

HVLED

Lighting the future



A complete portfolio of top-performance mains voltage LED drivers, providing high efficiency and reliability in a compact form factor

The design of new generation mid- and high-power LED lighting is a relentless struggle for energy efficiency, reliability and cost competitiveness with no compromise in light quality. The HVLED family embodies ST's expertise in power conversion and high-voltage silicon technologies, packing into a small form factor all the functions required for high-performance LED drivers. Meeting the most stringent regulations for power efficiency and quality, ST's HVLED ICs create an enhanced lighting experience.

KEY FEATURES & BENEFITS

- On-chip 800 V high-voltage start-up for fast LED turn-on time (less than 0.5 s)
- All constant-voltage / constant-current primary-side regulation topologies supported for maximum design flexibility
- Quasi-resonant topology with frequency fold-back for high efficiency with low loads (dimming) (HVLED001)
- Primary-side control loop does not require an opto-coupler; enables very small form factors and simplified designs
- Multiplier-based structure for excellent power factor (PF) and total harmonic distortion (THD) over wide variations in line voltage (HVLED001)
- High power factor (up to 0.9) over a wide input voltage range for maximum efficiency
- Full set of advanced protection features ensures the highest reliability

IDEAL FOR

LED applications up to 80 W in a single-stage configuration and 150 W in a two-stage configuration such as:

- Bulbs and spotlights for incandescent lamp replacement
- Professional lighting
- High-bay lighting fixtures
- Street-lighting solutions

A COMPLETE FAMILY THAT MEETS EVERY DESIGN REQUIREMENT

Product	Description
HVLED001A	Enhanced offline controller for LED lighting with constant-voltage primary-sensing and high power factor
HVLED001	Offline controller for LED lighting with constant-voltage primary-sensing and high power factor
HVLED002	High-performance current-mode LED controller ideal for secondary-side low-side buck topologies
HVLED807PF	Offline LED driver with primary-sensing and high power factor up to 7 W
HVLED815PF	Offline LED driver with primary-sensing and high power factor up to 15 W
HVLED805	Offline LED driver with primary-sensing up to 5 W

LED solution boards	Description
STEVAL-ILL069V2	35 W wide input range flyback converter using HVLED001/A quasi-resonant flyback controller
STEVAL-ILL074V2	60 W wide input range flyback converter using HVLED001A controller in FOT mode
STEVAL-ILL074V1	60 W wide input range flyback converter using HVLED001A quasi-resonant flyback controller
STEVAL-ILL070V3	35 W dimmable single string LED driver using HVLED001 in FOT mode
STEVAL-ILL070V2	35 W single string LED driver using HVLED001
STEVAL-ILL055V1	11 W fixed output and high PF high-efficiency isolated offline LED driver using HVLED815PF (for EU market)
STEVAL-ILL045V1	9 W, A19 format Triac dimmable, high power factor, non-isolated LED driver using HVLED815PF (for US market)
STEVAL-ILL044V1	9 W Triac dimmable, high power factor, isolated LED driver using HVLED815PF (for US market)
EVLHVLED815W8CV	8 W European range high power factor LED driver with primary constant voltage regulation using HVLED815PF
EVLHVLED815W15	15 W European range high power factor LED driver with primary-side current regulation using HVLED815PF
EVLHVLED815W10F	10 W wide range high power factor isolated LED driver with primary-side current regulation using HVLED815PF
EVLHVLED815W10A	10 W wide range non-isolated high power factor LED driver with primary-side current regulation using HVLED815PF
EVALHVLED805	4.2 W isolated LED driver with primary side current regulation using HVLED805
STEVAL-ILL037V1	3.2 W LED power supply using HVLED805

