

DIGI-LUMEN Ultraviolet + Far-Red

Instruction Guide

Using the UV + Far-Red Channel on the Digi-Lumen 780 W or 888 W Extreme LED

The Digi-Lumen 780 W and 888 W Extreme fixtures feature an inbuilt driver and Dual Spectrum Ultraviolet (UV) + Far-Red (FR) technology. The UV and Far-Red diodes operate as a single supplemental channel. They cannot be controlled independently. Adjusting the channel applies the same intensity to both UV and Far-Red simultaneously.

Key Features of the UV + Far-Red Channel

- UV (~395–400 nm): Triggers stress responses that boost secondary metabolites (resins, terpenes, flavonoids).
- Far-Red (~730 nm): Influences morphology, shade avoidance, stem elongation, and flowering responses.
- Combined Operation: One setting controls both spectra. This simplifies use while delivering synergistic benefits.
- Primary Use: Supplemental to the main full-spectrum output for enhanced quality in flowering and fruiting stages.

Preferred Controller: Digi-Lumen Enviro Pro

The Digi-Lumen Enviro Pro is the recommended controller. It offers a 5-inch touchscreen, mobile app support, and comprehensive environmental and lighting control, including 0–10 V dimming signals for precise management of the 780 W or 888 W Extreme channels.

Advantages

- Independent or scheduled control of the UV + FR supplemental channel
- Integration with temperature, humidity, CO₂, VPD, and other sensors
- Programmable timers, ramps, and automation (for example, end-of-day FR boost)
- Ethernet and app connectivity for remote monitoring

Safety Precautions

- UV light is invisible and can harm eyes and skin. Avoid direct exposure and always use protective eyewear when the channel is active.
- Start low (25%) and monitor plants carefully for stress.
- Limit UV exposure durations, especially at higher settings.

How to Operate the UV + Far-Red Channel

The Fixture Control Panel

MANUAL DIMMING STEPS 780 W



Manual dimming panel, 780 W Extreme.

MANUAL DIMMING STEPS 888 W



Manual dimming panel, 888 W Extreme.

Each fixture has two knobs and a pair of RJ12 ports:

- UV + FR knob: EXT, OFF, 25%, 50%, 75%, 100%.
- Full Spectrum knob: EXT, OFF, then stepped wattage settings:
 - 780 W: 180 W, 360 W, 550 W, 720 W.
 - 888 W: 200 W, 400 W, 600 W, 800 W.
- 0-10 V Dimming IN / OUT ports: RJ12 connections for a controller and for daisy-chaining fixtures.
- EXT means external control. In the EXT position the knob hands control of that channel to a controller connected to the 0-10 V Dimming port.

Option 1: Manual Operation (Without the Enviro Pro)

Without a controller, run both channels from the knobs on the fixture. No controller or RJ12 cable is needed.

1. Before You Start

- Put on UV-protective eyewear. UV output is invisible, so the channel may be running even when it looks off.
- Both knobs can be adjusted while the light is running.
- Do not use the EXT position on either knob without a controller connected.

2. Set the Main Light

- Turn the Full Spectrum knob to the wattage your crop stage needs (refer to Supplementary: Setting the Full Spectrum Knob).
- Run the fixture on a standard mechanical or digital mains timer for your light cycle (for example 18/6 for vegetative, 12/12 for flowering).

3. Set the UV + Far-Red Level

- Turn the UV + FR knob to 25%, 50%, 75% or 100%. Both UV and Far-Red run at that level.
- Start at 25% and step up one setting at a time, no faster than every 7–10 days, while watching the plants.
- To switch the channel off, turn the UV + FR knob to OFF.

4. Recommended Manual Settings

- Vegetative: OFF or 25%. Optional, for more compact growth.
- Early Flower: 25% for the full light period.
- Mid–Late Flower: 50%, stepping to 75% if plants respond well.
- 100%: Use only with caution, close monitoring, and for limited times.
- Step back down a setting if leaves show bleaching, curling or tip burn.

5. Limitations of Manual Control

- Because the UV + FR channel runs off the same mains supply as the main light, a mains timer switches both on and off together. It cannot run the UV + FR channel on its own schedule.
- Settings are fixed steps of 25%. Finer adjustment needs a controller.
- End-of-day Far-Red boosts, sunrise/sunset ramps and short UV bursts are not possible without a controller, unless you turn the knob by hand at the right time each day.
- For scheduled UV + FR programs, upgrade to the Enviro Pro (below).

