

REFLECTION® PORTFOLIO

CL-410, RS-440, RS-440LT, RS-900

RS-1100, RS-1100 *Ultra*

HOME THEATER AND
HOME CINEMA PROJECTORS




RUNCO
THE WORLD'S FINEST
HOME THEATER PRODUCTS™

REFLECTION® PORTFOLIO

With the Reflection® Portfolio, Runco® brings its famous video performance to a new level of sophistication, while putting Runco quality within reach of many aspiring home theater aficionados. These six Reflection Portfolio models combine a highly-efficient SuperOnyx™ DLP™ light engine with broad installation and integration options, establishing the perfect balance between performance, versatility and a variety of budgets.

The CL-410 features a native resolution of 1024 x 576, and provides an HDMI input for pure digital video signal transmission. The RS-440 and RS-440LT (long throw lens), offer a native resolution of 1280 x 720, HDMI connectivity and both horizontal and vertical lens shift for installation flexibility. The RS-900, RS-1100 and RS-1100 Ultra are full 1080p models with a native resolution of 1920 x 1080 and HDMI inputs.

Runco has implemented a host of advancements into all of these projectors' light engines to take full advantage of their 16:9 widescreen, DMD™ chips. They feature Runco's Enhanced GEN 3™ technology to produce deeper blacks, greater contrast ratio and brightness, and richly saturated colors. A sophisticated color-balancing system is engineered into every Reflection Portfolio product, resulting in the industry's best gray scale tracking, and they all have been engineered to comply with the Imaging Science Foundation™ (ISF) standards for proper setup and calibration ensuring maximum home theater image quality.

Of course, Runco's acclaimed Vivix® video processing and scaling assure pristine video imagery with every model and the generous light output capabilities of these projectors are powerful enough to handle larger screen sizes with ease. All models feature discrete power, aspect ratio and input selection, as well as IR and RS-232 controls, making it simple to partner these projectors with other audio/video components and automated control systems for a truly high-end home theater system.



CL-410



RS-440



RS-440LT



RS-1100 Ultra

O-Path™ CINOPTX™

O-Path™ Technology and CinOptx™ Premium Grade Lens Systems are featured on the RS-1100 Ultra. O-Path efficiently collimates the light energy from the lamp through the optical path to maximize light output and eliminate stray light that can reduce brightness and compromise contrast ratio performance. The broad variety of lenses in the CinOptx family are designed to bring images faithfully to the screen without the geometric and color spectrum aberrations common among "production" lenses.

CSMS

Runco International has carefully developed a full set of specification standards for our video projectors that is founded upon more realistic and easier to understand criteria for expressing the light output or brightness capability of a display device, as well as its contrast ratio. The Cinema Standards Measurement System™ was developed based on the actual experience one has in a movie theater, providing the consumer with an objective reference point to compare specifications.

CineWide *Bringing Hollywood Home™*

Runco's exclusive CineWide™ and CineWide with AutoScope™ technology ensures uncompromised widescreen reproduction of movies originally filmed in the CinemaScope 2.35:1 format. Through a combination of software, electronics and anamorphic optics, the projector is able to use the full pixel array on its DMD chip, thereby producing a 2.35 image with enhanced resolution and increased brightness. The full vertical height of the screen is filled with the image and useless black bars are eliminated. (Not available on the CL-410 or RS-440).

Live Link

The LiveLink® cabling system is Runco's exclusive solution for reliable, pure digital video signal transfer. This is the first cabling system capable of truly supporting longer runs while preserving all essential high-resolution video signal quality. LiveLink is nothing short of a revolution for home theater design.

isf certified

The Reflection Portfolio products incorporate the Imaging Science Foundation's "ISF 3c™" (Certified Calibration Configuration) setup and calibration standards in projector GUI menus to facilitate picture quality conforming to the highest standards in the industry.

In addition, the RS-900 and RS-1100/1100 Ultra incorporate SLIC™ or Selectable Lamp Intensity Control™, with a two-stage lamp output level to more closely match projector light output to the room, lighting conditions and screen size. The RS-1100 and RS-1100 Ultra also provide an electronically controlled iris, zoom, and focus adjustment for precision installation and calibration. The RS-1100 Ultra adds AxiShift™ multidirectional lens shift capabilities.

