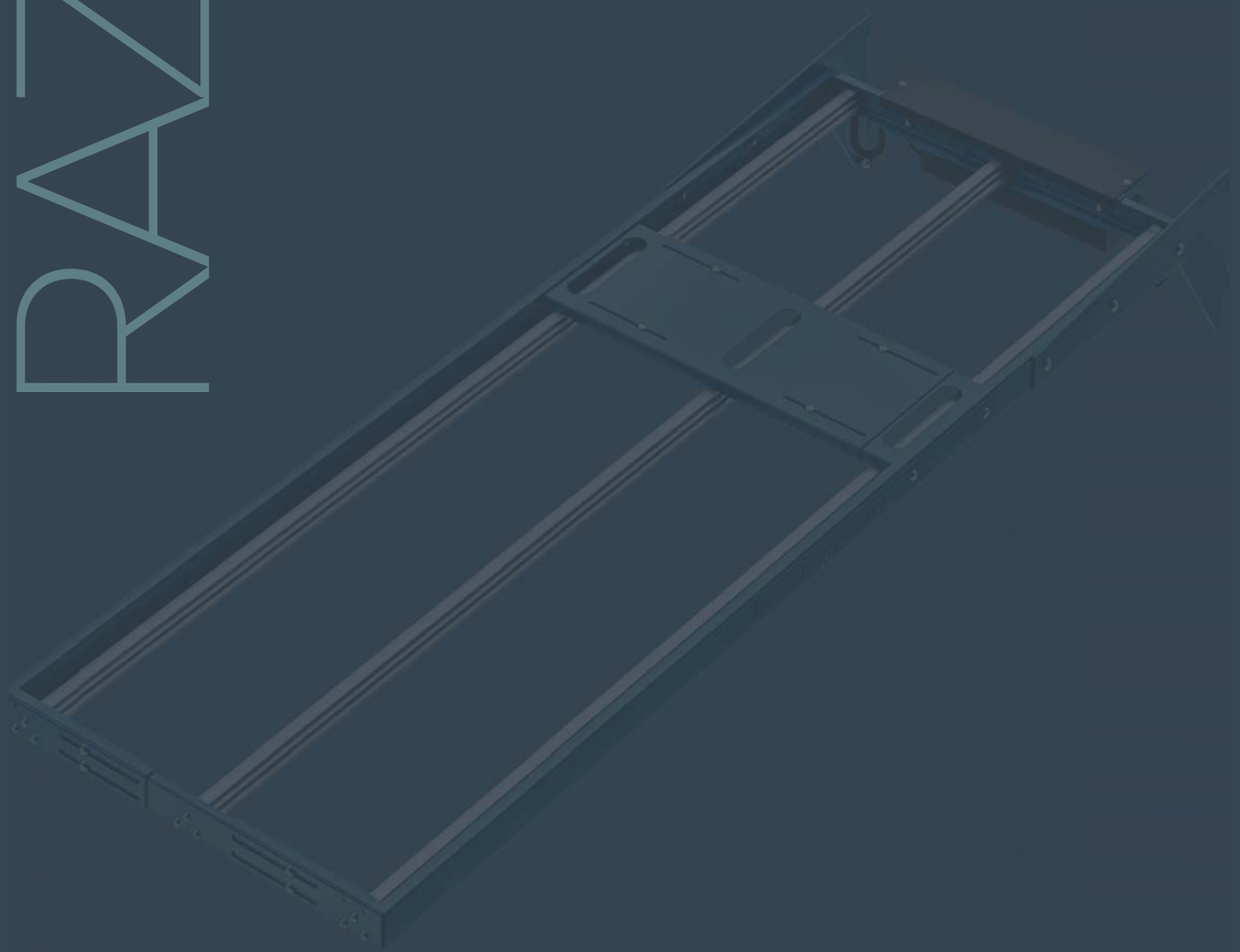
RAZR USER MANUAL

RAZRx **RR-X-P-1-06-N5-H**



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USER MANUAL ELEMENTS

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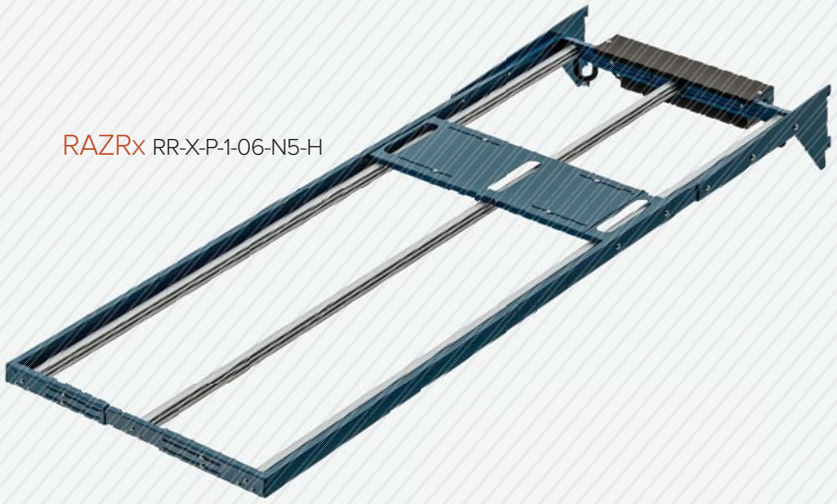

IMPORTANT SAFETY PRECAUTIONS and EXPLANATION of SYMBOLS

- Please read this manual thoroughly before attempting to install or operate any Fluence RAZR Series system.
- After successful installation and configuration of the system, be sure to retain this manual in a safe place for future reference. Safety is a key component to a long lasting and trouble free installation.
- It is important you read, fully understand, and observe the subsequent safety precautions. If you are not comfortable with the installation of high-performance lighting systems, you should seek the services of a qualified installation professional or call us for help.
- NOTICE: RAZR is a high-performance lighting system. Do not touch while in operation.
- Connect the system only to power sources of the correct voltage (as shown in this manual). Protect power cables from being pinched, walked on, or otherwise damaged. Be especially careful where the power cable enters the power outlet and the unit. Only connect the system to an electrical outlet or extension cord of appropriate type and rating.
