

Features

- Constant Voltage output
- UL, cULus listed, Class2 unit, Type HL rated, FCC
- Universal AC input: 100-277VAC
- Built-in active power factor correction (PFC)
- $\leq 0.48W$ standby power consumption
- Up to 92% efficiency
- 10-100% load capacity
- Protected from Short Circuits, Overload and Overheat
- Logarithmic dimming curve
- DALI-2 dimming
- D4i Features
- No PWM influence on colour index
- IP66 protection for dry, damp and wet locations
- NFC function
- Flicker-free, 4KHz stroboscopic exemption
- 0 to 100% dimming range, 0.1% LED start available
- Suitable for LED lighting
- Cooling by free air convection



Specifications

OUTPUT		INPUT			
DC Voltage	24V	Voltage Range		100-277VAC	
Rated Current	2 x 2A	Frequency Range		47-63Hz	
Rated Power	96W	Power Factor (Typ.) @Full Load		≥ 0.98 @120VAC	≥ 0.96 @277VAC
Voltage Tolerance	$\pm 0.5V$	THD (Typ.) @Full Load		$\leq 10\%$ @120VAC	$\leq 10\%$ @230VAC / $\leq 15\%$ @277VAC
Voltage Regulation	$\pm 0.5\%$	Efficiency (Typ.) @Full Load		90% @120VAC	91% @230VAC/277VAC
Load Regulation	$\pm 1\%$	Inrush Current (Typ.)		28A, 50%, 328 μ s @120VAC	88A, 50%, 181 μ s @230VAC / 106A, 50%, 400 μ s @277VAC
		Leakage Current		<math>< 0.5mA</math>	
		Standby Power Consumption		0.26W @120VAC	0.38W @230VAC / 0.48W @277VAC

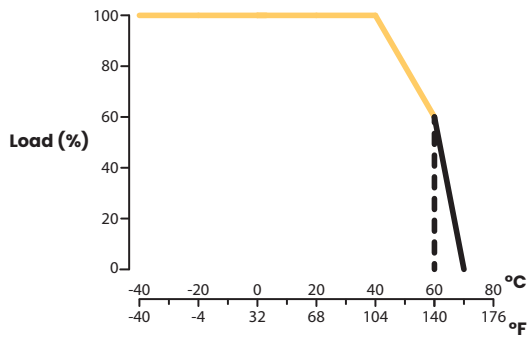
PROTECTION	
Short Circuit	Hiccup mode. After faulty condition is corrected, Driver recovers automatically
Overload	@ $\leq 120\%$: Hiccup mode. After faulty condition is corrected, Driver recovers automatically
Overheat	@ $\geq 55^{\circ}C \pm 5^{\circ}C$ / @ $\geq 131^{\circ}F \pm 9^{\circ}F$: 50% Voltage Output @ $\geq 60^{\circ}C \pm 5^{\circ}C$ / @ $\geq 140^{\circ}F \pm 9^{\circ}F$: 0% Voltage Output Once cooled down, Driver recovers automatically

ENVIRONMENT	
Working Temperature	$-40^{\circ}C \sim +70^{\circ}C$ / $-40^{\circ}F \sim 158^{\circ}F$ (See Derating Curve below)
Working Humidity	20% ~ 95% Relative Humidity, Non-Condensing
Storage Temperature & Humidity	$-40^{\circ}C \sim +80^{\circ}C$ / $-40^{\circ}F \sim 176^{\circ}F$ / 10% ~ 95% Relative Humidity
Temperature Coefficient	$\pm 0.03\%/^{\circ}C$ ($0^{\circ}C \sim 50^{\circ}C$) / $\pm 0.054\%/^{\circ}F$ ($32^{\circ}F \sim 122^{\circ}F$)
Vibrations	10 ~ 500Hz, 5G 12min. / 1 cycle, 72 min. period each. / Along X, Y and Z axis

