Lightricity enables automated, calibrated and highly accurate measurements for indoor IoT system and photovoltaic (PV) cell by meeting most relevant standards requirements with Lightricity indoor light simulators. The Lightricity **Universal Multiplexer** further accelerates photovoltaic testing and characterisation by driving most common source meters to rapidly switch between and measure up to 8 devices.

Features

- 8 channels in 2-wire mode, or
- 4 channels in 4-wire mode
- Very low leakage current: 10pA (typ.)
- Low on-state resistance: 2W (typ.)
- Wide voltage range: -5V to 5V
- High current capability: 150mA (max)
- 4mm banana jacks for test instrument connection
- 2mm banana jacks for devices under test connection
- Simple USB interface for control and power
- Desktop application (Python library available upon request)
- Optimised for indoor and outdoor photovoltaic technologies
- Warranty of 1-year (extension available upon request)
- Designed and manufactured in the United Kingdom

Product Description

The Universal Multiplexer enables the measurement of up to 8 photovoltaic devices by electronically switching a 2/4-wire connection between device under tests (DUTs). The very low leakage current makes this device suitable for use with ultra-low power systems, while the small on-state resistance ensures a minimal voltage drop when measuring large currents.

The Universal Multiplexer is highly configurable, providing four 4-wire channels that can be changed to eight 2-wire channels via software, without altering hardware. In 2-wire mode, either the force or sense channel can be used to connect to the source meter/other test instrument. The Universal Multiplexer is controlled by a host computer via USB.

Technical Specifications

	Min	Typ	Max	Unit
Dimensions		112 x 62 x 35		mm
On-state resistance		2	4	Ω
Leakage current	-100	±10	100	pA
Voltage rating	-5		5	V
Current rating	-150		150	mA

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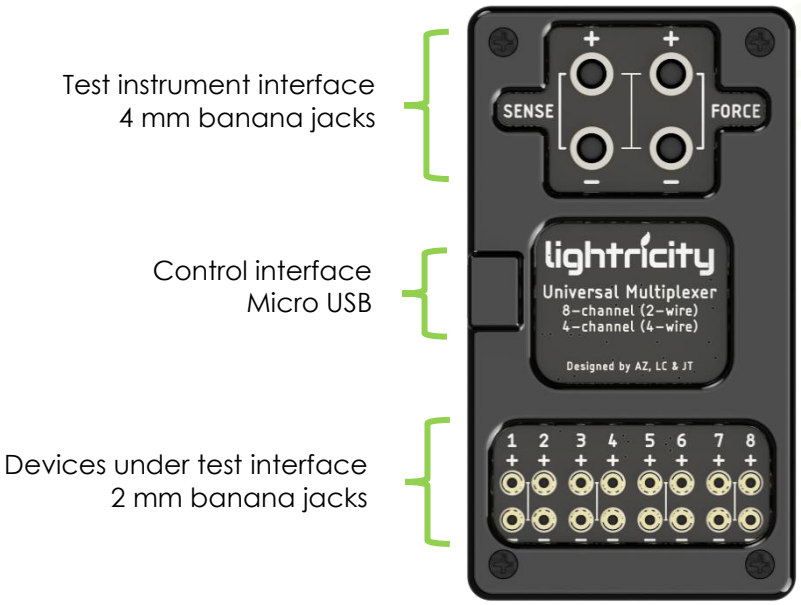
Configuration

The universal multiplexer uses 4 mm banana leads to connect to a test instrument. In 4-wire mode, the force and sense channels on the Universal Multiplexer should be connected to their respective channels on the test instrument. In 2-wire mode, the user should connect their test instrument to either the force or sense channel.
In 2-wire mode, up to eight DUTs can be connected to the Universal Multiplexer. In 4-wire mode, four DUTs can be connected, with each occupying a pair of channels.



Software

A Universal Multiplexer software (Windows 10/11, perpetual license) is included for users to operate the multiplexer. It facilitates selecting channels and switching between 2-wire and 4-wire mode.

A Python shared library (.pyd file) is also available upon request. The Python shared library allows the user to call high-level functions to control the Universal Multiplexer via their own code.

Lightricity LightBox Compatibility

The Universal Multiplexer is compatible with "customised" and "MUX" Lightricity Lightbox XLs. Existing Lightbox XLs can be upgraded to "MUX" Lightbox XL by simply exchanging the modular bottom part with the "customised" or the "MUX" version.

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