- DO NOT defeat the safety purpose of a grounding or polarized plug by removing ground pins or using unsafe adapters. A polarized plug has two blades—one wider than the other. A grounding plug has a third ground prong in addition to the two main conductors. The wide blade or third grounding prong is provided for your safety. If the provided plug does not fit your outlet, consult an electrician to replace your obsolete outlet. If you replace the power cord, only use one of similar type and equal or greater current rating.
- The system should only be cleaned as directed in the manual. You should seek service for your system by qualified service personnel if any of the following occur:
  1. The power-supply cord or the plug has been damaged.
  2. The unit has been exposed to rain.
  3. The unit exhibits a marked change in performance.
  4. The unit has been dropped, or its enclosure or chassis is damaged.

WARRANTY

OUR PRODUCT GUARANTEE

Every RAZR system is engineered and built by Fluence in Austin, TX using state-of-the-art robotics and hand craftsmanship. All RAZR systems are guaranteed against manufacturing defects for three years from date of purchase.

We stand behind our research, we stand behind our technology and we stand behind our clients.

www.fluence.science/warranty

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PRODUCT

SYSTEM HARDWARE + ACCESSORIES

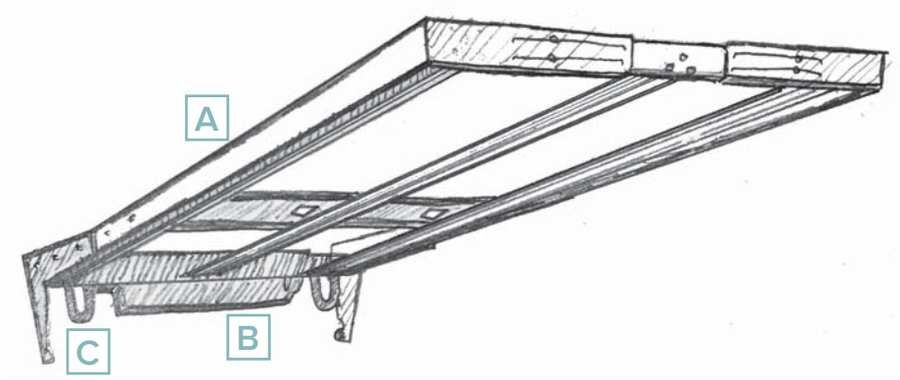
System Hardware

A ..... RAZR console pre-configured with:
- **B** .....Driver
- **C** .....0-10V dimming cables

