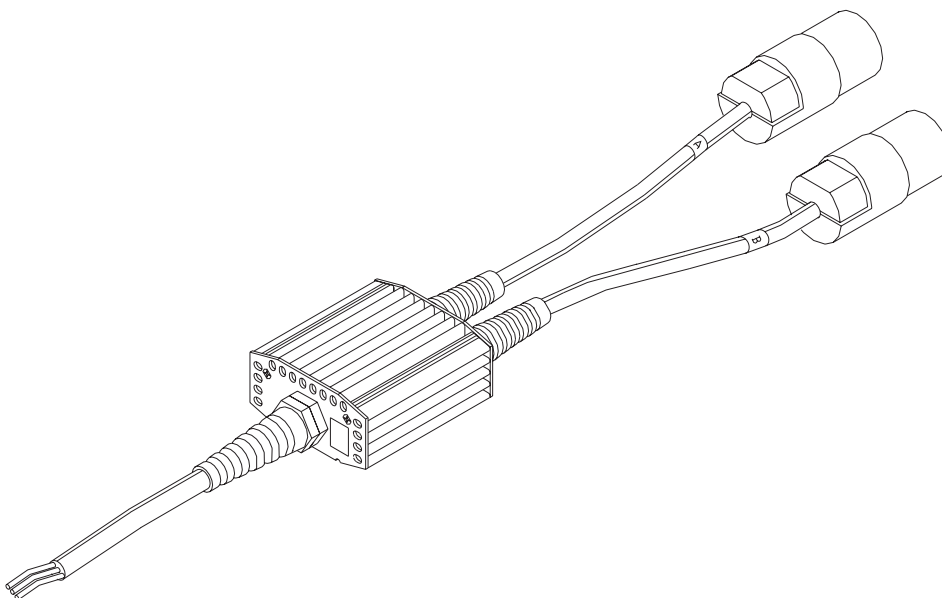




120V



GENERAL INFORMATION

ETC's Dimmer Doubling gives you two independently controlled lighting circuits for every dimmer you install. It's simple. Run one pair of wires from any ETC Sensor or Unison dimmer to a conventional outlet. Connect an ETC Dimmer Doubler, and plug in two ETC Source Four fixtures with 550W 77V HPL lamps. That's it!

The two lighting circuits function independently, as if they were connected to separate dimmers.

Dimmer Doubling saves you money by dramatically reducing the number of dimmers you need for your venue. Typically, you could require 25-50% fewer dimmers, potentially saving thousands of dollars in equipment costs. And fewer dimmers means less wiring, lower installation costs - and more savings.

APPLICATIONS

- Easily increase dimmer circuit counts for renovations without additional construction
- Adding dimmer circuits to existing installations for specials or more complex lighting plots
- Doubles dimmer circuit counts for touring shows

FEATURES

- Fewer dimmers
- Less wiring
- Lower installation costs
- No loss of dimmer-per-circuit control

ORDERING INFORMATION

Dimmer Doubler

PART#	DESCRIPTION
7060A1011	Dimmer Doubler unit (no input connector) (shown)
7060A1011-B	Dimmer Doubler with Stage Pin input connector
7060A1011-C	Dimmer Doubler with TwistLock input connector

All Dimmer Doublers have L5-15 output connectors.

Compatible Source Four Fixtures

MODEL#	DESCRIPTION
S4	Source Four or Source Four Zoom ellipsoidals
S4 jr	Source Four junior or junior zoom ellipsoidals
S4 PAR	Source Four PAR EA or MCM
S4 PARNel	Source Four PARNel

Replacement Lamps

MODEL#	DESCRIPTION
HPL 550/77	Standard Lamp
HPL 550/77X	Long Life 2000 hrs Lamp

High performance 77V HPL lamps are available through normal distribution channels.



SPECIFICATIONS

GENERAL

- UL and cUL LISTED for use throughout North America
- Splits the output of a single Sensor dimmer into two separate signals
- Both outputs are transmitted along the same set of wires from the dimmer modules to the Dimmer Doubler to provide individual levels for Source Four fixtures

PHYSICAL

- Rectangular aluminum heat sink with a black, steel cover
- Two recessed LEDs monitor output voltage
- Three 3-wire power leads (one input and two outputs) with rugged strain reliefs
- Fiberglass tubing protects power leads
- 12" Input lead
 - Stage Pin input connectors
 - TwistLock™ (L5-20) input connectors
- 24" Output leads provided with TwistLock (L5-15) fixture connectors for output