SAFETY & ELECTROMAGNETIC COMPATIBILITY (EMC)			OTHERS		
Safety Standards	EN61347-1, UL8750 CAN/CSA C22.2 No.250.13 (US) & EN61347-2-13 (EU)		Net Weight	1.02Kg	
Withstand Voltage	Input to Output: 1.80KVAC	Input to Frame Ground: 1.8KVAC / Output to Frame Ground: 0.5KVAC			
Isolation Resistance	Input to Output: 100M Ω / 500VDC / 25 $^{\circ}C$ (77 $^{\circ}F$) / 70% Relative Humidity		Dimensions (L x W x H)	241 x 125 x 41.3mm / 9.49 x 4.92 x 1.61in	
EMC Emission	EN55015, EN6100-3-2, EN61000-3-3 $\geq 50\%$ load & FCC Part 15, Subpart B				
EMC Immunity	EN61000-4-2,3,4,5,6,11 & EN61547				

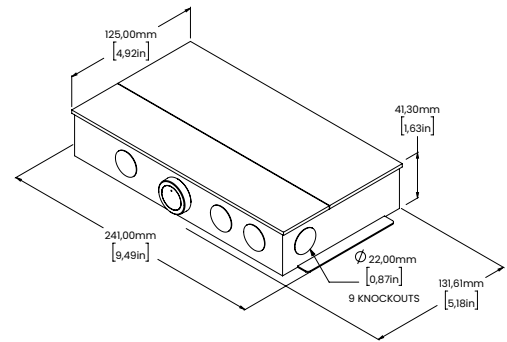
i Unless mentioned otherwise, all specifications are measured at 120VAC input, rated load and 25 $^{\circ}C$ (77 $^{\circ}F$) ambient temperature. Reduce input voltage load to extend the driver's life.

Derating Curve



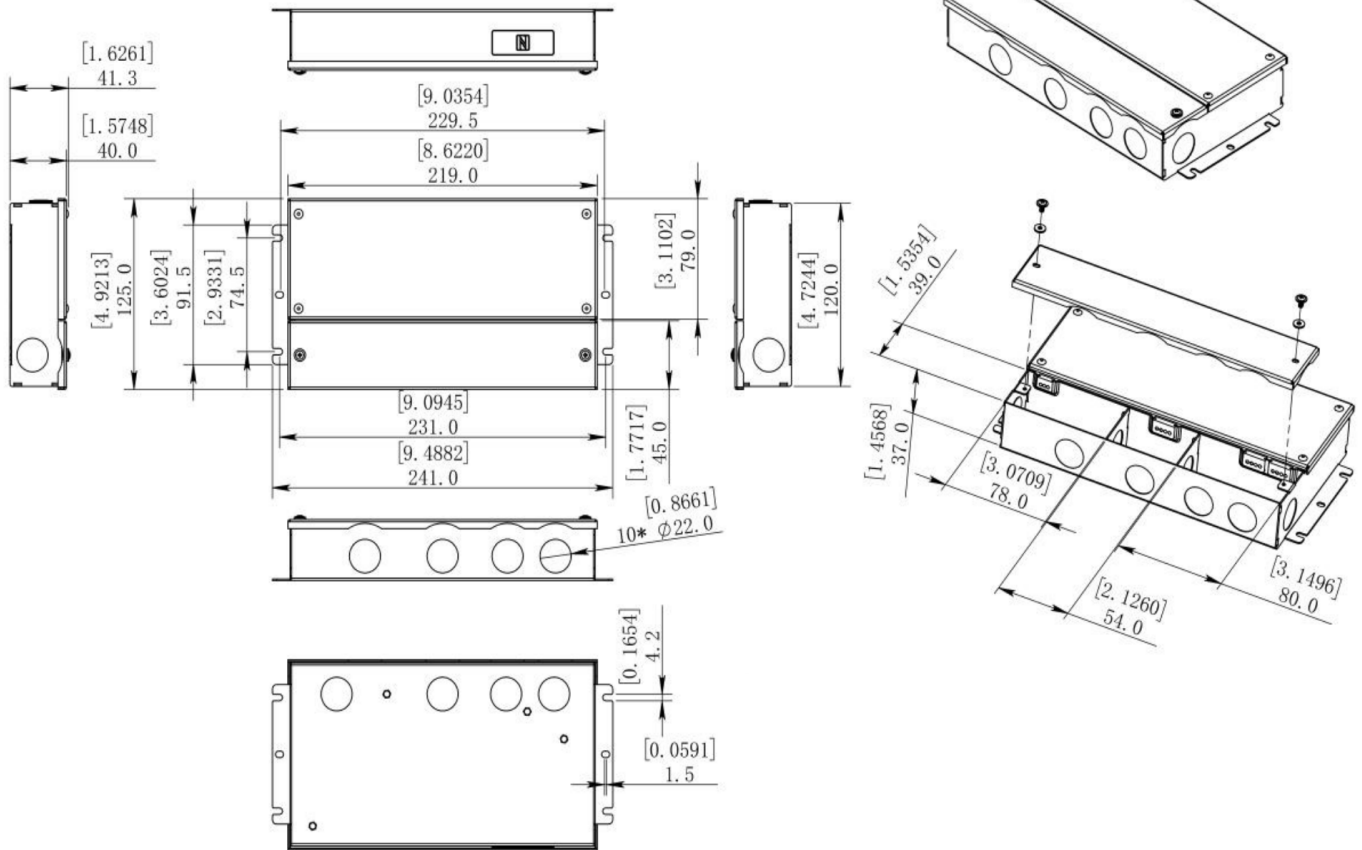
Ambient Temperature
 To extend Driver's life, derate according to the ambient temperature.

