



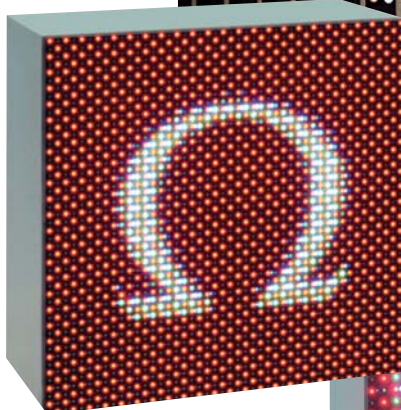
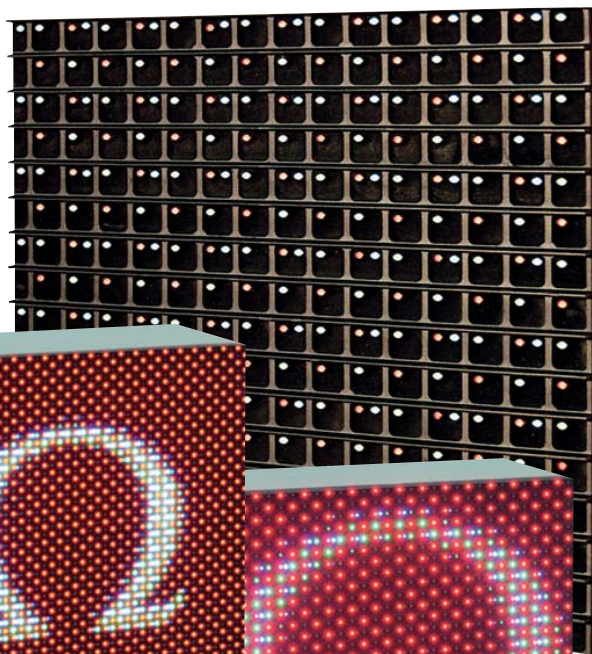
Nova Colour display board

Some may say that sport is pure pleasure, but high level competitions require so much effort and so many years of sacrifice by the athletes, that their performances must be put in the right light for the audience and the media covering an event.

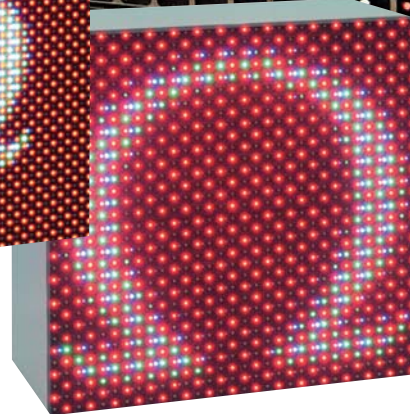
In addition, the audience is increasingly knowledgeable and aware of performance levels. When they arrive at the stadium, they already know the times to be beaten. The pleasure of attending sport events should be enhanced by direct information about the levels of performance achieved. This basic concept has been Swiss Timing' battle horse for several decades; in fact, ever since technology made it possible to build

computer controlled display boards connected to the timekeeping peripherals. Being present at important events, Swiss Timing has brought its know how and technological innovation to the venues wherever the sporting elite meet.

From alphanumeric boards, the first black and white matrix boards, then video and colour. Each era has seen Swiss Timing on the field. The challenge has always been to guarantee the live audience the same visual comfort as they would have in front of their TV screens.



V20 / 10



V30 / 15

Enhanced pixel resolution (EPR) technology



Thanks to the Enhanced Virtual Pixel (EVP) Technology, it is now possible to improve video pictures considerably using the same number of LED's. The advantage is obvious: a much higher resolution at a much better price !

The difference between the standard and the

EVP Technology is shown below. Both the pictures are from the same source, the right-hand one is displayed with a standard 30 mm pixel, while the left one is displayed with the same pixel size, but using the EVP Technology.

The results show that the new technology offers much higher definition and finer details.

Several steps on image analysis are cumulated to reach the best virtual definition. The colour distribution on each LED is the result of patented algorithms based on the latest knowledge in regard to the human eye colour perception. The picture quality has almost doubled.



Module

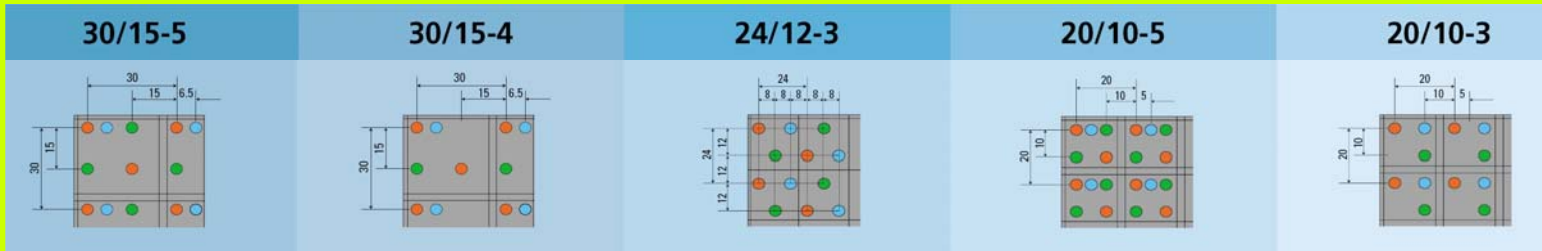
The modules are built using steel frames. Each module is completely mounted and tested in the factory. Besides the pixel card, a module contains the power supply and the driver card used to address the pixels. 2 fans, mounted on the door, allow easy circulation of the air when no air-conditioning is installed.

