ADCX | 0-10V nLight Wired integral EM control +<br>dual tech occ/daylight sensor         | 8ft - 20ft       | STD                      | V00 or EL0<br>(120V-277VAC) |
| sode            | AY/TW/              | NIO EZDCL CCT                    | LEDcode nLight wired EZDCL integral control for TW lamping, no sensor             | N/A              | Tunable White            | DALI<br>(120V-277VAC)       |
| LED             | AY/TWS/             | NIO EZDCL CCT +<br>VERTEX        | LEDcode nLight wired EZDCL integral control<br>for TW lamping + Vertex occ sensor | 8ft - 20ft       | Tunable White            | DALI<br>(120V-277VAC)       |
| de EM           | AY/TWEM/            | NIO EZDCL CCT ER                 | LEDcode nLight wired EZDCL integral EM control for TW lamping, no sensor          | N/A              | Tunable White            | DALI<br>(120V-277VAC)       |
| LEDCO           | AY/TWSEM/           | NIO EZDCL CCT ER +<br>VERTEX     | LEDcode nLight wired EZDCL integral EM control for TW lamping + Vertex occ sensor | 8ft - 20ft       | Tunable White            | DALI<br>(120V-277VAC)       |

\*V00 with STD lamping will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. ELO with STD lamping will include an EldoLED SoloDrive 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve. DALI with TW lamping will include an EldoLED DualDrive DALI/LEDcode2 driver programmed to 0.1% dimming with dim-to-off curve.

# **TYPICAL LINEAR FIXTURE WITH nLIGHT WIRED CONTROLS**



ALW will provide a CAT5e cable and RJ45 splitter for nLight Wired specs

**DON'T SEE AN EMBEDDED CONTROL ON THIS LIST?** Contact ALW with your preferred manufacturer product codes and project details so we can accommodate the embedded controls of your choice.

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# LINEAR WITH INTEGRAL DRIVERS CONTROLS GUIDE

# **ACUITY nLIGHT AIR**

|          | ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE                   | DESCRIPTION  | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*      |
|----------|---------------------|---------------------------------------|--|-----------------------|-----------------------------|
| 0-10V    | AY/RIO/             | RIO ZTS EXTDB ACxx<br>180D G2         | 0-10V nLight Air integral control (external dual band antenna)                         | STD                   | V00 or EL0<br>(120V-277VAC) |
|          | AY/RES7/            | RES7 ZTS EXT900 ACxx<br>180D G2       | 0-10V nLight Air integral occ/daylight sensor (external antenna)                       | STD                   | V00 or EL0<br>(120V-277VAC) |
|          | AY/RES7P/           | RES7 PDT ZTS EXT900<br>ACxx 180D G2   | 0-10V nLight Air integral dual tech occ/daylight sensor (ext antenna)                  | STD                   | V00 or EL0<br>(120V-277VAC) |
|          | AY/RIOEM/           | RIO ZT EM EXTDB ACxx<br>180D G2       | 0-10V nLight Air integral EM control (external dual band antenna)                      | STD                   | V00 or EL0<br>(120V-277VAC) |
| 0-10V EM | AY/RES7EM/          | RES7 ZT EM EXT900<br>ACxx 180D G2     | 0-10V nLight Air integral EM occ/<br>daylight sensor (external antenna)                | STD                   | V00 or EL0<br>(120V-277VAC) |
|          | AY/RES7PEM/         | RES7 PDT ZT EM<br>EXT900 ACxx 180D G2 | 0-10V Air integral <mark>EM</mark> dual tech occ/<br>daylight sensor (ext antenna)     | STD                   | V00 or EL0<br>(120V-277VAC) |
|          | AY/RIOL/            | RIO EZDL EXTDB ACxx<br>180D G2        | LEDcode nLight Air integral control (external dual band antenna)                       | STD                   | DALI<br>(120V-277VAC)       |
| LEDcode  | AY/RES7L/           | RES7 EXT900 ACxx<br>180D G2           | LEDcode nLight Air integral occ/day-<br>light sensor (external antenna)                | STD                   | DALI<br>(120V-277VAC)       |
|          | AY/RES7PL/          | RES7 PDT EXT900 ACxx<br>180D G2       | LEDcode nLight Air integral dual tech occ/daylight sensor (ext antenna)                | STD                   | DALI<br>(120V-277VAC)       |
| 5        | AY/RIOLEM/          | RIO EZDL EM EXTDB<br>ACxx 180D G2     | LEDcode nLight Air integral EM control (ext dual band antenna)                         | STD                   | DALI<br>(120V-277VAC)       |
| Dcode El | AY/RES7LEM/         | RES7 EM EXT900 ACxx<br>180D G2        | LEDcode nLight Air integral <mark>EM</mark> occ/<br>daylight sensor (external antenna) | STD                   | DALI<br>(120V-277VAC)       |
| 9        | AY/RES7PLEM/        | RES7 PDT EM EXT900<br>ACxx 180D G2    | LEDcode Air integral EM dual tech occ/daylight sensor (ext antenna)                    | STD                   | DALI<br>(120V-277VAC)       |