Dimensions



Dimensions with Athena Node.
 One knockout is used for installation.

Dimensions



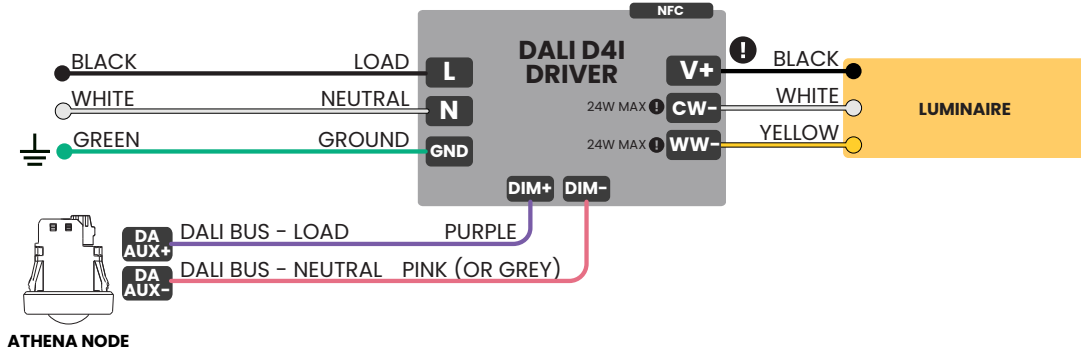
241 x 125 x 41.3mm
 9.49 x 4.92 x 1.61"