Each module is only 15 cm thick, which is much benefit in regard to the total weight of the front face. Once the modules are fixed on the front face, the connection from one module to the other is ensured thanks to a flat cable which transmits the information and a standard cable which supplies the power.

During maintenance, easy access is allowed from the back of the module.

Video Color Display	30/15-5		30/15-4		24/12-3		20/10-5		20/10-3	
	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor	Outdoor	Indoor
General Characteristics										
• Pixel pitch (real / EPR)	[mm] 30 / 15		30 / 15		10 / 20		20 / 10		20 / 10	
• Colour	R G B		R G B		R G B		R G B		R G B	
• Number of LED per colour	[pieces] 2 / 2 / 1		2 / 1 / 1		1 / 1 / 1		2 / 2 / 1		1 / 1 / 1	
• Color palette, number of colors	68 billions (12 Bit/colour)		68 billions (12 Bit/colour)		68 billions (12 Bit/colour)		68 billions (12 Bit/colour)		68 billions (12 Bit/colour)	
• Life expectancy	[hours] 70'000		20'000		70'000		70'000		70'000	
• Brightness	[cd / m2] 5'500		2'200		4'500		2'200		5'500	
• Contrast ratio	measured at 10'000 NIT on white paper 15:1		30:1		15:1		40:1		15:1	
• Viewing angle - horizontally / vertically	[degrees] 140 / 60		140 / 60		140 / 60		140 / 60		140 / 60	
Modul design										
• Number of pixel per module (real/virtual)	[pixel] 768 / 3'072		768 / 3'072		1200 / 4'800		1728 / 6'912		1728 / 6'912	
• Number of pixel horizontally (real/virtual)	[pixel] 32 / 64		32 / 64		40 / 80		48 / 96		48 / 96	
• Number of pixel vertically (real/virtual)	[pixel] 24 / 48		24 / 48		30 / 60		36 / 72		36 / 72	
• Housing	steelpl. - grounded and powder covered		steelpl. - grounded and powder covered		steelpl. - grounded and powder covered		steelpl. - grounded and powder covered		steelpl. - grounded and powder covered	
• Module size	[mm] 960 x 720 x 150		960 x 720 x 150		960 x 720 x 150		960 x 720 x 150		960 x 720 x 150	
• Weight	[kg] 34		33		34		36		35	
• Maximum power consumption	[W] 540		504		576		696		672	
• Average power supply	[W] 162		151		173		209		180	
• Front / Rear face protection	[IP] 54 / 65		21 / 54		54 / 65		21 / 54		54 / 65	
• Operating temperature	[C°] -20 / +40		+5 / +30		-20 / +40		+5 / +30		-20 / +40	
• Display refresh rate	[Hz] 240 Hz		240 Hz		240 Hz		240 Hz		240 Hz	

Pixel configuration



Self-supporting modules for mobile installations

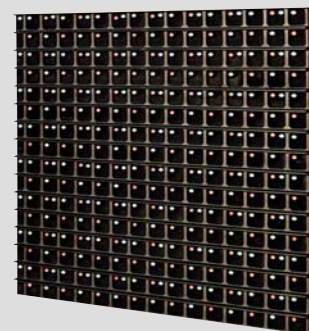


Key features

- Excellent brightness with enhanced contrast
- Low power consumption
- Long life expectancy
- Wide horizontal viewing angle
- Fully integrated with Swiss Timing timekeeping systems
- Dedicated sport software packages
- Maintenance service program
- Genuine spare parts availability

Pixel card

The LED's are mounted on SMD circuit boards called pixel cards. Build around a plastic frame, the pixel card benefits from louvers whose dimensions and position has been exactly computed to reach the best compromise between vertical viewing angle and sunlight protection. The plastic frame is filled, from the front face side, with polyurethane dark black powdered. Thanks to those features, we can proudly claim a black front face measured under 100 cd/m2 in standard day conditions. The back side of the pixel card is also generously filled with silicon, absorbing all the electronic elements and protecting them against all possible corrosions caused by humid and corrosive environments.



outdoor



indoor

Images, transmission and software

The data is transferred in bulk from the control room to the display through optical fibers. Those fibers are connected to the central unit; this one operates as a multifunction device equipped with the digitizer for image processing and with all the peripherals to connect to external peripherals. The digitizer decodes the standard video signals (Y/C and FBAS). An additional processor manages the Galactica software interface, which guarantees the full integration of your timing system. This is a tremendous advantage to ensure full compatibility of your global installation.



Swiss Timing LTD
PO Box 138, 2606 Corgémont / BE, Switzerland
Phone +41 32 488 36 11 Fax +41 32 488 36 09
info@swisstiming.com www.swisstiming.com

A COMPANY OF THE SWATCH GROUP

All the information contained in this document can be modified without warning. Swiss Timing SA cannot be made responsible for any errors contained in this document or for any damage secondary or consequent (including the loss of profits) arising from the supplying, performance or use of this product, whether it be on the base of a guarantee, a contract or any other legal ground.