\*V00 (0-10V models) will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. EL0 (0-10V models) will include an EldoLED SoloDrive with Aux 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve. DALI (DALI/LEDcode models) will include an EldoLED SoloDrive DALI/LEDcode2 driver programmed to 0.1% dimming with dim-to-off curve.

**nLight Air External Antenna Note:** Recommended by Acuity, ALW specifies an external antenna (EXT900 or EXTDB) for all nLight Air configurations. The antenna is typically mounted on the top end of the fixture body. For recessed fixtures, antenna will be placed on the top end of fixture and recessed into the ceiling cavity. Per request, antenna can be placed on bottom of fixture. As a standard, SMB ceiling mounted fixtures will have the antenna placed on the bottom of the fixture, unless customer requests a top antenna (customer must be willing to drill hole in ceiling to put antenna on top of fixture).



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## LINEAR WITH INTEGRAL DRIVERS CONTROLS GUIDE

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# **AVI-ON**

| ALW PRODUCT<br>CODE   | MFR PRODUCT<br>CODE                            | DESCRIPTION  | SENSOR<br>HEIGHT | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*      |  |  |
|---|--|--|------------------|-----------------------|-----------------------------|--|--|
| AN/LVFA/  | AVI-LVFA-1CH-12-<br>24VDC                      | Avi-on wireless integral control, no sensor                | N/A              | STD                   | V00 or EL0<br>(120V-277VAC) |  |  |
| AY/LVFAP/   | AVI-LVFA-1CH-12-<br>24VDC + AVI-DC-CS2-<br>PIR | Avi-on wireless integral control + occ/<br>daylight sensor | 8ft - 40ft       | STD                   | V00 or EL0<br>(120V-277VAC) |  |  |
| 100 will include an Eldal ED Optotronics with Aux 0 10V LED driver programmed to 1% dimming with dim to off curve |  |  |                  |                       |                             |  |  |

\*VOO will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. ELO will include an EldoLED SoloDrive with Aux 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve.

# CASAMBI -

| ALW PRODUCT | MFR PRODUCT | DESCRIPTION  | SENSOR | COMPATIBLE | COMPATIBLE |
|-------------|-------------|--|--------|------------|------------|
| CODE        | CODE        |  | HEIGHT | LAMPING    | DRIVERS    |
| CA/TBD/     | TBD         | To be determined. Call ALW with your project requirements so we can specify the appropriate components for your application. | TBD    | TBD        | TBD        |

# **COOPER WAVELINX**

| ALW PRODUCT | MFR PRODUCT                    | DESCRIPTION   | SENSOR     | COMPATIBLE | COMPATIBLE                           |
|-------------|--------------------------------|---|------------|------------|--------------------------------------|
| CODE        | CODE                           |   | HEIGHT     | LAMPING    | DRIVERS*                             |
| CW/WAA/     | OEM-MSP3IVMVDC1EP<br>+ OEM-WAA | Cooper Wavelinx Pro wireless integral control + occ/daylight sensor | 8ft - 15ft | STD        | V00, V01, or<br>EL0<br>(120V-277VAC) |

\*V00 will include an EldoLED Optotronics 0-10V LED driver programmed to 1% dimming with dim-to-off curve.

V01 will include an EldoLED Optotronics 0-10V LED driver programmed to 1% dimming.

ELO will include an EldoLED SoloDrive 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve.

