Grand Cinema™
C3X

Headquarters:
SIM2 MULTIMEDIA S.p.A.
Viale Lino Zanussi, 11
33170 Pordenone - Italy
Tel. +39.0434.383256
Telefax +39.0434.383260
E-mail: info@sim2.it
Web site: www.sim2.com

Germany:
SIM2 DEUTSCHLAND GmbH
ArndStr. 34-36
D-60325 Frankfurt Am Main
Tel. 0800.8007462 (toll free)
International tel. +49.163.5007462
Telefax 0800.9007462
e-mail: info@sim2.de
web site: www.sim2de.com

UK:
SIM2 UK LTD
Steinway House, Worth Farm
Little Horsted, Nr. Uckfield
East Sussex TN22 5TT
Tel. +44.(0)1825.750850
Telefax +44.(0)1825.750851
e-mail: info@sim2.co.uk

USA:
SIM2 USA INC.
10108 USA Today Way
Miramar, FL 33025
Tel. +1.954.442.2999
Telefax +1.954.442.2998
E-mail: sales@sim2usa.com
Web site: www.sim2usa.com

CHINA:
SIM2 Multimedia S.p.A. Shanghai Representative Office
Room 905, Jing'an Tower 1701
Beijing Road West
200040, China
Tel: +86.21.62881991
E-mail: vsheng@sim2.com
Web site: www.sim2.net.cn

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"The best way to predict the future
is to invent it"

Alan Kay

SIM2 Multimedia:

The Glamour of Technology

Founded in 1995, SIM2 is an electronics brand that is synonymous with performance, innovation and style. The company provides the world's most comprehensive and impressive collection of projectors and high-end large screen displays on the market today. This reputation for outstanding design is well earned. Over the years the company has continually underlined its strong commitment to innovation and great passion for outstanding image quality. Indeed, SIM2 invests over 20% of its human resources and over 10% of total turnover in R&D activities, assuring innovation of products and cutting-edge stylish design. The result has seen the company consistently introduce a succession of world firsts, always raising the bar in terms of performance and industrial design. SIM2 has picked up a plethora of important awards in the process and has been feted by the press across the globe.

The Research & Development

SIM2 Multimedia is committed to the ideal of creating the finest quality video display solutions for both the home theater applications and professional video markets. Throughout the last twelve years, SIM2 has consistently delivered the core technological innovations behind the home theater industry's most significant advances. In the early days, home theater projectors were simply 'tweaked' versions of existing data units. SIM2 were the first company to use DLP® technology to produce the world's first digital home theater projector in 2000. Since then the company has been committed to bringing the latest technology to market first. It is this passion for creating cinema-quality images in the home that drives the company today.

Distribution

SIM2 is world-oriented with a direct presence in Italy (headquarters), Germany, UK and USA (sister companies) and a branch office in China. Select distribution in over 45 countries world-wide is achieved through partnerships with highly qualified distributors; all offering the same excellent customer service standards as the main company.

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There's more to this than meets the eye…

How can something that looks this good be so technically accomplished? SIM2's engineering expertise in designing high quality projection systems has enabled the company to create a high-technology 'statement' product; one that delivers true high-end performance. And, as you would expect from an Italian luxury brand, it has sublime good looks.

The SIM2 Grand Cinema C3X series: Cinema Revolution!

Why do all high performance home theater projectors have to be, so 'industrial' looking?

And does performance really determine the size and shape of a projector?

SIM2's Grand Cinema C3X series destroys both those myths at a single stroke. The compact stylish cabinet contains the highest of high technology, which delivers the very best HD images of any home theater projector.

The reason that SIM2 is able to design and manufacture such a device is simple: a continuing passion for creating the finest home theater projectors for consumers.

No-one else can do this; five patents protect the SIM2 ALPHAPATH™ light engine, making the C3X series a totally unique proposition.

