

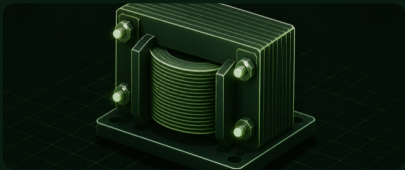
CONSTANT CURRENT REGULATORS (CCR)



A constant current regulator is not a single component but a power assembly built from distinct stages, each handling one part of turning incoming mains power into a stable series circuit current. The transformer, regulation, control, and protection stages work together inside one cabinet so a single unit can drive an entire runway or taxiway lighting circuit reliably.



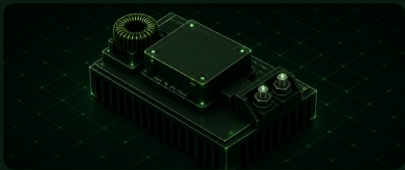
Body material	Steel cabinet with powder-coated corrosion-resistant finish
Enclosure and installation	Enclosure rated for equipment room, vault, or containerized outdoor shelter installation
Power options	Single or three-phase mains input, matched to circuit kVA rating
Control compatibility	Remote brightness step control and status reporting via ALCMS or site SCADA
Mounting	Floor-standing cabinet for equipment room, regulator vault, or shelter mounting
Operating environment	Continuous duty rated for high ambient temperature installations



01

POWER TRANSFORMER STAGE

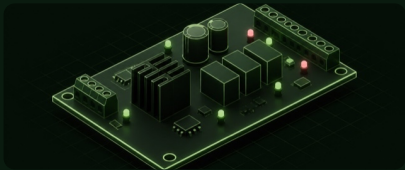
Receives the incoming mains supply and isolates and conditions it before the regulation stage draws on it. Correct transformer sizing here sets the ceiling on the regulator's total circuit capacity.



02

CURRENT REGULATION STAGE

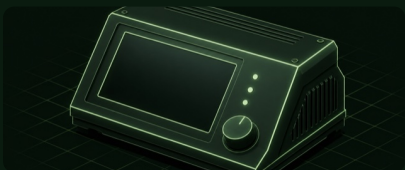
The core stage that holds output current constant across the range of brightness steps and as fixtures are added or removed from the circuit. Its accuracy determines how evenly every fixture on the loop burns.



03

CONTROL CARD

Governs brightness step selection and processes remote commands from an ALCMS or manual panel. It also carries the protection logic that responds to open or short circuit conditions.



04

MONITORING INTERFACE

Reports circuit current, output voltage, and fault status back to the ALCMS or a site SCADA system. This gives operations staff continuous visibility of circuit health without a manual check at the cabinet.



05

CABINET COOLING AND VENTILATION

Dissipates the heat the regulation stage generates during continuous duty, protecting internal components from thermal stress. Adequate cooling design is part of what allows the unit to run unattended for extended periods.



06

OUTPUT ISOLATION AND OPEN-CIRCUIT PROTECTION

The regulator's own output contactor and shutdown logic, which drops the circuit safely on an open-loop or fault condition and gives a clean isolation point for maintenance without opening the series loop itself.

- FAA AC 150/5345-10
- IEC 61822
- GACAR Part 139