[Inch]
 Millimetre

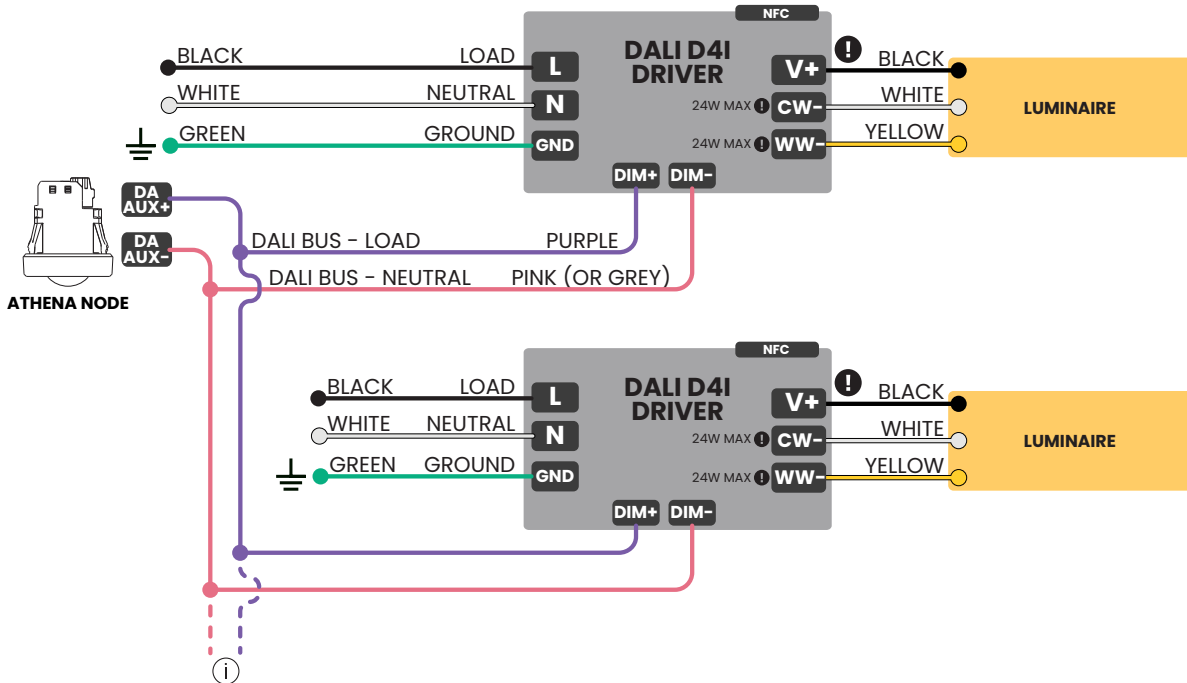
Connection Diagrams

1. This Driver should be installed by a qualified professional.
2. Make sure the Driver is installed with adequate ventilation to allow heat dissipation.
3. Make sure the wiring is correct before testing to avoid damage to Luminaire and Power Supply.
4. **DO NOT ATTEMPT TO REPAIR THE DRIVER.**