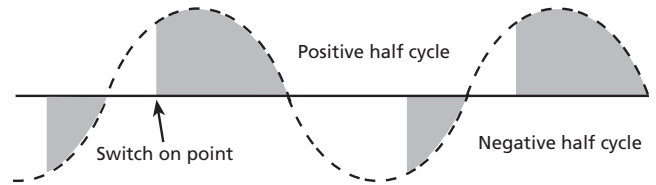
ELECTRICAL

- 120V, 60Hz operation only (input)
- Utilizes SCR technology for maximum reliability
- Output half-wave regulated AC
- Does not produce any DC output
- May be mixed with conventional dimmers and line voltage spotlights with standard electrical wiring for a flexible system

REQUIREMENTS

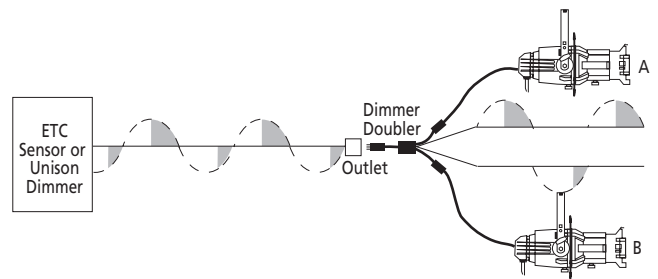
- Uses Source Four® fixtures with 77V lamps, Sensor dimmers (including Unison) and ETC control consoles
- NOT compatible with ETC's GFCI dimmer modules
- See "Dimmer Doubler User Manual" for applications and power transformer loading recommendations
- Source Four fixtures must have Twistlock (L5-15) connectors and 550W 77V HPL bulbs
- ETC control consoles (or any other type of console equipped with an electronic patch and DMX protocol) enable each Dimmer Doubled output of a dimmer to be patched to an individual control channel, increasing the number of available dimming circuits

ADDITIONAL INFORMATION

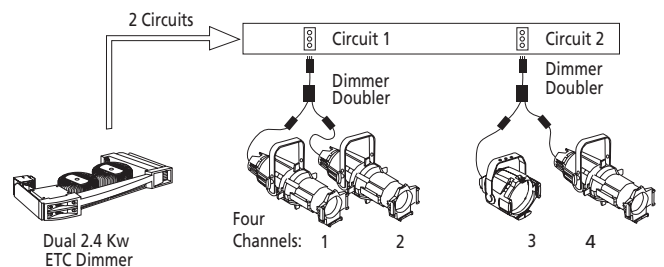


ETC's Dimmer Doubling software, available in 120V, 60Hz Sensor and Unison systems, allows you to fire the positive and negative half cycles independently, giving you two completely separate control inputs from your lighting console with DMX512 control patch.

Note: Doubler output is regulated half-wave AC. Doublers do not have any DC output.



An ETC Dimmer Doubler, containing a pair of back-to-back diodes, connects one load to the positive half of the AC cycle, and the other to the negative half.



In Dimmer Doubled mode, a single dimmer can control two separate load levels. An ETC dual dimmer module can control four separate load levels. You can place a total of two 550W, 77VAC lamps on a dimmer doubler, one on each side.

FREQUENTLY ASKED QUESTIONS

WILL DIMMER DOUBLING WORK WITH ALL LIGHTING FIXTURES?

No. Dimmer Doubling is designed specifically for ETC's Source Four fixture products using 77V HPL lamps and controlled by a Sensor or Unison dimming system. It does not support any other devices, including 120V fixtures and inductive loads. 77V HPL lamps have an additional pin that prevents you from installing them into a non-Doubled fixture.

HOW MANY 77V LAMPS CAN I USE WITH A DIMMER DOUBLER?

You can place a total of two 550W, 77V lamps on a Dimmer Doubler, one on each side.

WHAT IS THE VOLTAGE AT THE FIXTURE?

Even though the half-wave RMS voltage is 84V, the Dimmer Doubler uses 77V HPL lamps. The Sensor or Unison dimming system regulates the voltage down to 77V, allowing it to compensate easily for power fluctuations and circuit resistance without the output voltage varying.

CAN I ACCIDENTALLY PLUG A 120V FIXTURE INTO A DIMMER DOUBLER?

To protect you from connecting unsupported fixtures to a Dimmer Doubler, the Dimmer Doubler connects to the Source Four fixture with a 15 amp NEMA L5-15R Twist-lock connector. These connectors are not compatible with the 20 amp connectors typically supplied for theatrical lighting fixtures and dimmed outlets.

DOES DIMMER DOUBLING PRODUCE DC?

No, Dimmer Doubling produces half-wave AC. The positive half of the AC cycle controls one circuit, and the negative half cycle controls the other. This means you don't need to worry about the risk of arcing associated with DC circuits.

WHEN I USE ONE 77V LAMP, MY DIMMER CURRENT IS 7.1 AMPS. WHY CAN'T I USE FOUR BULBS?

The combined voltages of multiple lamps on a Dimmer Doubler are calculated using non-linear RMS values, giving you a maximum current of 20.2 amps. This is greater than the 20 amp rating of the circuit breaker in a dimmer module.