When launched in 2005, the original C3X revolutionized the home theater market, and now with the latest addition to the series – C3X 1080 – the revolution continues…

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SIM2 Grand Cinema C3X series: The world's most compact, high performance 3-chip DLP®-based projector

A home theater creates an exclusive domain within your living space, one in which you are immersed in a total entertainment experience. Movies, sports, drama, gaming; whatever your personal viewing tastes, a projector-based system is the ultimate way to enjoy them. This is best achieved by using a 3-chip DLP®-based projector, the same technology favored by Hollywood for commercial theaters.

SIM2's R&D expertise in projector design has made it possible to reduce the size and increase the performance of 3-chip design, creating a sophisticated and innovative product series. SIM2's Grand Cinema™ C3X series - featuring three models, namely C3X LITE, C3X-E and now C3X 1080 - was created to fulfil the needs and dreams of discerning customers seeking to enjoy a truly high-end "ultimate cinema experience" from a product that exudes style.

Meeting customers' needs is as simple as building the right product – and who says technology can't be glamorous?

Throughout the last twelve years, SIM2 has launched a plethora of market-leading models. A continuous development program, fuelled by a genuine passion for creating the finest quality products is at the heart of the company's strategy. SIM2 is all about taking a new idea and developing it into highly desirable products.

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"The exterior form hints to the internal functions; A form recalling shapes of the past and a strong personality. The C3X series cannot camouflage itself but becomes an attractive element that suits a diversity of interior decoration styles."

Giorgio Revoldini

Amazingly attractive

For many, the cabinet design of a product is almost as important as its performance, particularly when it will be placed in the middle of a living room. The Grand Cinema C3X models are elegance personified; Italian Concept Designer Giorgio Revoldini has once again delivered a design with smooth curves, in keeping with previous Grand Cinema™ models, and very easy on the eye. A true Italian masterpiece.

Compact 3-chip Excellence

Big, bulky, 3-chip projectors are on their way out thanks to SIM2's Grand Cinema™ C3X projector series.

The C3X is extremely compact for a 3-chip design, measuring only 435x190x430mm or 17.2"x7.5"x16,9" (WxHxD) and weighing a mere 11 Kg or 24.3 lbs. (-70% and -50% respectively, compared to other 3-chips).

Put simply, a high performance, high specification 3-chip projector in a case 1/3 the size!

3-chip DLP®-system:

The Grand Cinema™ C3X series utilizes Texas Instruments' DMDs (Digital Micro-mirror Device), commonly referred to as 'chips'. The evolution of the DMD embraces a series of refinements aimed at enhancing performance and delivers all the detail available from today's high definition sources without the usual 'pixilation' or 'screen door' effects that afflict other projector technologies. The C3X 1080 model uses the latest generation DarkChip4™ chipset in its design.

DLP DMD in detail:

A DMD chip contains an array of hinged microscopic mirrors that recreate a video or graphic image by reflecting light onto a projection surface (screen). When a DMD mirror tilts away from its light source, a tiny space is opened into which stray photons can stumble. In first-generation DMD systems, these particles of light occasionally escaped to screen, subtly affecting the contrast ratio of the projected image. In the DarkChip™ DMD generation, a light-eating "dark metal" coat is applied to the interior of each chip, preventing stray light from traveling to screen when the mirrors are switched off. The unique features of the DarkChip™ DMD (reduced via size and pixel gap) reduce the scattering of light, resulting in increased image contrast (+25%) and an improved black color point / perception of black. Also, the DarkChip™ is a Fast Track Pixel (FTP) chip that allows approximately 50% reduction of the detrimental 'dithering' effect, for an exceptionally natural, crystal clear image.

DLP® technology - how it works and its advantages:

DLP® technology-based projectors designed for very high image quality or high brightness applications such as cinema and large venue displays rely on a 3 DMD-chip configuration to produce stunning images. The advantages of DLP® over competing technologies are: faster pixel response, excellent contrast, no screen burn and exceptional long-term reliability.