# **ENCELIUM**

| ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE | DESCRIPTION   | SENSOR<br>HEIGHT | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*       |
|---------------------|---------------------|---|------------------|-----------------------|------------------------------|
| E0 (01 M (          | CLM DIM             | Encelium integral wireless connected lighting module        | N/A              | STD                   | V00 or DALI<br>(120V-277VAC) |
|                     |                     |   | N/A              | Tunable White         | DALI<br>(120V-277VAC)        |
| 50 (515 (           |                     | Encelium integral SensiLUM wireless occ/<br>daylight sensor | 8ft - 20ft       | STD                   | VOO or DALI<br>(120V-277VAC) |
| EC/PIR/             | EN-CLM-PIR-DD-ZB    |   | 8ft - 20ft       | Tunable White         | DALI<br>(120V-277VAC)        |

\*V00 with SW lamping will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. DALI with SW lamping will include an EldoLED DEXAL (Self-powered DALI link driver) programmed to 1% dimming with dim-to-off curve. DALI with TW lamping will include an EldoLED DualDrive DALI/LEDcode2 driver programmed to 0.1% dimming with dim-to-off curve.

# **ENLIGHTED**

€ Enlighted

|                     | ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE     | DESCRIPTION  | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*            |
|---------------------|---------------------|-------------------------|--|-----------------------|-----------------------------------|
|                     | EN/IL/              | CU-4E-FMH + SU-5E-IL    | 0-10V control module + Enlighted One occ/<br>daylight sensor                         | STD                   | V00, V01, or EL0<br>(120V-277VAC) |
|                     | EN/CL/              | CU-4E-FMH + SU-5E-CL    | 0-10V control module + Enlighted Connected<br>Lighting occ/daylight sensor           | STD                   | V00, V01, or EL0<br>(120V-277VAC) |
| gral                | EN/IOT/             | CU-4E-FMH + SU-5E-IOT   | 0-10V control module + Enlighted IoT occ/<br>daylight sensor                         | STD                   | V00, V01, or EL0<br>(120V-277VAC) |
| te / High Bay Integ | EN/ILTW/            | KIT-SU-5E-D-IL          | Enlighted One wireless integral 2-wire occ/<br>daylight sensor for tunable white     | Tunable White         | DALI<br>(120V-277VAC)             |
|                     | EN/CLTW/            | KIT-SU-5E-D-CL          | Enlighted wireless integral Connected<br>Lighting 2-wire occ/daylight sensor for TW  | Tunable White         | DALI<br>(120V-277VAC)             |
|                     | EN/IOTTW/           | KIT-SU-5E-D-IOT         | Enlighted wireless integral IoT 2-wire occ/<br>daylight sensor for tunable white     | Tunable White         | DALI<br>(120V-277VAC)             |
|                     | EN/HIL/             | CU-4E-FMH + SU-5S-H-IL  | 0-10V control module + Enlighted One high bay surface mount sensor                   | STD                   | V00, V01, or EL0<br>(120V-277VAC) |
|                     | EN/HCL/             | CU-4E-FMH + SU-5S-H-CL  | 0-10V control module + Enlighted Connected<br>Lighting high bay surface mount sensor | STD                   | V00, V01, or EL0<br>(120V-277VAC) |
| Remo                | EN/HIOT/            | CU-4E-FMH + SU-5S-H-IOT | 0-10V control module + Enlighted IoT high bay surface mount sensor                   | STD                   | V00, V01, or EL0<br>(120V-277VAC) |

\*V00 with STD lamping will include an EldoLED Optotronics 0-10V LED driver programmed to 1% dimming with dim-to-off curve.

V01 with STD lamping will include an EldoLED Optotronics 0-10V LED driver programmed to 1% dimming.

ELO with STD lamping will include an EldoLED SoloDrive 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve.

DALI with TW lamping will include a Signify Xitanium SR Flextune LED driver programmed to 1% dimming with dim-to-off curve.

# **LUTRON ATHENA**

LU/VRF/\_\_\_

|  | ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE | DESCRIPTION   | SENSOR<br>HEIGHT | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*      |
|--|---------------------|---------------------|---|------------------|-----------------------|-----------------------------|
|  | LU/AWNR/            |                     | Lutron Athena integral wireless RF control              | N/A              | STD                   | V00 or EL0<br>(120V-277VAC) |
|  |                     | A-WIN-DOT-KE-XX     |   | N/A              | Tunable White         | DALI<br>(120V-277VAC)       |
|  |                     |                     | Lutron Athena integral wireless occ/<br>daylight sensor | 8ft - 12ft       | STD                   | V00 or EL0<br>(120V-277VAC) |
|  | LU/AWNS/            | A-WIN-D01-OCC-XX    |   | 8ft - 12ft       | Tunable White         | DALI<br>(120V-277VAC)       |

\*V00 will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. ELO will include an EldoLED SoloDrive with Aux 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve. DALI with TW lamping will include an EldoLED Optotronics TW Dali LED driver programmed to 1% dimming with dim-to-off curve (Model # OTi50W/120-277/1A4/2CH TW L or similar compatible model).

