

Ra RS-485

Automated Grow Light Controller with Digital Spectrum Control

MODEL RA-485 · NURAVINE LIGHTING

Ra is a dedicated grow light controller that automates spectrum and dimming. The RS-485 model controls multi-channel digital fixtures with per-channel spectrum control, a live power-share view, and on-device temperature safety.

Lighting recipes run on-device, so your lights follow a consistent day and night cycle even without an internet connection. Add the wired temperature sensor and Ra steps your lights down automatically when the canopy runs hot, then returns to schedule when temperatures recover. Ra is powered by any standard 5V USB-C charger.



- RS-485 digital control of multi-channel fixtures
 - Live Total Power view across channels
 - Up to 4 zones on independent 24-hour schedules
 - Powered by 5V USB-C
- Per-channel spectrum control (Main, Blue, UVA, Far-Red)
 - On-device temperature safety with tiered responses
 - Recipes run on-device, even offline
 - Designed and assembled in Woodstock, NY

LIGHTING CONTROL		TEMPERATURE SAFETY	
Control signal	RS-485 digital, per-channel spectrum and intensity	Sensor input	3-position terminal for the wired temperature probe (optional)
Control port	4-position terminal: +24V, A, B, GND	Probe type	Wired DS18B20 digital temperature sensor
Fixture link	RJ12 to supported fixtures (A/B/GND); fixture control switch set to EXT	Probe range	-55 to 125 C; accuracy +/-0.5 C from -10 to 85 C
Supported fixtures	Solark 1000W (4-ch independent or dependent), Solark 250W, Solark 250W x4	Responses	Up to 3 tiers above your thresholds: dim to %, dim further, shut off
Channels	Main (White + Red), Blue, UVA, Far-Red	Example	Dim to 50% above 45 C, dim to minimum above 55 C, shut off above 65 C
Power models	Dependent (shared supply, Main sets total) or independent per channel	Recovery	Automatic return to schedule with hysteresis buffer
Power view	Live Total Power bar: overall draw vs fixture rating, per-channel segments	Fail-safe	Sensor failure triggers the most severe response until readings return
Minimum brightness	12% floor; low-start boost pulses 15% for 0.5 s when starting below 15%	Independence	Runs on-device, works offline, cannot be overridden by a schedule

SCHEDULING AND RECIPES	
Modes	Off, Manual, Schedule (per zone)
Zones	Up to 4 zones on independent 24-hour schedules
Recipes	24-hour cycle with multiple periods; up to 10 custom recipes per device
Per-period settings	Time, label, per-channel intensity, transition, duration
Transitions	Instant, Linear, or Natural (sunrise/sunset curve)
Offline behavior	Recipes and temperature safety run on-device; no cloud required

CONNECTIVITY AND CLOUD	
Wi-Fi	2.4 GHz only
Provisioning	Ra Setup hotspot with captive portal; token-based registration
Cloud platform	Nuravine Cloud at app.nuravine.com (browser-based, no install)
Remote control	Scheduling, presets, and manual control from any browser
Firmware updates	Over-the-air (OTA) with automatic rollback

ELECTRICAL	
Power input	5V USB-C; any standard USB-C power adapter (not included)
Power consumption	Under 10 W
Control output	RS-485 (A/B differential pair), +24V available on terminal

ENVIRONMENTAL AND PHYSICAL	
Environment	Indoor, dry location
Origin	Designed, built, and tested in Woodstock, New York
Warranty	2-year limited hardware warranty

FUNCTIONAL CAPABILITIES

Spectrum Control

- Shape vegetative and generative growth with per-channel spectrum
- Dependent mode: Main channel sets the power budget, spectrum channels share it
- Independent mode: each channel driven from its own setting, auto-trimmed to the fixture limit

Installation Notes

- Swapped A/B wiring is harmless and the most common cause of no response
- Keep the control cable connected while fixtures are powered [1]
- Temperature probe cable extends with an ordinary coupler and wire

IN THE BOX

- 1x Ra RS-485 controller
- Wired temperature sensor included in the RA-485-TEMP bundle

ORDERING INFORMATION	
MODEL / SKU	DESCRIPTION
RA-485	Ra grow light controller, RS-485 digital control
RA-485-TEMP	Ra RS-485 bundled with wired temperature sensor
RA-TEMP-SENSOR	Wired temperature sensor (DS18B20) for Ra RS-485
RA-0-10V	Ra grow light controller, 0-10V analog dimming

1. Supported fixtures that lose their control signal while powered ramp to full brightness by fixture design. Keep the control cable connected while fixtures are powered.

Nuravine LLC

1574 New York 28, West Hurley, NY 12491, USA
nuravine.com · (845) 668-6613 · info@nuravine.com

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