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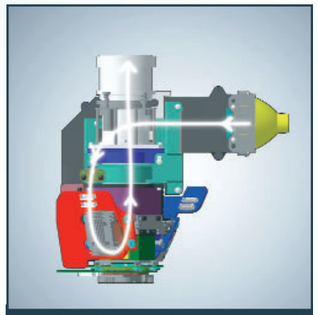


SIM2 ALPHAPATH™ Light Engine:

The fundamental feature of SIM2's light engine is its compact structure, which is achieved by overlapping the optical light-path through the engine. This gives it a distinctive ALPHA-shaped appearance.

Compact 3-chip DLP®-based light engine by SIM2

The core and most critical component in a Home Cinema Front Projection unit has always been its light engine. Image accuracy of a projector is governed by the quality of this piece of precision optical engineering.

A delicate balance is required between light engine, DLP® chipset and control electronics, in order to optimize the performance of each. SIM2 developed a new innovative system to re-size the illumination optical path while maintaining its length (necessary for correct picture aberration control) and SIM2's famous compact design (required for installation and interior-design constraints).

This folded light path, patented and named ALPHAPATH™, is the result of SIM2's advanced optical and thermal analysis.

Accurate management of the internal light path, without any kind of scattering or thermal dispersion, is achieved by utilizing a special coating on the inner surface, together with the prisms' TIR (Total Internal Reflection) control and optimized Relay Optics.

SIM2 customized optical components, lenses and prisms, are used throughout for optimum performance.

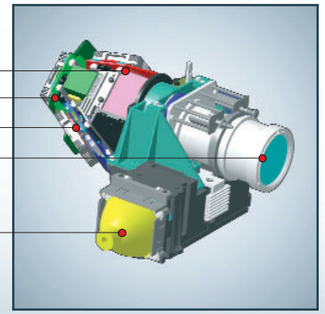
The DarkChip™, coupled with SIM2's light engine, delivers excellent contrast (over 10:000 typical for te C3X 1080, 6500:1 typical for the C3X-E, and 5500:1 typical for the C3X LITE) and image richness.

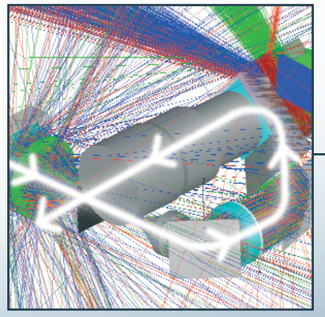
The C3X 1080 model has some additional refinements in its light engine, these include:

- Variable iris. Not a detrimental dynamic iris, but a user-controlled system to optimize image performance to environment. The choice of enhanced contrast (closed position) or maximum brightness (open position) can be selected.
- Optical notch filter. Improves primary color purity of the projector through selective filtering of lamp light output. Ensures REC 709 compliancy.
- Die-cast chassis. Dissipates heat away from the light engine, improving cooling efficiency of the projector.

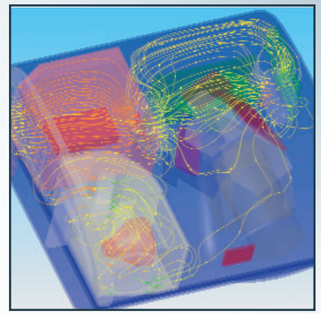
SIM2's ALPHAPATH™ Light Engine:

DMD chip (Red)
DMD chip (Green)
DMD chip (Blue)
High quality, spurious particles-free glass lens
Lamp





Raytracing: The picture illustrates raytracing used to identify stray light sources inside the optical path and prism assembly. Accurate simulations modelling ON and OFF DMD states and coating on prisms surfaces have been performed to evaluate DMD diffraction and risk of ghost images, as well as to optimize contrast. Color splitting and recombining has been fully modelled to guarantee highest efficiency and purity of colors.



