CANON
REALiS WUX450ST REVIEW

RON JONES, MAY 16, 2016

I consider the Canon REALiS WUX450ST to be a rather specialized installation class projector suitable for certain business and education applications. It uses LCoS imaging technology and a conventional lamp-based light engine. This model is smaller and lighter than the "heavy metal" class of installation projectors and this model does not support interchangeable lenses, as found on many of the higher-end installation projectors, including several models from Canon. Although some of the Canon product literature says this model has a 1.35:1 zoom lens, actually it has a 8.8mm fixed focal length lens providing a throw ratio of 0.56:1.

> Canon Describes this Projector as Follows:

"Ideal for a variety of markets and applications including higher education, business, training, digital signage and museums, the Canon REALiS WUX450ST Pro AV LCoS Projector displays large, high-impact images even in challenging installation environments. It can fit comfortably behind a presenter to eliminate long cable runs. The impressive combination of high brightness, short-throw ratio with significant lens shift, all in a compact form factor, allow this projector to stand apart from other short-throw projectors on the market today."

> Overview

Canon also offers a REALiS WUX450ST D that is otherwise the same projector, but with the addition of support for DICOM Simulation picture mode, as used for medical education/training purposes.

The WUX450ST received our special interest award as being a great choice for those potential buyers looking for a business/education/commercial installation-class projector, as long as they can accommodate the fixed 0.56:1 throw ratio this model requires.

The Canon REALiS WUX450ST is a high performance short throw projector with a native resolution of WUXGA (1920×1200). This is a different class of projector than the typical business or education model. However, the WUX450ST could prove to be one of the better solutions for the technical education market (e.g.,

educational facilities that teach using high resolution software programs like Autodesk and other 3D modeling, or scientific tools). For the business markets this is not the type of projector you would find in a typical conference room. Rather, it would be appropriate for advanced business/commercial applications including large, high-impact displays, including those using multiple projectors, for digital signage applications, or for other uses requiring a flexible mounting orientation. I'm sure there are also other business/commercial applications that could benefit from the combination of short throw distance, high resolution and fairly high brightness this projector has to offer.

The WUX450ST is bright, at a manufacturer rated 4500 lumens. One other thing to mention is that the projector uses LCoS

technology, not your typical LCD or DLP image technology.

Wired networking (i.e., Ethernet) support is built-in while wireless (Wi-Fi) requires use of an optional adapter. This model also supports HDBaseT for network/video/audio connectivity over a single cable. Being networkable, you will be able to monitor the projector's status and control the projector's essential functions right from a computer connected to the same network.

> Special Features

Short Throw:

The WUX450ST has a fixed focal length short throw lens that provides a throw ratio of 0.56:1. This means the throw distance, from the projector's lens to the screen, is fixed at 0.56 times the screen width. Thus, for a 100 inch wide screen the throw distance would be 56 inches. This is perhaps 1/3 the throw distance for a typical business or education class projector and perhaps 2 to 3 times the throw of a ultra short throw projector.

Mounting Flexibility:

Of course the WUX450ST can be table mounted or ceiling mounted (shown below with the optional ceiling mount), but it can also be mounted on it side or at virtually any angle. It offers a wide range 0 to 75% vertical (percent of image height) optical lens shift adjustment along with a more modest +/- 10% horizontal lens shift range.

This is a recently released model (March 2016) and it appears that some of the Canon product literature available at the time of this review (May 2016) incorrectly lists the lens as having a 1.35:1 zoom ratio while this model actually has a fixed focal length lens rather than a zoom. Although the lack of a zoom lens, or interchangeable lenses, does limit mounting location flexibility, this should not prevent most users from finding a suitable mounting location as long they do careful planning before purchasing the projector. Canon does offer a number of other installation class projectors that may better suit a individual user's installation needs, including models with zoom lenses and also higher-end models with interchangeable lenses. These includes the model WUX500 (with a standard throw 1.8:1 zoom lens) and the WUX6000 (that accepts interchangeable lenses).

Support for Multi-Projector Installations:

Large displays using multiple projectors have become more commonplace for large commercial advertising and promotional displays. Also museums frequently have applications for displays using multiple projectors. The WUX450ST comes with the tools to create such high impact displays using multiple projectors with full support for edge bending and geometry adjustments, along with color and brightness matching of adjacent images that are being projected by additional Canon projectors. These features can be used to create a seamless, large, very high resolution displays.

System Integration:

- Built-in RJ45 port for connection with wired networks
- HDBaseT support for single wire solution for Video, Audio and Networking
- Network management including AMX device discovery and Crestron connectivity
- Network based monitoring and control of multi-projector installations from a central computer with PJ Link software
- Split screen projection mode for displaying information from two sources
- Optional support for wireless networking

REALiS
WUX450ST

Brightness:

Image Mode	Lumens*	Color Temp.
Standard	3034	8057
Presentation	3653	7620
Photo/sRGB	2668	7172
Dynamic	3621	8149
Video	2239	9134

* These lumens values would apply to either "White Brightness" or "Color Brightness." Since this projector has a fixed focal length lens the lumens output does not vary with the setting of a zoom lens. The maximum lumens that were measured fell short of the manufactured claimed value of 4500 lumens for this model.

The manufacturer specified the brightness uniformity at 80% and this agrees with my measurement that the dimmest corner was 20% less bright than the center of the image, which represents good performance.