Option 2: Digi-Lumen Enviro Pro Controller (Preferred Method, Advanced & Recommended)

1. Installation & Connection

- Connect the controller to the fixture's 0–10 V Dimming IN port with an RJ12 cable. Daisy-chain additional fixtures from the OUT port.
- Turn both the UV + FR knob and the Full Spectrum knob to EXT so the controller can take over each channel.
- Power on the controller and fixture. The 5-inch touchscreen will display lighting controls.

2. Access Lighting Controls

- Navigate to the Lighting or LED Control section on the touchscreen or app.
- You will see separate sliders/channels for: main full-spectrum intensity, and the UV + Far-Red supplemental channel (single control).

3. Set UV + Far-Red Percentage

- Adjust the dedicated UV + FR slider or input field (0–100%).
- Example: Setting 40% runs both UV and Far-Red at 40% of maximum output.
- Save as a static setting or incorporate into automated schedules.

4. Programming Schedules (Best Practice)

- Create custom programs via the touchscreen or app.
- Example Flowering Schedule: Main lights 12/12 cycle at 80–100%. UV + FR: ramp to 30–50% during the last 2–4 hours of the light period, or run a short 15–30 minute End-of-Day (EOD) boost at 50% or higher to trigger Far-Red responses.
- Use VPD or temperature triggers for dynamic adjustments.
- Sunrise/sunset ramps are available for smooth transitions.

Recommended Usage Schedules (Enviro Pro)

- Vegetative: 10–25% UV + FR for 1–2 hours per day (optional, for more compact growth).
- Early Flower: 20–40% during the full light cycle.
- Mid–Late Flower: 40–70% for metabolite enhancement.
- EOD Far-Red: 30–50% or higher for the final 15–30 minutes of lights-on.
- Note: Use 100% only with caution, strong monitoring, and for limited times.
- Monitor PPFD and plant response; adjust gradually.

Troubleshooting

- No UV + FR output (manual): Check the UV + FR knob is set to 25% or higher, not OFF or EXT. In EXT with no controller connected, the channel will not respond to the knob.
- No response (Enviro Pro): Check both knobs are set to EXT, the RJ12 cable is in the IN port, and the controller firmware is current.
- UV Not Visible: This is normal, because UV is largely invisible. Confirm output with a UV meter or fluorescent card.
- Controller Issues: Restart the Enviro Pro or check app connectivity. Refer to the Enviro Pro manual for sensor calibration and advanced settings.

Supplementary: Setting the Full Spectrum Knob

The Full Spectrum knob sets the main white and red output. Without a controller, choose the step that suits your crop stage, then fine-tune with hanging height. The PPFD targets below are general guides; confirm at canopy level with a PAR meter where possible.

Crop stage	780 W setting	888 W setting	Target PPFD at canopy ($\mu\text{mol}/\text{m}^2/\text{s}$)
Seedlings and cuttings	180 W	200 W	200–400
Early vegetative growth	180–360 W	200–400 W	400–600
Late vegetative growth	360 W	400 W	600–800
Early flowering / fruiting	550 W	600 W	700–900
Mid to late flowering / fruiting	720 W	800 W	900–1,200

Tips for Manual Wattage Control

- Step up one setting at a time, giving plants 3–5 days to adjust before the next step.
- Seedlings and fresh cuttings are sensitive. Start on the lowest step and hang the light higher than for mature plants.
- PPFD above about 1,000 $\mu\text{mol}/\text{m}^2/\text{s}$ generally needs supplemental CO_2 , plus well-managed temperature, humidity and irrigation, to be used fully.
- If leaves show bleaching, curling or upward cupping at the top of the canopy, step down one setting or raise the light.
- In hot rooms, a lower step with the light hung closer can reduce heat load while keeping canopy PPFD similar.
- Never leave either knob on EXT without a controller connected.
- Set the UV + FR knob separately. See Option 1: Manual Operation.

The 780 W or 888 W Extreme can be run manually straight out of the box. Pairing it with the Enviro Pro controller unlocks professional-level spectrum scheduling for superior results.