HOW MANY LIGHTS CAN I USE IN A DIMMER DOUBLED SYSTEM WITHOUT OVERLOADING THE MAINS TRANSFORMER?

The number of lights depends on the rating of the transformer. You can calculate this by dividing the transformer's KVA rating by 10.3. Round the result down to get the maximum number of 77V HPL lamps you can use on either the A or B side of a Dimmer Doubler, per phase. Multiply this by six to determine how many 77V HPL lamps you can use if you evenly load the A and B channels across all three phases.

$$\left(\frac{\text{KVA}}{10.3}\right) \times 6 = \text{Lamps}$$

Coming at it from the opposite direction, if you know how many Dimmer Doubled lamps you want to use, multiply that number by 1.717 to determine the minimum KVA rating your transformer should have.

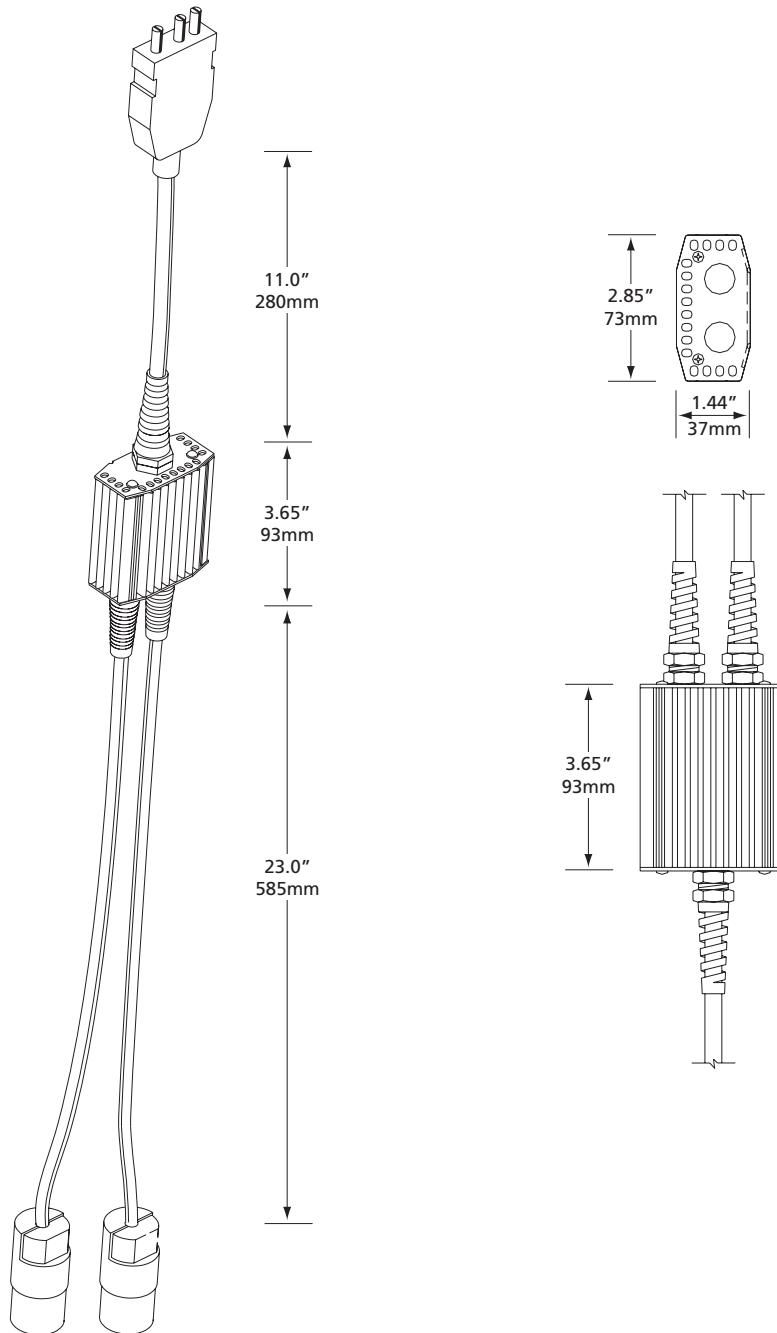
$$\text{Lamps} \times 1.717 = \text{KVA}$$

As long as you follow these rules, you protect your transformer from overload or saturation.

IS IT TRUE THAT DIMMER DOUBLING GENERATES MORE HARMONICS THAN A STANDARD DIMMING SYSTEM?

Actually, a Dimmer Doubler with both channels on generates the same amount of harmonics as a standard dimming system. If the Dimmer Doubler has only one channel on, it generates a different type of harmonics, but only half as much. As long as your transformer is properly rated (see above) neither type of harmonics will cause problems in your system.

PHYSICAL



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 Dimmer Doubler products are protected by the following U.S. Patent Number 5,323,088.