SIM2 Thermal Management

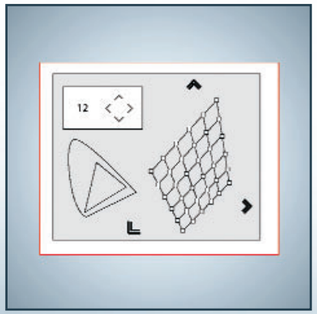
Accurate thermal and fluid-dynamics analysis was carried-out by SIM2's R&D department during the design of Grand Cinema™ C3X, this aided in the creation of a light engine that avoids excessive light spill and overheating of the light path.

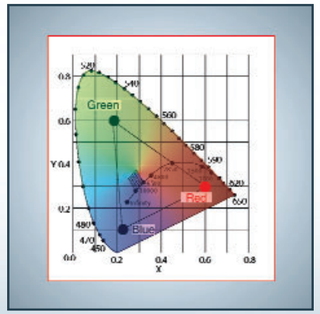
Cooling of the projector is particularly clever, with side mounted intakes and exhausts, efficient fans and an innovative 'heat pipe' – a heat transfer mechanism that can transfer large quantities of heat away from the light path - all forming the cooling system.

All this adds up to one of the quietest - and coolest - projectors on the market.

SIM2's Live Color Management

The Grand Cinema™ C3X-E and C3X LITE are loaded with a variety of software options for adjusting picture quality and has plenty of memory locations to store different preferences. SIM2's Live Color Management offers complete control over color temperature via user adjustments corresponding to specific points on the CIE chart that defines color hue and saturation. The horizontal lines set the low (right side, red component, 6.500°K) and high temperature values (left side, blue component, 10.000°K). The points along the lower horiz. line represent white points that belong to the black body curve. Along the vertical lines the color temperature is constant but differs from the black body curve; for instance if you select a point from the higher part of the diagram you will increase the green component, while the lower part will increase the purple component. In addition to having preset memories (3 for each input on C3X-E and C3X LITE, 6 on C3X 1080) that can be adjusted, saved, and recalled with the press of a button, the Grand Cinema™ C3X also provides additional memory positions for the most discerning home theater enthusiast.





Gamma correction

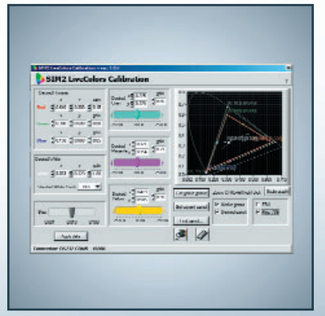
The Grand Cinema™ C3X series also includes features such as Gamma Correction that determines the system's response to the grey scale; The higher the gamma exponent the faster the brightness decreases with signal intensity.

SIM2's C3X projector series has 4 sets of gamma curves available to optimize image-based variations in the source material, ambient lighting,

and individual preferences: STANDARD for movies, ENHANCED to fully exploit the advantages of DLP® technology, GRAPHICS for PC and graphic sources, and USER with 16 parametric gamma curves (ranging from 1.5 to 3 with a 0.1 increment).

Live Color Calibration – C3X 1080 only

SIM2's Live Color Calibration software offers greater control over the picture parameters of the C3X 1080 projector. The primary colors, secondary colors and white point are all controllable, via this PC-based software, allowing full calibration of the C3X 1080 to be carried out, thereby ensuring maximum picture performance is achieved from the C3X 1080, in any home theater system.



Intelligent Memory Manager

The Grand Cinema C3X projectors can store up to 3 distinct image memory settings for each input. The image parameters that can be saved/recalled are brightness, contrast, color, tint, sharpness, filter, sharpness mode, video type, noise reduction, picture aspect, color temperature, overscan and gamma. Each saved Memory is associated with a source and signal type and is automatically recalled every time that particular source and signal type combination is selected.

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SIM2's proprietary light engine, featuring state-of-the-art of optical engineering and several patented solutions, has been designed without compromises to achieve the best performance from video applications.