**LUTRON VIVE ALW PRODUCT MFR PRODUCT** SENSOR **COMPATIBLE COMPATIBLE** DESCRIPTION CODE CODE HEIGHT LAMPING **DRIVERS\*** Lutron Vive integral RF wireless fixture DALI

| LU/VDO/ | DFCSJ-0EM-0CC | Lutron Vive integral RF wireless fixture control + occ/daylight sensor | 8ft - 12ft | STD | DALI<br>(120V-277VAC) |
|---------|---------------|--|------------|-----|-----------------------|

N/A

STD

(120V-277VAC)

\*DALI will include a EldoLED DEXAL (Self-powered DALI link driver) programmed to 1% dimming with dim-to-off curve.

control

DFCSJ-OEM-RF

# **NX CONTROLS - WIRED**

| ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE     | DESCRIPTION  | SENSOR<br>HEIGHT | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*      |
|---------------------|-------------------------|--|------------------|-----------------------|-----------------------------|
| NX/NXE/             | NXFM-LV                 | NX wired integral fixture module, no sensor                | STD              | STD                   | V00 or EL0<br>(120V-277VAC) |
| NX/NXERM/           | NXFM-LV +<br>NXSMP2-LMI | NX wired integral fixture module + occ/<br>daylight sensor | 8ft - 12ft       | STD                   | V00 or EL0<br>(120V-277VAC) |

\*V00 will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. ELO will include an EldoLED SoloDrive with Aux 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve.

# **NX CONTROLS - WIRELESS**

| ALW PRODUCT<br>CODE | MFR PRODUCT<br>CODE     | DESCRIPTION   | SENSOR<br>HEIGHT | COMPATIBLE<br>LAMPING | COMPATIBLE<br>DRIVERS*      |
|---------------------|-------------------------|---|------------------|-----------------------|-----------------------------|
| NX/NXW/             | NXFM-LV + NXRM2-H       | NX wireless integral fixture module + bluetooth radio module, no sensor | N/A              | STD                   | V00 or EL0<br>(120V-277VAC) |
| NX/NXWRM/           | NXFM-LV +<br>NXSMP2-LMI | NX wireless integral fixture module +<br>bluetooth occ/daylight sensor  | 8ft - 12ft       | STD                   | V00 or EL0<br>(120V-277VAC) |

\*V00 will include an EldoLED Optotronics with Aux 0-10V LED driver programmed to 1% dimming with dim-to-off curve. ELO will include an EldoLED SoloDrive with Aux 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve.

# WATTSTOPPER

| ALW PRODUCT | MFR PRODUCT             | DESCRIPTION   | SENSOR     | COMPATIBLE | COMPATIBLE                           |
|-------------|-------------------------|---|------------|------------|--------------------------------------|
| CODE        | CODE                    |   | HEIGHT     | LAMPING    | DRIVERS*                             |
| WA/LMFS/    | LMFI-111 + LMFS-<br>601 | Wattstopper wireless fixture control +<br>occ/daylight sensor | 8ft - 12ft | STD        | V00, V01, or<br>EL0<br>(120V-277VAC) |

\*V00 will include an EldoLED Optotronics 0-10V LED driver programmed to 1% dimming with dim-to-off curve.

V01 will include an EldoLED Optotronics 0-10V LED driver programmed to 1% dimming.

ELO will include an EldoLED SoloDrive 0-10V LED driver programmed to 0.1% dimming with dim-to-off curve.

# **FACTORY CONTROLS**

Factory controls are non-networked analog sensors. They have basic photocell/occupancy functionality that can be adjusted in the field.

| V00, V01, or<br>EL0<br>(120V-347VAC)      |
|---|
| V00, V01, EL0,<br>or DMX<br>(120V-347VAC) |
|   |
|   |

### Will ALW recommend a controls system for my project?

While ALW will provide guidance for integrating controls on a project, it's the agent's responsibility to specify the appropriate controls brand listed on the project schedule and clearly specify the exact part number, quantity, and mounting location for each fixture type. There may be cases where various part numbers are embedded in the same fixture type, such as normal circuit and emergency circuit controls. Just let us know exactly what you need and we'll make it happen.

