

High-performance LED test solutions.



VEKTREX

# LM-80 SYSTEMS

Complete solutions for measuring luminous flux and color maintenance of LED packages, arrays and modules



# COMPLETE LM-80 LED TEST SOLUTIONS

High-capacity Vektrex LM-80 systems combine spike-protected, constant or pulsed current LED drive electronics with fully integrated thermal control systems and automated light measurement.

Vektrex LM-80 Systems are optimized for LM-80-08 and LM-80-15 compliance testing for low, mid and high power LEDs, modules, COBs and arrays operating in infrared, visible, or UV.

## VEKTREX LM-80 SYSTEM COMPONENTS INCLUDE:



Test Software



Reliability Drive  
Electronics



Integrated Thermal  
Control System



Automated Light  
Measurement System



Load Boards  
and Fixturing



Training & Consulting

## Industry-leading drive electronics.

Energy-efficient Vektrex SpikeSafe™ Series current sources supply DC and precision-pulsed drive current up to 60 amps at voltages up to 400V for LM-80 testing and high-power LED reliability stress applications.

Multiple-source channel modules deliver high capacity and high power density with the testing flexibility of independent channel control.

SpikeSafe™ load protection continuously monitors voltage and current on all source channels and instantly shuts down when device anomalies are detected. Rapid shutdown preserves the failure device for analysis, protects other devices, reduces failure counts, and improves reliability results.

## High-capacity thermal control.

Temperature uniformity is essential to successful LM-80 testing. Vektrex Integrated Thermal Control Systems (ITCS) use plant chill water and a closed loop system for uniform thermal control in a compact, energy-efficient footprint. With up to 10kW of power handling capability – at operating temperatures up to 150C – the Vektrex ITCS provides the capacity to test numerous high power devices in a single chamber.

Integrated fixturing with convenient slide-out drawers simplify loading and unloading. Available individual drawer temperature controls allow side-by-side testing of multiple device types with different thermal characteristics.

## Repeatable light measurement.

The Vektrex Automated Light Measurement System integrates thermal control and precise electrical and optical instrumentation with easy-to-use software tools for measuring and recording LM-80 photometric and electrical test results.

Single pulse, DC and continuous pulse modes are compliant with LM-85 requirements for repeatable high power LED light measurement. With 0.05% flux repeatability, the Vektrex Automated Light Measurement System can detect LED test trends within hours.

## Comprehensive test software.

Vektrex software applications are designed to address and support a wide range of testing needs. The LM-80 software suite includes STARS testing and monitoring software that controls and monitor source channels, loads, and thermal control devices during testing. From plotting data and identifying trends to failsafe protection and remote thermal control, Vektrex software simplifies test control and accurate data collection.

## Confidence.

Whether you're expanding existing test capacity, or stepping up to higher-power LM-80 LED testing systems, Vektrex systems and components give you the flexibility to scale a wide range of LED testing configurations. Leading manufacturers and LM-80 labs worldwide rely on Vektrex systems and components for unmatched power, capacity and reliable performance.

**Learn more about Vektrex LM-80  
Systems at [vektrex.com](http://vektrex.com).**

# THE LM-80 SYSTEM OF CHOICE FOR PRECISE, HIGH-POWER LED TESTING.

LED manufacturers use LM-80 testing in conjunction with TM-21 to predict an LED's light output over time. These predictions are used by the manufacturer to improve their processes, and to compare their devices with other competitor devices. Lighting Designers use this standardized data to select the appropriate LEDs for their application. In the USA, LM-80 testing is required for Energy Star Certification.

## Start with the best current source.

✓ Key LM-80 Requirements	+ Vektrex Exceeds the Requirements
Constant Current Drive (DC Mode) PWM Drive / Pulsed Current Accuracy < 3%	SpikeSafe™ Protected Modular Current Sources, available to 400V, 50A DC and Precision Pulsing Individual Source Channel Control Typical Current Accuracy 0.1% MTBF 175,000 Hours
Accurate Time Keeping Typically 6,000 – 10,000 Hours Duration DUT Failure Recording	Logs Data, Monitors Errors & Faults, Duration Timers, Data Visualization
Two or More Test Temperatures -2 to ∞ Case Temperature Control -5 to ∞ Air Temperature Control	to 150C Operation, 0.2C Stability, up to 10kW / Chamber Load UV, IR, VIS, & Array Device Support
Spectrometer-based Measurements Selectable Measurement Temperature	Automatically Tests up to 80 DUTs Repeatable to 0.05% Flux Measurement LM-85 Capable
Test Timing Uncertainty Analysis	Numerous NVLAP Certified Installations LM-80 Training





## VEKTRIX LM-80 SYSTEM COMPONENTS

### LM-80 Software Suite

- Individual source channel control
- Failsafe temperature shutdown configuration and control
- Current, voltage and temperature data logging
- Data visualization
- Test management reports
- Duration timers and power cycling
- Integrated safety controls

### LM-80 Drive

- High-capacity SpikeSafe™ drive electronics
- DC and Pulse-Width Modulation capability
- Individual source channel control
- 24/7 drive current accuracy and reliability
- Failsafe temperature shutdown
- Modular and scalable architecture
- Energy-efficient, compact footprint

### Integrated Thermal Control System

- High-capacity integrated chamber
- Active liquid cooling using plant water
- 10kW load capacity, temperatures to 150C
- Alternative temperature sensors
- Uniform air temperature control
- Compact vertical footprint

### ITCS Fixturing

- Energy-efficient design
- High capacity > 1,600 devices
- 40 load board positions
- Individual drawer temperature control
- Easy-loading slide-out drawers
- Radiant power capture

### Automated Light Measurement System

- Luminous flux repeatability 0.05%
- High current and high voltage capability
- Supports DC and pulsed mode light measurements
- Automatically tests up to 80 devices
- Thermal resistance test capability
- 100w temperature control platform

# INDUSTRY-LEADING EXPERTISE AND GLOBAL SUPPORT.

Our global representatives and support centers are ready to provide industry-leading expertise and local service.



Vektrex designs and manufactures high-performance LED test solutions for leading manufacturers and LM-80 labs worldwide. Industry-leading SpikeSafe™ current sources provide high-power DC and performance-pulsed

capability optimized for next-generation LED and SSL products. Solutions include reliability, LM-80 and LM-85 systems, light measurement systems, thermal control chambers, software and components.

**For additional LM-80 System information visit [vektrex.com](http://vektrex.com)**

High-performance LED test solutions.



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