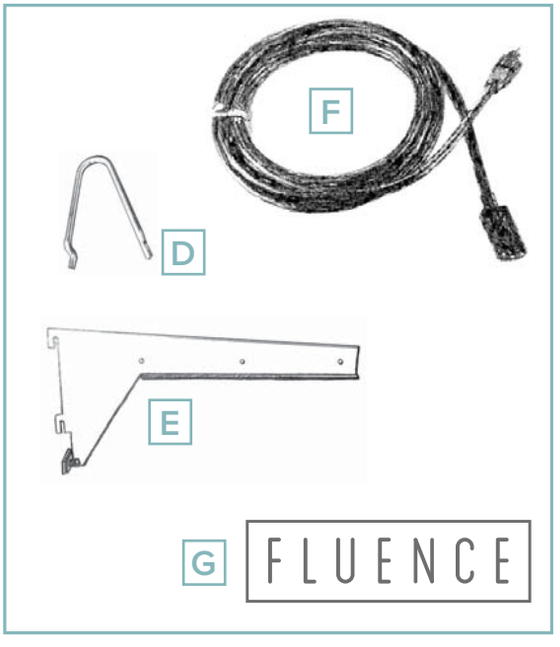
Accessories

D ..... (4) Mounting hooks
E ..... (2) Cantilever brackets *(option if upgraded at time of purchase)*
F ..... (1) 6' AC cable *(15' cable option if upgraded at time of purchase)*
G ..... Vinyl-cut Fluence sticker

PRODUCT LEGEND



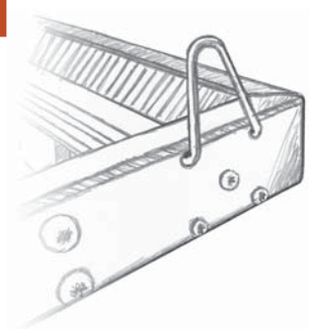
ACCESSORIES



ASSEMBLY & MOUNTING INSTRUCTIONS

1

2



3

Unbox hardware from packaging and place on flush, stable surface. Take extra caution with RAZR—ensuring the LED array does not come in contact with sharp objects or force that may damage the diodes.

1. To change fixture width, place RAZR on firm surface with LEDs facing down. Use the supplied #20 torque wrench to loosen 4 screws at the end of the fixture. Loosen 4 screws near the power supply, and the 4 screws on the backplate. With these screws loosened, you can now adjust the fixture's width from 15.75" up to 22.75". When fixture has been appropriately adjusted, re-tighten the 16 screws.
2. RAZR can be mounted using universal attachment brackets (tips facing up) in holes at either end of fixture.
3. Alternatively, cantilever brackets can be installed and used to mount RAZR to a standard slot rack. To install cantilever brackets, attach at back sides with #20 torque wrench and three screws per bracket. When mounting RAZR to a Danish trolley/slot rack, use fine-angle level adjustment device to adjust the angle of the fixture.
4. To dim RAZR, attach the appropriate dimming cables to a dimming system.

For detailed instructions for assembling and mounting RAZR, please see video turtorials at www.fluence.science/support/.

How to apply your vinyl-cut Fluence sticker:

1. Clean and dry the surface where the sticker will be applied. Air and surface temperature should be between 40° to 90° F.
2. Remove backing sheet to expose adhesive and apply sticker to desired surface.
3. Starting from the center and working outward, squeegee pre-masked surface with a credit card to remove air bubbles.
4. Allow adhesive to bond approximately 15 minutes.
5. Remove pre-mask from sticker at a 45° angle, keeping it as close to the sticker as possible. If lettering is coming up with pre-mask, re-squeegee before attempting to remove.

Last, and most important, please recycle all packaging material. Future generations will thank you.

BEST PRACTICES

Fluence encourages everyone to experiment and pursue their own techniques. Every crop is different and everyone has different goals. However, our internal research has given us insight into several strategies we would like to share.

- Regularly check your plants' growth and health. Fluence lighting systems deliver high levels of PAR, typically more than experienced in nature. Adjustments to H_2O, CO_2, RH, nutrients, and temperature are typically required.

- Mount the light bars 5" from the top of your canopy to ensure optimal uniformity and consistent PPFD. RAZR was designed for maximum precision and requires precise deployment. A 1" variation in either direction will have a significant change in uniformity and PPFD (which may or may not be desired).

- Many plants prefer higher temperatures when exposed to high PPFD. Experiment with higher temperatures to achieve higher yields. Canopy temperature and room ambient temperature often vary. For accurate results, test at the canopy level to gauge leaf surface temperature.