The RS-1100 Ultra also shares the heritage of Runco's top of the line models, incorporating O-Path™ technology for an enhanced optical light path and CinOptx™ Proteus premium lenses for superior image quality and the flexibility of five lens choices for a wide variety of throw distance ranges.

As a finishing touch, Runco engineers gave special consideration to the RS-900 and RS-1100/1100 Ultra cooling systems. These refined systems are more efficient, fostering longer projector and lamp life, while noise levels have been reduced to a whisper quiet for your home theater enjoyment.

For the ultimate in viewing flexibility and enjoyment, Runco's exclusive, award winning CineWide™ technology is available on the RS-440LT, RS-900 and RS-1100/1100 Ultra. CineWide™ with AutoScope™ is also offered on the RS-900 and RS-1100 Ultra. The CineWide option can transform these superb home theater systems into a true home cinema experience, reproducing 2:35 CinemaScope™ movies with breathtaking accuracy and full vertical screen image height, eliminating useless black bars at the top and bottom of the screen.



RS-900



RS-1100



RS-1100 Ultra

CINEWIDE™ AND CINEWIDE WITH AUTOSCOPE™

NO MORE BLACK BARS ABOVE AND BELOW THE PICTURE!

Runco's award winning CineWide and CineWide with AutoScope technology has created a revolution in faithful movie reproduction, transforming *home theater* into *home cinema*.