Extraordinary vibrant colors and true blacks

The Grand Cinema™ C3X blends outstanding sharpness and image stability with remarkable black depth and image contrast. The DarkChip™ DMD, coupled with SIM2's light engine, offers an excellent contrast ratio and image sharpness: it paints an inky blackness, with colors that are simply stunning; each shade drenched in eye-catching opulence. The latest de-interlacer and video enhancer provide progressive scan support from any incoming picture signal.

Selection of high quality lenses

For ease of installation, the projector series sports the flexibility of two, new spurious particles-free, high quality glass lens options, namely T1 (optional lens with short throw ratio: 1,5-2:1) and T2 (standard lens with long throw ratio: 2-3:1), making it possible to project an immaculate image on a big screen.

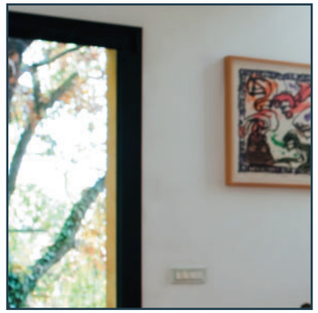
The C3X 1080 offers three lens options: T1 (short-throw: 1.37-1.66:1), T2 (medium-throw: 1.75-2.48) and T3 (long-throw: 2.6-3.9:1).

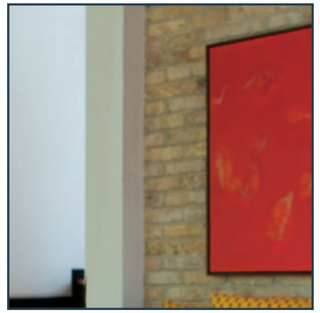
Exceptional brightness

The Grand Cinema™ C3X is an exceptionally flexible projector, designed to optimize lamp efficiency and lifetime. The C3X-E and C3X 1080 models feature a high-efficiency 250W lamp, are bright enough (up to 2500 ANSI Lumens) to overcome above average levels of ambient light and illuminate larger screen sizes (9ft>). For those who do not require the higher brightness level of these models, SIM2 has developed the C3X LITE projector that is equipped with a lower powered lamp (150W) and a simplified version of the ALPHAPATH™ light engine. The Grand Cinema™ C3X series has also been designed to minimize lamp maintenance operations: a detachable lamp case eases replacement of the lamp. Just extract the lamp case holder from the base of the projector and replace it with a new one. This is an activity that any SIM2 Customer Service center can carry out quickly and easily.

Harnessing the power of High Definition

It's all about lines and pixels: NTSC is the lowest resolution TV standard with 525 lines (480 of which make a full frame), PAL 625 lines (576 of picture information) and finally HD, which has either 720 or 1080 lines of resolution. The Full HD (1080p) format has a picture made up of over two million pixels!





Available from a variety of sources - HDTV broadcasts, Blu Ray and HD DVD disc formats, games consoles, etc – high definition is offering consumers a level of video picture quality today, that is better than at any other time in history. SIM2's C3X models are designed to fully exploit all this available extra picture quality.

The picture technology used in their design (3-chip DLP®), when combined with SIM2's patented light engine, delivers crystal-clear HD images on-screen. Movies, sports and games are all brought to life with C3X.

The C3X 1080, the latest addition to the range, takes C3X performance to a higher level; delivering, as it does, Full HD (1920 x 1080 progressive) images from 1080p sources.

Future-proof inputs

The Grand Cinema™ C3X back panel contains everything you need connection-wise. The choice of video inputs (both analog and digital) is exemplary with HDMI™– HDCP compliant connections at the top of the list! C3X-E and C3X 1080 models offer two HDMI inputs for added convenience. And, as with all products in the Grand Cinema™ line, C3X models can be updated with the latest control software via the RS232 and the USB ports.