Color uniformity appeared very good when projecting a full white test image.

Operating the projector in its Eco, low powered, lamp mode reduced the image brightness by approx. 30%.

The manufacturer specifics the on/off contrast ratio at 2000:1 and I measured a contrast ratio of 2142:1 when operating in "Standard" image mode. While well short of the contrast performance of a mid-level home theater projector, this is better real world performance than is possible with most business and education class projectors, including those that are spec'ed to offer much higher values.

> Special Features

Noise:

The Canon WUX450ST is specified to produce a noise level of 37 dB in normal lamp mode and 30 dB in Eco mode. These values are similar, or only slighter higher, than many business/education class 3000 to 3500 lumen projectors. Other projectors with 4000 to 4500 lumens frequently have a noise level similar, or 1 or 2 dB higher than this model. While the noise level, especially with the projector operating in normal (high power) mode, is certainly very audible, but should not be so loud as to prove distracting when this projector is being used in the intended business or installation environment. Changing to the "Eco" mode resulted in a noticeable decrease in noise level and to a level only a little louder than a typical home theater projector, when such a projector is operating high lamp mode.

Warranty:

The WUX450ST comes with a 3 year parts and labor warranty on the projector itself and 120 days on the lamp. According to Canon product literature for this projector, the warranty includes Canon's Advanced Warranty Service Exchange Program and Service Loaner Program.

> *"...this is better real world performance than is possible with most business and education class projectors."*

> The Bottom Line

The Canon REALiS WUX450ST is a very good performer that produces a very sharp, bright image with good out-of-the-box color fidelity in the Photo/sRGB image mode. Further improvements should be possible to any of the factory image modes using the projector's comprehensive grey scale and color management adjustments. I found skin tones to be very natural with the out-of-the-box settings for Photo/sRGB image mode and for business presentations the WUX450ST projects a very sharp image with excellent text readability when displaying our standard text test image.

This a short throw projector with a fixed focal length lens. As a result, the projector will need to be placed 0.56 times the screen width back from the screen. However, the WUX450ST does have optical lens shift which helps with integrating the projector into the installation. The Photo/sRGB image mode is well suited to presentations/displays that require accurate colors for displaying photos or videos. Brighter, but less accurate, picture modes are available that are suitable for typical business presentations or specialized commercial applications, such as for digital signage. As for black levels and contrast, while not in the same league as a good home theater projector, they are very good for a bright business/installation class projector.

The WUX450ST has built-in support for both wired networks (Ethernet) and also HDBaseT (for networking/audio/video over a single cable). While there is no wireless network capability built-in, that capability can be added via an optional Wi-Fi adapter. Management and control of the projector are supported over the network from a computer running PJLink software. The projector also supports connections to AMX and Crestron control devices.

Multi-projector setups are supported with built-in support for edge blending and geometric corrections to seamlessly join together the images being projected by two or more compatible Canon projectors. This can be useful for extra large, high resolution displays for commercial promotions (e.g., at trade shows) or digital signage and also perhaps for museums needing a high-impact display in conjunction with an exhibit.

While this a short throw projector with a throw ratio of 0.56:1, Canon offers otherwise similar projectors with the same 1920 x 1200 resolution, such as the WUX500 that comes with 1.8x zoom lens that covers throw ratios from 1.39 to 2.51:1. If that's not adequate there are other installation projector models from Canon, such as the previously reviewed WUX6000, with optional interchangeable lens available that cover a very wide spectrum of installation needs, ranging from short throw up to long throw.

> ## The Bottom Line

Pros:

- Short throw lens works well for certain specialized applications
- Fairly high brightness
- Very sharp image with good upscaling performance
- Good out-of-the-box colors in Photo/sRGB image mode
- Vertical and horizontal optical lens shift helps provide for mounting flexibility
- Can be positioned at any angle
- Supports multi-projector installations with edge blending, geometric adjustment and color matching for adjoining images
- Support split-screen mode for projecting images from two sources
- Good support for network-based management and control of the projector
- Support for AMX and Crestron control devices
- HDBaseT support for a single wire solution for carrying network/audio/video signals

Cons:

- Fixed focal length short throw lens means that for any given screen size there is only one specific projector-to-screen throw distance supported
- Remote control has no back-light making it difficult to see and operate in a dark room
- Only one pre-set image mode available with good out-of-the-box color accuracy

REALIS WUX450ST

CANON WUX450ST SPECS

TECHNOLOGY	LCoS
NATIVE RESOLUTION	1920x1200
BRIGHTNESS (Manufacturer Claim)	4500
CONTRAST	2000:1
ZOOM LENS RATIO	N.A.
LENS SHIFT	Yes
LAMP LIFE	3,000 hours
WEIGHT	13.9
WARRANTY	3 years on projector and 120 days on lamp

To read the full review please visit: www.projectorreviews.com

HIGHLIGHTS

- **Native Widescreen WUXGA Resolution (1920 x 1200)**
- **Short Throw Lens with 0.56:1 Throw Ratio**
- **LCoS Technology**
- **4500 Rated Lumens**
- **2000:1 Contrast Ratio**
- **Lens Shift provided for flexible installation**
- **Advanced Color Management System**
- **Network-ready RJ-45 Port**
- **HDBaseT interface**
- **Can be mounted in any orientation**
- **Supports multi-projector installation with image edge blending and geometry adjustments**