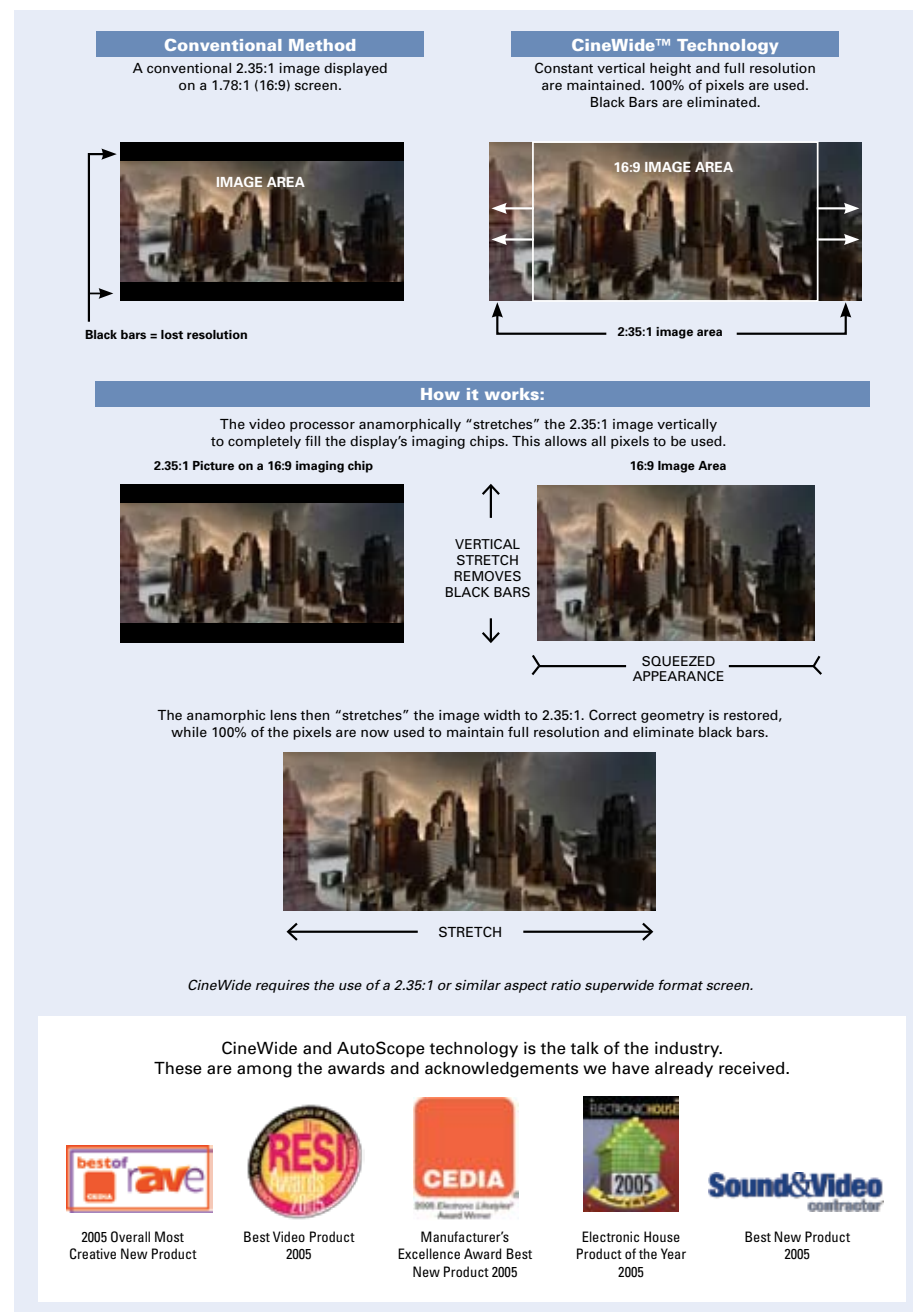


This technology provides uncompromised widescreen reproduction of movies originally filmed in the CinemaScope™ 2.35:1 format. It maintains constant vertical height on the screen just as in a movie theater.

When a viewer transitions from 1.78:1 (16:9) program material to superwide 2.35:1, the image simply gets wider while full screen image height is maintained, eliminating black bars.

This is done through an ingenious combination of software, electronics and precision anamorphic optics. With AutoScope, the anamorphic lens is motorized and remote controlled.

With CineWide, the projector is able to use the full pixel array on its SuperOnyx™ DMD™ chip, thereby producing a 2.35:1 image with enhanced resolution and increased brightness. No resolution or image area is lost to useless black bars on the top and bottom of the screen that contain no picture information. CineWide technology is available on the RS-440LT, RS-900 and RS-1100/1100 Ultra. CineWide with AutoScope is offered on the RS-900 and RS-1100 Ultra.