DALI DIMMING SINGLE DRIVER



DALI DIMMING MULTIPLE DRIVERS



! Lumen Warm recommends **NOT TO EXCEED 80%** of the Driver's load capacity for longer durability.

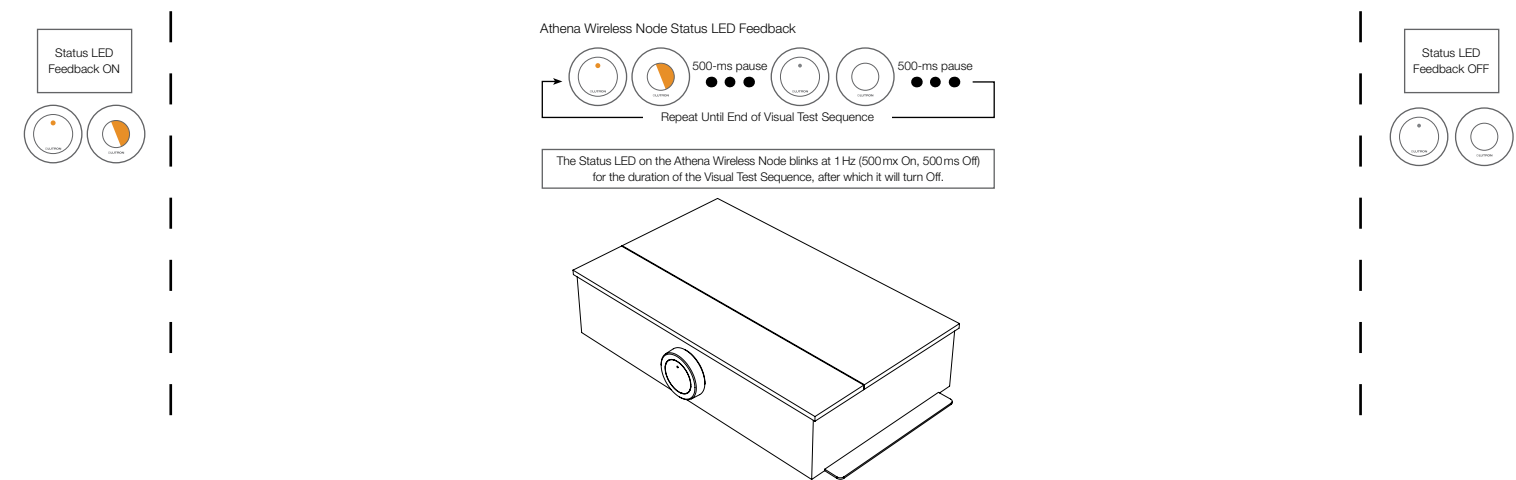
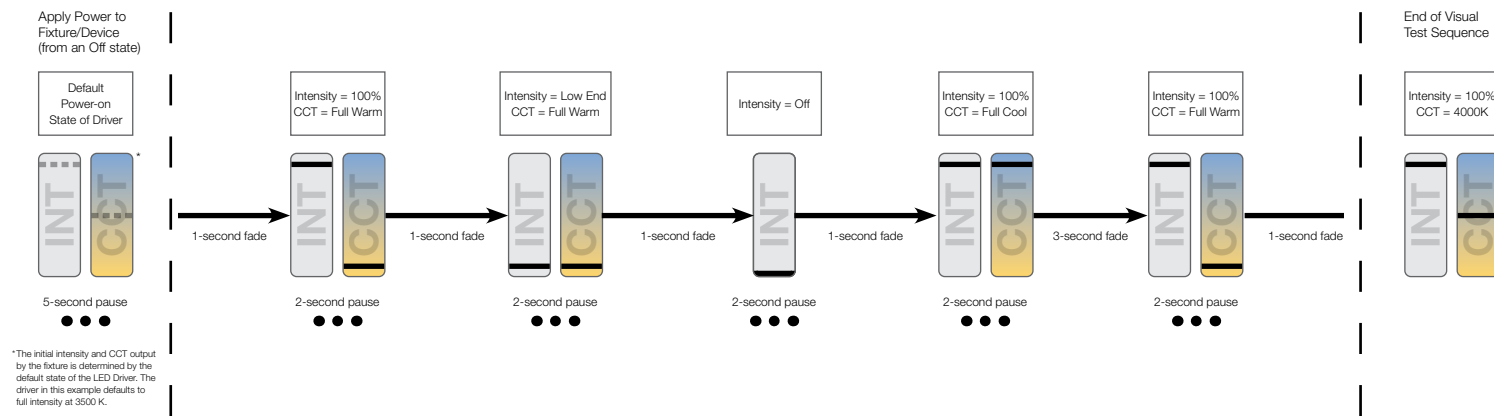
i Lumen Warm recommends matching wire colours to corresponding LED terminals to prevent programming issues.

