

Performance pulsed current source for rackmount or benchtop.

- **Reliable, Accurate Current**
- **Low uncertainty digital trigger enables repeatable measurements**
- **Fast rise time, a few microseconds, meeting new light measurement standards**
- **Load tuning ensures square pulses**
- **One Module; appropriate for low, mid and high power devices**

OVERVIEW

The SpikeSafe 400 performance precision pulsed current source is a high quality instrument developed and optimized for LED characterization, production, and other high performance non-inductive applications. The SS400 Performance (SS400 PRF) differs from competitor sources by providing sustained power to 4kW with no duty cycle limitations, voltages to 400V and current from 0mA to 2A. An easy to use software development tool simplifies SS400 integration by allowing your developer to easily build command sequences that can be copied into your custom software application.

ACCURATE AND REPEATABLE PULSING - Microsecond Rise Time

For measurement accuracy, precision pulsing and triggering are foundation requirements that the SS400 PRF provides. Digital power enables the SS400 PRF to provide sustained, highly accurate, repeatable pulses with microsecond rise times. Precise digital triggering dramatically reduces measurement variations due to triggering uncertainty. Pulse widths at full power from 10us to 10s offer unparalleled flexibility. With the SS400 PRF, light measurement and other photometric measurement accuracy may be greatly improved speeding time to market for your products.

HIGH POWER DENSITY

Offering the highest power density available in the industry, each SS400 PRF source channel supplies up to 800W sustained power with no duty cycle limitations. With 400V compliance, the SS400 is ideal for use with high voltage LED devices, arrays, COB, and next generation super high brightness LEDs. High power density means that one instrument can fulfill requirements that previously required two or more instruments.

400V, 4A PERFORMANCE PRECISION PULSED CURRENT SOURCE

CONFIGURATION

1 SOURCE CHANNEL

DRIVE CAPABILITY

DC, SINGLE PULSE, and CONTINUOUS PULSE, DYNAMIC MODES

50V, 100V, 200V, 300V, 400V
To 4A



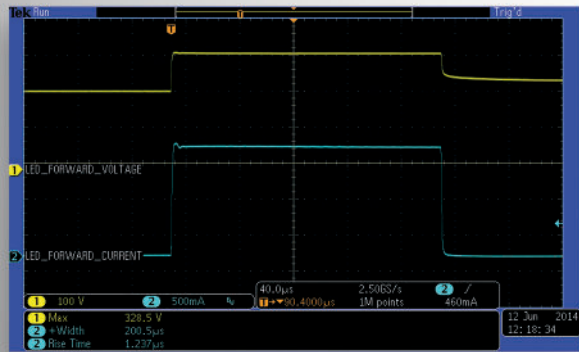
LOAD TUNING ENSURES SQUARE PULSES

With load tuning, one module provides perfect pulses for low, mid, and high power devices with different cables and impedance. Load tuning ensures repeatable measurements for all devices with no or minimized ripple and no undershoot even to the ends of long cables.

APPLICATIONS

- DC and Pulsed Light Measurement
- LED characterization
- Production and binning applications
- LM-80, LM-85, LM-79, CIE127
- Quantum efficiency measurement
- Thermal resistance and Junction temperature measurements
- Other non-inductive test applications

400V, 4A PERFORMANCE PRECISION PULSED



200µS pulse, 1.5A 328V LED Load, 1.2µS Rise Time; Single pulse of continuous pulse train shown.

Performance Pulsing Ensures Repeatable Measurements

The SpikeSafe 400 uses a 90 MHz timing system to provide precise pulses from 10µs to 10s. Dynamic pulse control allows the controlling application to change pulse width, duty cycle and amplitude while the output is running –essential for rapid characterization tests or sweeps. Rise times in the 1-5µs range reduce LED heating prior to measurements. Programmable load tuning adjusts internal drive circuitry to maintain pulse fidelity and fast transition times to accommodate a variety of load conditions. Unlike other fixed impedance sources, the SS400 can drive clean pulses over simple twisted pair cables as long as 10 meters.

SPIKESAFE 400 PERFORMANCE MODEL NUMBERS

MODELS	4A
400V	SS400-PRF-400-4-2U1
300V	SS400-PRF-300-4-2U1
200V	SS400-PRF-200-4-2U1
100V	SS400-PRF-100-4-2U1
50V	SS400-PRF-50-4-2U1

REMOTE CONTROL

Physical	Ethernet; TCP/IP protocol
Command Set	SCPI

TRIGGER OUTPUT

Trigger Output	TTL signal aligned with output pulse. Selectable polarity.
Current Delay After Trigger	2-10µs
Trigger Polarity	Selectable
Trigger Jitter	<10ns typical

CURRENT SOURCE PERFORMANCE

Mode	DC, DC Dynamic, Continuous Pulse, Continuous Dynamic, Single Pulse, and Multiple Pulse
Output Current	0mA – 4A
Maximum Compliance Voltage	Models to: 50V, 100V, 200V, 300V and 400V
Output Power	1000W with external bulk power supply
Setpoint Resolution	50µA
Output Current Accuracy	0mA to 200mA: 0.04% + 175µA; 201mA - 4A: 0.08% + 0.5mA
Calibration Interval	1 year after being put into service
Output Current Ripple	0.5%, 200kHz at 1A
Device Protection	2nd generation SpikeSafe protection including high speed over current shut down, slow start up, leakage detection and other protection algorithms

PULSE PERFORMANCE

Time Base Accuracy	+/- 50 ppm
Pulse Width Range	10µs to 10s
Pulse Width Resolution	1µs
Pulse Width Accuracy	2µs typical
Pulse Period Range	20µs to 20s
Duty Cycle Range	0 to 100%
Pulse Width Jitter	<30ns typical
Rise/Fall Time	1 to 5µs typical

OUTPUT CONFIGURATION

Type	Differential drive (anode and cathode driven)
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PHYSICAL AND ENVIRONMENTAL

Available Packages	2U Chassis for Benchtop or rackmount. Eurocard compatible with Vektrex systems.
Operating Conditions	10 to 35C, 70%R.H., Air cooled
Input Power	Selectable; single and three phase available; 50-60HZ
Particulate Level	Clean lab conditions