Specifications	CL-410	RS-440/RS-440LT	RS-900	RS-1100	RS-1100 Ultra
Projector Type:	Digital Light Processing (DLP™), Single-Chip DMD™	Digital Light Processing™ (DLP™), Single-chip, 16:9 SuperOnyx™ DMD™	Digital Light Processing™ (DLP™) Single-Chip SuperOnyx™ DMD™	Digital Light Processing (DLP) Single-Chip SuperOnyx DMD	Digital Light Processing™ (DLP™) Single-Chip SuperOnyx™ DMD™
Native Resolution:	1024 x 576	1280 x 720 (16:9)	1920 x 1080 (16:9)	1920 x 1080 (16:9)	1920 x 1080 (16:9)
Aspect Ratios:	4:3, Letterbox, 16:9 Anamorphic, VirtualWide®, Cinema, Virtual Cinema™	4:3, Letterbox, 16:9 Anamorphic, VirtualWide, Cinema, Virtual Cinema	4:3, Letterbox, 16:9 Anamorphic, VirtualWide, Cinema, Virtual Cinema	4:3, Letterbox, 16:9 Anamorphic, VirtualWide, Cinema, Virtual Cinema	4:3, Letterbox, 16:9 Anamorphic, Virtual Wide, Cinema, Virtual Cinema
Video Standards:	NTSC, PAL, ATSC	NTSC, PAL, ATSC	NTSC, PAL, ATSC	NTSC, PAL, SECAM, ATSC	NTSC, PAL, SECAM, ATSC
DTV Compatibility:	480i, 480p, 576i, 576p, 720p, 1080i	480i, 480p, 576i, 576p, 720p, 1080i. 1080p	480i, 480p, 576i, 576p, 720p, 1080i. 1080p	480i, 480p, 576i, 576p, 720p, 1080i. 1080p	480i, 480p, 576i, 576p, 720p, 1080i. 1080p
Picture Size (16:9 screens)	Recommended Width: 72 in. (1.83m) to 96 in. (2.44m) Maximum Width: 150 in.	Recommended Width: 72 in. (1.83m) to 96 in. (2.44m)	Recommended Width: 72 in. (1.83m) to 96 in. (2.44m)	Recommended Width: 72 in. (1.83m) to 96 in. (2.44m) Maximum Width: 200 in. (5.08m)	Recommended Width: 72 in. (1.83m) to 96 in. (2.44m) Maximum Width: 200 in. (5.08m)
Throw Distance (Factor x Screen Width) <i>(All CineWide™ Throws are specified using a 2.35:1 screen)</i>	Zoom 1.37 – 1.67	RS-440: 1.40 – 1.70:1 RS-440LT: 1.73 – 2.10:1 <i>Cinewide available on RS-440LT</i>	Lens Options: 1.87 - 2.20:1 1.87 - 2.20:1 CineWide (Whitney) in 2.35:1 aspect 1.52 - 1.69:1 CineWide (Rainier) in 2.35:1 aspect 1.40 - 1.65:1 CineWide (McKinley) in 2.35:1 aspect 1.52 - 1.69:1 CineWide with AutoScope (Rainier) in 2.35:1 aspect 1.40 - 1.65:1 CineWide with AutoScope (McKinley) in 2.35:1 aspect	1.55 to 1.93 (1.86 to 1.93 with CineWide)	Proteus Lens Options: B: Zoom 1.03 – 1.20 C: Zoom 1.23 – 1.47 D: Zoom 1.53 – 1.97 (with CineWide 1.20 – 1.58) <i>(Proteus B or C options not available with CineWide or CineWide w/AutoScope)</i>
Horizontal and Vertical Offset Without CineWide Option: <i>(Note: With CineWide option offsets vary per lens. Please contact Runco Technical Support for more information.)</i>	Horizontal shift: ± 8%, Vertical shift: Up to 40% above screen center, up to 60% below screen center	Horizontal shift: +/-8% (half width) Vertical: 115% up from center of screen (half height), as much as 100% down from center of screen (half height) - ceiling mount	Motorized vertical: 120% up from center of screen (half height), as much as 80% down from center of screen (half height) - ceiling mount	Varies per lens. Contact Runco technical support	Varies per lens. Contact Runco technical support
Light Output:	CSMS™** Specifications: Home Theater Calibration: 412 ANSI Lumens; 16 Foot-Lamberts (fL); 800 ANSI Lumens*	CSMS** Specifications: Home Theater Calibration: 421 ANSI Lumens; 16.3 Foot-Lamberts (fL); 850 ANSI Lumens*	CSMS** Specifications: Home Theater Calibration: 438-543 ANSI Lumens; 13.9-19.8 Foot-Lamberts (fL); 1200 ANSI Lumens*	CSMS Specifications: Home Theater Calibration: 442-591 ANSI Lumens; 14.9-21.8 Foot-Lamberts (fL) †Variable depending on RVR calibration; 1300 ANSI Lumens	CSMS Specifications: Home Theater Calibration: 442–591 ANSI Lumens; 14.9–21.8 Foot-Lamberts (fL) †Variable depending on RVR calibration; 1300 ANSI Lumens
Contrast Ratio:	CSMS** Contrast Ratio: 221:1; 2500:1	CSMS** Contrast Ratio: 230:1, 3000:1 ANSI	CSMS** Contrast Ratio: 200-220:1; 3000:1 typical (sequential)	CSMS** Contrast Ratio: 205:1–225:1; 1600:1–3200:1	CSMS** Contrast Ratio: 205:1-225:1; 1600:1-3200:1
Lamp:	250W NSH	230W UHP	200W UHP	250W	250W
Lamp Life:	2000 hours	2000 Hours	2500 hours	2000 Hours	2000 Hours
Inputs:	(1) Video, (1) S-video, (2) Component, (1) HDMI w/HDCP, (1) RGB DB15 (1) RS-232	(1) HDMI, (1) DVI-I, (1) Composite, (1) S-Video, (1) Component (RCA x3) (1) RS-232 (9-pin DIN)	(2) HDMI, (1) Composite, (1) S-Video, (1) Component (RCA x3), (1) RGB/Component (BNC x 5), (1) RS-232 (RJ-11)	(1) Composite Video, (1) S-Video, (1) RGB/Component Video (BNC connectors), (1) RCA Component Video, (1) HDMI	(1) Composite Video, (1) S-video, (1) RGB/Component (via BNC), (1) Component (via RCA), (1) HDMI, (1) RS-232
12V Output:	Max. 0.25 Amps, active when the projector is on	(1) 12V DC, 250mA (3.5mm mini-jack)	(1) 12V DC, 250mA (3.5mm mini-jack)	Max. 0.25 Amps, active when Cinema or Virtual Cinema Aspect Ratio is selected (CineWide versions only) or when projector is turned on	Max. 0.25 Amps, active when Cinema or Virtual Cinema Aspect Ratio is selected (CL-810 Ultra/CineWide with AutoScope only) or when projector is on
Power Requirements:	100 – 240V AC, 50/60Hz, 370W	100 - 240V VAC (auto-sensing), 50/60 Hz, 340W	100 - 240V VAC (auto-sensing), 50/60 Hz, 340W	100 to 240 VAC (auto-sensing), 50/60 Hz, 310 W	100-240V AC, 50/60 Hz, 310W
Operating Environments:	41 to 95°F (5 to 35°C); 20-80% humidity (non-condensing)	40°– 95° F, (5°–35° C), 10%–90% Humidity (non-condensing)	40°– 95° F, (5°–35° C), 10%–90% Humidity (non-condensing)	41° - 95° F, (5° - 35° C), 20% - 80% Humidity (non-condensing)	41° - 95° F, (5° - 35° C), 20% - 80% Humidity (non-condensing)
Dimensions (w/o feet):	Width: 14 in. (356.00 mm) Depth: 16 7/8 in. (429.00 mm) Height: 7 3/8 in. (188.00 mm) Weight: 25lbs. (11.34kg)	Width: 14 in. (356 mm) Depth: 16.7/8 in. (429 mm) Height: 7 3/8 in. (188 mm) Weight: 25 lbs. (11.34 kg)	Width: 19 11/16 in. (500.06 mm), Depth: 18 1/4 in. (462.50 mm), Height: 8 15/16 in. (224.77 mm), Weight: 34 lbs. (15.42 kg) (with standard lens)	Width: 19 11/16 in. (500.06 mm) Depth: 18 1/4 in. (462.50 mm) Height: 8 15/16 in. (224.77 mm) Weight: 34 lbs. (15.42 kg)	Width: 19 11/16 in. (500.06 mm) Depth: 22 in. (559.00 mm) Height: 8 7/8 in. (226.00 mm) Weight: 36 lbs. (16.32 kg)
Limited Warranty:	<u>Projector:</u> (2) Two years parts and labor from the date of delivery to the end user. <u>Lamp Warranty:</u> 1000 hours or (6) Six months, whichever comes first.	<u>Projector:</u> (2) Two years parts and labor from the date of delivery to the end user <u>Lamp Warranty:</u> 1000 hours or (6) six months, which ever comes first.	<u>Projector:</u> (2) Two years parts and labor from the date of delivery to the end user. <u>Lamp Warranty:</u> 1000 hours or (6) Six months, which ever comes first.	<u>Projector:</u> (2) Two years parts and labor from the date of delivery to the end user. <u>Lamp Warranty:</u> 1000 hours or (6) Six months, which ever comes first.	<u>Projector:</u> (2) Two years parts and labor from the date of delivery to the end user. <u>Lamp Warranty:</u> 1000 hours or (6) Six months, which ever comes first.