i Only one DALI power is needed into the DALI bus. No extra DALI power is needed if Master or Dimmer already provides power to DALI bus.

i Athena Wireless Node controls up to 5 Drivers depending on supply current.
IEC 62386 Part 250 requires a minimum guaranteed supply current of 50mA with a maximum of 250mA.

Athena Wireless Node Test Sequence

The Athena Wireless Node will run the following Visual Test Sequence every time the unit is powered on until it is commissioned into an Athena control system. The test sequence is used to verify the fixtures are working as expected once installed, but not yet commissioned. It was developed to assist electrical contractors in the field.

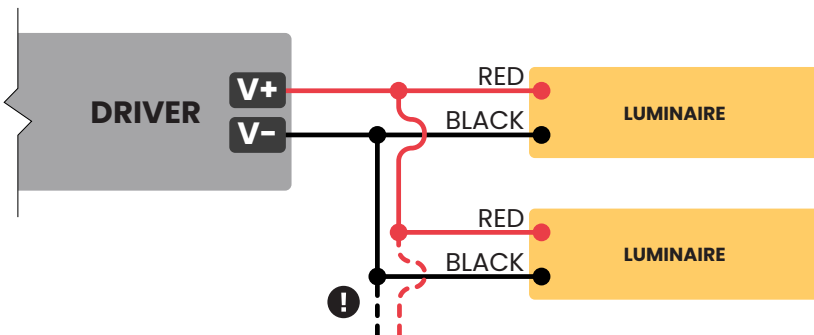


Multiple Luminaires Wiring Methods

IN PARALLEL, DAISY CHAIN METHOD



IN PARALLEL, PARALLEL STANDARD METHOD



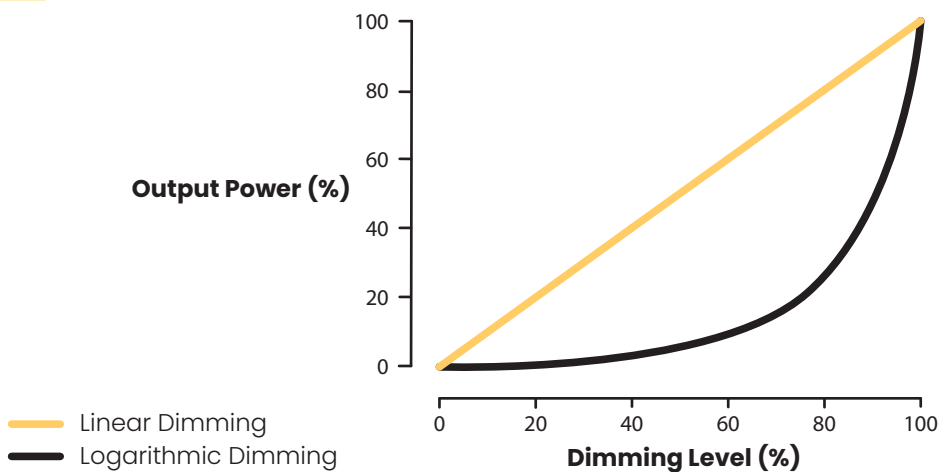
ⓘ Both connection methods can be combined if applicable.

ⓘ This is a simplified diagram. Use for reference only.

⚠ Lumen Warm recommends **NOT TO EXCEED 80%** of the Driver's load capacity for longer durability.

ⓘ Lumen Warm recommends matching wire colours to corresponding LED terminals to prevent programming issues.

Dimming Curves



Output Voltage Setup

- When installing a Driver remotely, a voltage drop may occur due to the wire length between the Luminaire and the Driver.
- **VOLTAGE LEVEL AT LUMINAIRE’S ENTRY MUST NOT EXCEED 24V, OR LUMINAIRE MAY GET PREMATURELY DAMAGED.**
- Check Voltage Level at the end of output wiring just before the Luminaire. Ensure it reads 24V.

SETUP INSTRUCTIONS WITH NFC DEVICE

- Driver’s voltage output can be read and adjusted by using the ProNFC app or a NFC handheld device by holding it close to the Driver’s NFC tag.
- Voltage range is divided in 10 levels. Each level is 0.2V. Default voltage output is Level 1.

OUTPUT VOLTAGE LEVELS										
Rated Voltage	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8	Level 9	Level 10
24V	24V	24.22V	24.44V	24.66V	24.88V	25.10V	25.32V	25.54V	25.66V	26V

Driver Address Setup

- Driver’s default DALI Address is set to 255.
- Address can be changed with any of these devices:



- **NFC device:**
Use a NFC handheld device or hold handheld device close to driver’s NFC device.



- **ProNFC app on smartphone:**
Hold smartphone close to driver’s NFC tag.

Driver Address Setup (Cont.)