HDMI™ (High Definition Multimedia Interface)

HDMI™ is a purely digital connection that transmits the uncompressed bitstream directly from the source through to the display, for a more accurate image.

Grand Cinema C3X Series:

Technical specifications

	C3X LITE	C3X-E	C3X 1080
LIGHT ENGINE			
DLP® Type: 3 Chip DMDs	720p HD2+ DC3	720p HD2+ DC3	0,95" 1080p DC4
Resolution:	1280x720 pixels	1280x720 pixels	1920x1080 pixels
Lens:	High quality, high resolution improved optics for higher contrast and better black level with both motorized zoom and focus adj.		
Lamp power consumption:	150W dimmable to 132W	250W dimmable to 200W	250W dimmable to 200W
INSTALLATION			
Throw ratio standard lens:	2,0-3,0:1 (type T2)	2,0-3,0:1 (type T2)	1.75-2.48 (type T2)
Throw ratio optional lenses:	1,5-2,0:1 (type T1)	1,5-2,0:1 (type T1)	1.37-1.66:1 (type T1) 2.6-3.9:1 (type T3*)
Lens shift: half up picture =+50%	•	•	•
Digital keystone adjustment	•	•	•
Picture size (inches diagonal):	50-250	50-300	50-300
Aspect ratio:	4:3, 16:9 Anamorphic, LetterBox, panoramic, pixel to pixel + 3 custom-user adjustments		
ELECTRONICS			
Horizontal & vertical scan freq.:	15-80kHz/48-100Hz	15-80kHz/24-100Hz	15-80kHz/24-100Hz
SDTV:	PAL (B,G,H,I,M,N,60); SECAM; NTSC 3,58; NTSC 4,43 automatically selected		
HDTV: ATSC (480p, 720p, 1080i); 576p + 1080i 50Hz	•	• + 1080p(**)	• + 1080p,1080@24fps
PC graphic standard: VGA, SVGA, XGA, SXGA, UXGA @ 65Hz	•	•	• WUXGA
On Board Video Processing	• 8 bit	• 10 bit	• 10 bit
Contrast ratio (Full ON/ Full OFF):	5500:1	6800:1	>10.000:1

		C3X LITE	C3X-E	C3X 1080
INPUTS/OUTPUTS				
Digital:	HDMI™-HDCP compliant	1	2	2 (1.3 with DeepColor)
Analog:	S-Video (mini DIN 4 pins)	1	1	1
	Composite Video (RCA)	1	1	1
	RGBS-YCrCb (4 RCA)	1	1	1
	RGBHV (D-Sub 15 pin)	1	1	1
Control:	USB connector	1	1	1
	RS232 (D-Sub 9 pin)	1	1	1
Miscellaneous:	12 V 100 mA (via jack)	1	1	1
	Input External IR sensor	1	1	1
GENERAL SPECIFICATIONS				
Software control: upgradable via RS232, serial interface or USB		•	•	•
Weight: 11 Kg. or 24.3 lbs		•	•	•
Dimensions (WxHxD): 435x190x430 mm (17.2"x7.5"x16.9")		•	•	•
Mains voltage range: 100÷240 +/-10% (48/62 Hz)		•	•	•
SUPPLIED ACCESSORIES				
Installation and User Manual		•	•	•
AC power cords (EU, UK, USA) (2m or 6.6 ft.)		•	•	•
Backlit remote control and batteries		•	•	•
Live Colors Calibration Software		-	-	•

(*) C3X 1080 lens type T3: available in Q1 2008
(**) The C3X-E unit is not a native 1080 projector; However it does handle full HD content
Due to constant product development, specifications and design might be subject to change without notice.

	C3X LITE	C3X-E	C3X 1080
OPTIONAL ACCESSORIES			
Ceiling bracket	•	•	•
CABINET COLORS			
Standard cabinet finish	Silver Gray	Silver Gray	Gun Metal
Optional cabinet finish	-	-	Racing Red Gold White Evolution Black Shadow