***ANSI Lumen specification:**

This is the typical projector luminosity (brightness) specification found in most sales literature. This measurement is included in RUNCO literature to allow for direct comparison with other manufacturer's projectors. These measurements can be taken at 9,000 to 13,000° Kelvin to get expected performance data when the projector is used in professional, commercial, and industrial displays.

****CSMS Home Theater Calibration ANSI Lumen Specification:**

These measurements are taken from the projector as set up in a home theater environment. The projector is calibrated to ISF specifications including setting the color temperature to 6500° Kelvin, the standard for reproducing video.

****CSMS Home Theater Calibration foot-Lambert (fL) Specification:**

This is the unit of measurement used in commercial movie theaters to express image brightness. The Society of Motion Picture and Television Engineers (SMPTE) specifies 16 fL as the target image brightness for film-based projectors using an open gate (without film in the projector). More importantly, today SMPTE specifies 12 fL as the target image brightness in Digital Cinema theaters using DLP™ technology. The foot-Lambert is dependant on screen size, screen gain, and projector light output.

All measurements are made at RUNCO to ANSI/NAPM IT7.228-1997 specifications using the Photo Research PR-650 SpectraColorimeter and Minolta LS-100 Luminance Meter, Video Essentials test DVD, and a Stewart Filmscreen StudioTech 130, 1.3 gain 72-inch wide screen. The projector is calibrated to a color temperature of 6500° Kelvin and has a minimum of 150 hours of usage.

Specifications are subject to change without notice. Optional ceiling bracket available.

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