SETUP INSTRUCTIONS WITH ProNFC APP

1 Install the ProNFC app using the QR codes below.

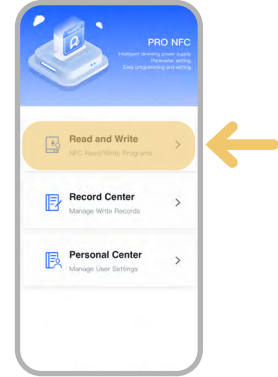


iOS

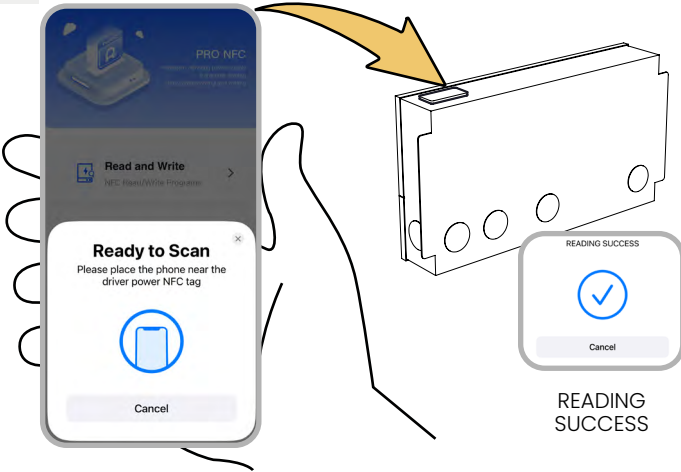


Android

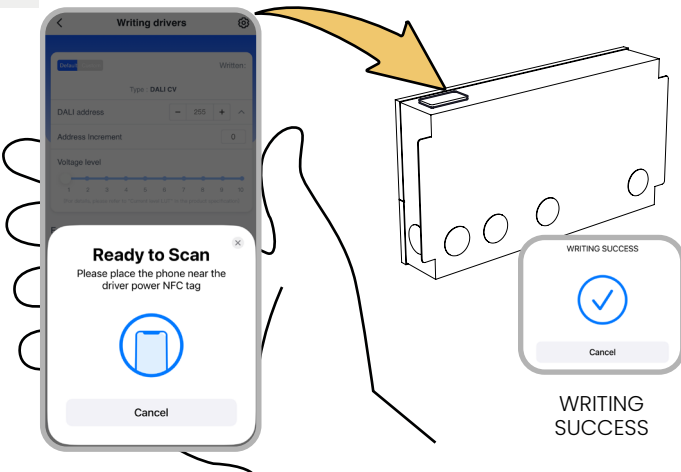
2 Keep the phone away from Driver. Select *Read and Write*.



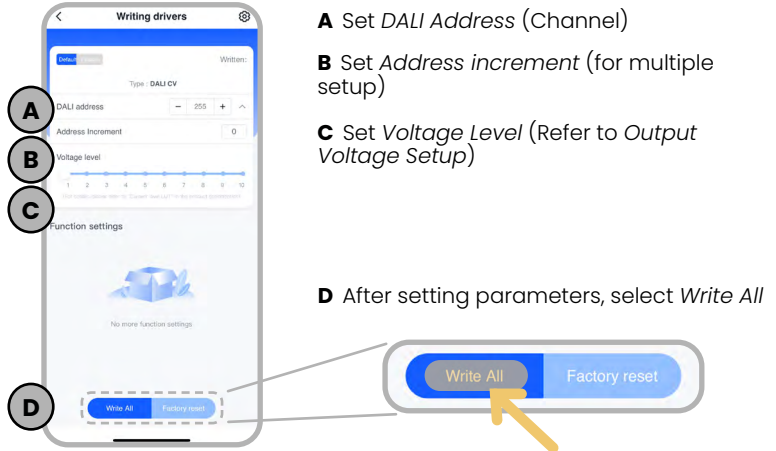
3 Hold the phone close to Driver's NFC tag.



5 Hold the phone close to Driver's NFC tag.



4 Set parameters as desired.



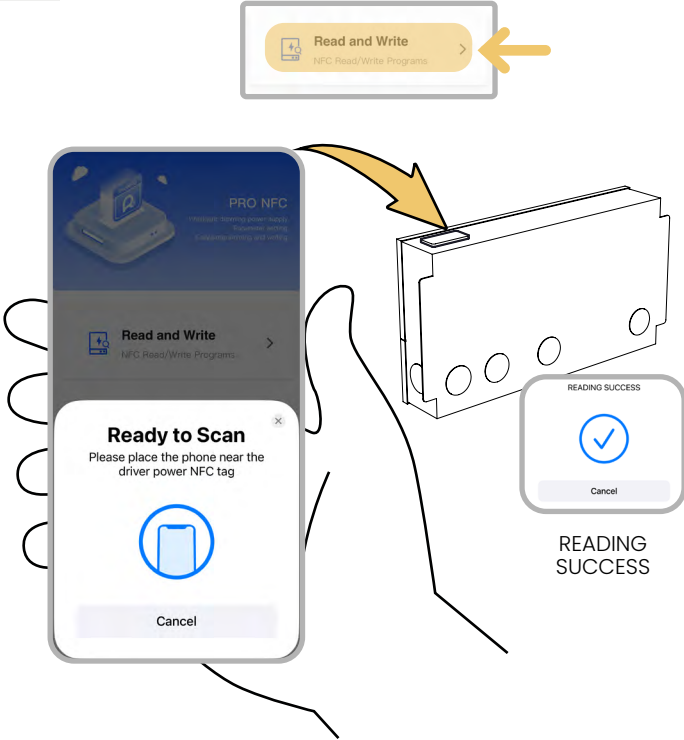
- A** Set *DALI Address* (Channel)
- B** Set *Address increment* (for multiple setup)
- C** Set *Voltage Level* (Refer to *Output Voltage Setup*)