### I know the controls brand but don't have full information yet to give you exact part numbers and quantities. How to I price my project?

Write in TBD (To Be Determined) in your fixture code (Ex. Lutron Athena will look like this: LU/TBD/TBD) For the time being, ALW will price you at the highest price point that manufacturer offers and then adjust as we receive more details on the project.

### Why are so many brands and part numbers listed in this Controls Guide?

Each ALW agency/partner reps different controls manufacturers. We've listed the most common embedded solutions we see specified. If you have other controls manufacturers or part numbers you'd like to see on this list contact your ALW Regional Sales Manager.

### Can I specify an exact LED driver to be paired with the controls I'm specifying?

Yes, as long as the controls manufacturer has approved the LED driver compatibility. Tell us the driver part number you need and we can review the setup for you.

### I'm specifying direct+indirect lamping for my fixture. How will the controls be wired?

For newer ALW product families, there is an option to spec Single Circuit Control (1C) where direct/indirect circuits are combined in the fixture body, or Independent Circuit Control (2C) where D/I circuits are separated. Choosing 1C will have one embedded control operate both D/I circuits. Choosing 2C will have two embedded controls (one to operate each circuit).

Legacy fixtures combine the direct+indirect lamping circuits so a single embedded control operates both circuits simultaneously. This saves you cost as independent control doubles the embedded components. If you want independent control of each circuit tell us your project details and we can build the fixture as needed.

### Does ALW recommend a certain quantity of occupancy/photocell sensors for a long linear fixture run?

Most occ/photocell sensors have an 8-10ft diameter sensing web so for an analog device such as a standalone control, an occupancy sensor would typically be mounted every 8ft-10ft in worst-case scenarios. However, new sophisticated control systems operate within a mesh network, allowing the commissioner to pair multiple devices together so when one device detects occupancy the other paired devices respond. Send us the controls layout and mounting locations for the project and we can adjust the sensor quantities as needed.

### I need a UL924 device wired with my control emergency circuit. How do I specify this?

Tell us the UL 924 device part number you need and provide us a wiring diagram from the electrical engineer if the fixture is to be wired differently than illustrated in the UL 924 device spec sheet.

### Will ALW source/install the controls components or is it the agency's responsibility?

As a standard, ALW will source and install the specified components at our factory. However, if the agent prefers to buy the components and ship directly to ALW we can accommodate this. We'll typically charge a small fee for each embedded control, which includes the additional mounting plates, wiring, etc., to install the device. We will send you a Furnished By Others (FBO) form for you to fill out to include a hard-copy with the components when they are shipped to our factory. We'll need you to provide us with tracking information so we can plan the project ESD accordingly.

### Do embedded controls fall under ALW's Quickship program?

No. Most controls manufactures require a completed project form to be included with each project when placing a purchase order for components and ALW cannot stock most of these components. It's important to place your purchase order with ALW with enough time to receive your completed fixtures on time. Typical lead times for most embedded controls are 2-6 weeks.

### What are Standalone Controls?

These are analog photocell/occupancy sensors that don't operate with a networked control system and allow the user to achieve common occupancy and photocell functionality.

### Are your fixtures compatible with remote sensors and load controllers (aka: power packs, zone controllers, etc.)

Yes. If embedded controls or luminaire level lighting controls (LLLC) aren't required for your project you can also source a load controller from the manufacturer of your choice. Load controllers can be purchased at your local distributor. Typically, these load controllers are offered in loads  $\geq$  10A and are intended to group multiple fixtures in a set control zone. In most cases, these load controllers are compatible with any 0-10V driver ALW offers. Some load controllers may be designed for use with DALI drivers, Lutron Ecosystem drivers, or other driver types. Simply refer to the load controller spec sheet and specify the appropriate LED driver of your choice on ALW's fixture spec sheets. You do not need to choose an embedded controls spec if you're planning to install remote load controllers. If you have questions on compatibility contact your RSM or Inside Sales.

### For each brand, sensors and control module part numbers are included in the description. Will ALW supply required connecting cables, etc.?

Yes. Manufacturer sensors, nodes, and control module part numbers are listed to provide clarification of what major components you will receive with your lighting fixtures. Applicable connecting cables, wiring harness, etc. will also be provided for a fully functional embedded controls lighting fixture.



For detailed product information, spec sheets, and photometrics please visit our website. www.alw-inc.com

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