CARE & PRACTICES

GENERAL CARE

RAZR Series systems are passively cooled with zero moving components. They are designed for harsh environments and years of maintenance-free performance. Some basic care will keep your system operating at peak performance cycle after cycle.

- Natural convection removes heat away from the heatsink. In order for the system to properly cool itself, at least one inch of space is required between the console and the roof of your grow area. Failure to do so may shorten the fixture's lifespan.
- To achieve the optimal lifespan and performance of your fixtures, routinely check for and remove excess dust, debris, and mineral build up from heatsink and LED array.
- Cleaning should always be done with the fixture unplugged from its power source using low-pressure compressed air or water to rinse away dirt from light bars.
- Never use a cloth to clean the diode array. Doing so can scratch or compromise the integrity of the silicon seal, or dislodge diodes entirely.
- To limit degradation, avoid touching the diodes with your hands, even in a powered off state.

TECHNICAL SPECIFICATIONS

STOCK KEEPING UNIT (SKU) CONFIGURATOR AND OPTIONS

EXAMPLE SKU: RR-X-P-1-06-N5-H

Family	Model	Spectrum	Input Voltage	Cord Length	AC Plug Type	Mounting Hardware
RR RAZR	**X** X	**P** PhysioSpec	**1** 100V–277V	**06** 6.0'	**N5** NEMA 5–15P	**H** Hooks
				15 15.0'	**N6** NEMA 6–15P	**C** Cantilever
					L7 NEMA L7-15P	
					PT Pigtails	

Photosynthetic Photon Flux (PPF)[1]

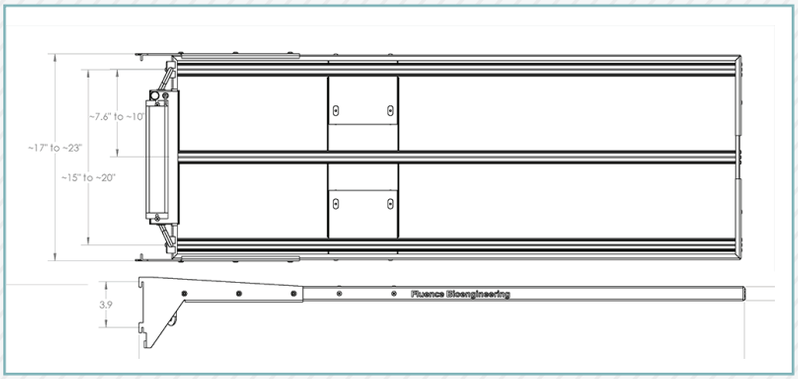
RAZRx 210 µmol/s

Energy Efficiency (PAR)/Watt)

RAZRx 2.3 µmol/J

Dimensions

RAZRx 14 lbs 0oz | 52.3″ x 17-23″ x 1.2″



Electrical

Product Model	Input Voltage	Input Power[2]	Amps @ 120V	Amps @ 208V	Amps @ 240V	Amps @ 277V	Frequency
RAZRx	100V - 277V	91W	.8A	.4A	.4A	.3A	50/60Hz

WARNING Risk of electrical shock. To reduce the possibility of serious injury, always take the proper precautions and unplug the fixture before moving or cleaning.

WARNING Light bars and power supply are splash-proof but not waterproof. In the event that the light bar becomes submersed, ***first disengage the circuit breaker***, then unplug the fixture before proceeding to remove from water.

CAUTION To prevent eye damage, avoid looking directly at the unshielded LEDs.

CAUTION LED and heat sink surfaces may be hot. Allow sufficient cooling time before handling.

CAUTION To reduce the risk of overheating or fire, never place operating fixtures face down on a flush surface. Always allow for adequate ventilation of fixtures and power supplies.

ETL Rating: Fluence Bioengineering fixtures are rated suitable for damp locations. A “damp location” is defined as exterior or interior location that is normally or periodically subject to condensation of moisture in, on, or adjacent to the electrical components of a lighting fixture or ceiling fan. RAZRx is certified to meet UL standards (ETL) from the Intertek safety consulting and certification company. Systems are cETL and DLC listed.

[1] PPF calculations compiled using integrating sphere measurements and typical spectroradiometric data for each LED to determine typical fixture performance. Actual photometric results may vary within the LED manufacturer's bin tolerance.

[2] Wattage values are typical expected values. Fluence maintains a tolerance of ±10% on flux and power specifications. Target light levels can vary from projected levels depending on ambient temperature, room reflection values and dirt accumulation.

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