D After setting parameters, select *Write All*

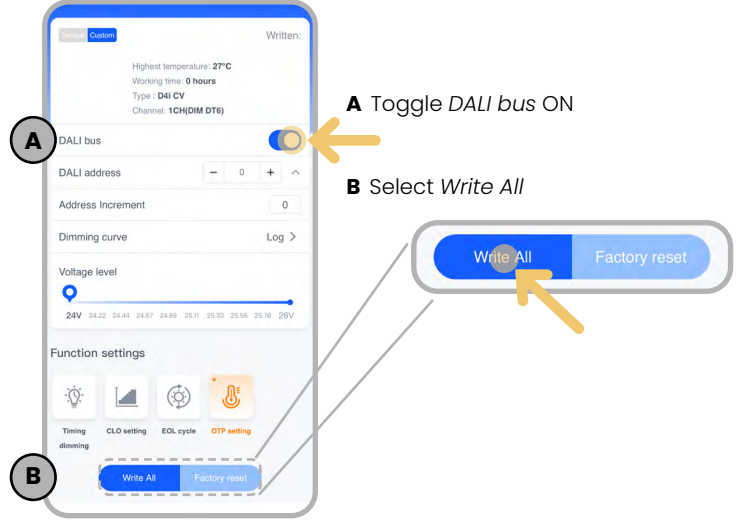
Athena Node and D4i Features Activation

SETUP INSTRUCTIONS WITH ProNFC APP

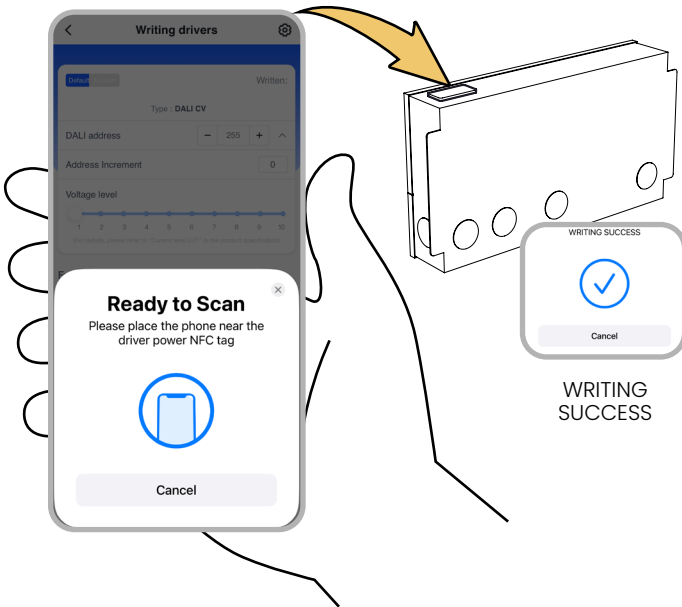
1 With Driver powered, scan the Driver as per previous setup's steps 1 to 3.



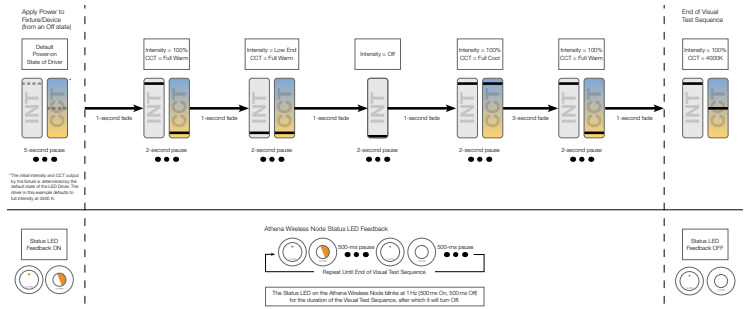
2 Proceed with DALI Bus activation.



3 Hold the phone close to Driver's NFC tag again.



4 Complete Athena Wireless Node test sequence.



! Refer to page 4 of this document. **!**