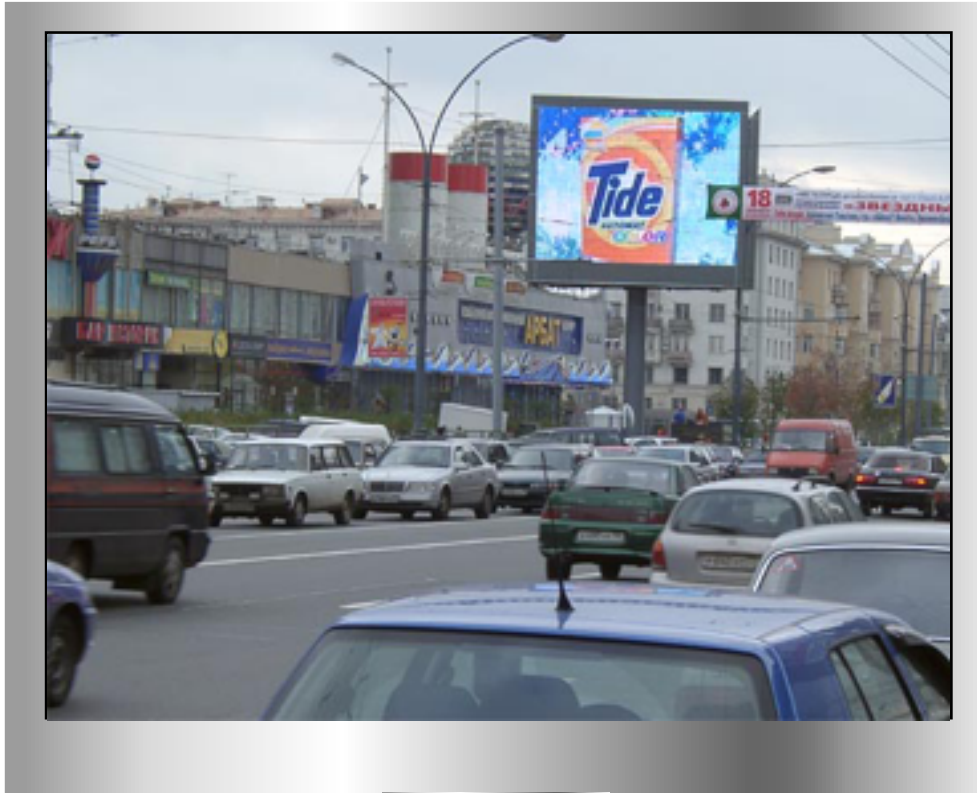


Large city screens



***Full color LED
Video Screens***

***Stationery
Mobile
Outdoor
Indoor***





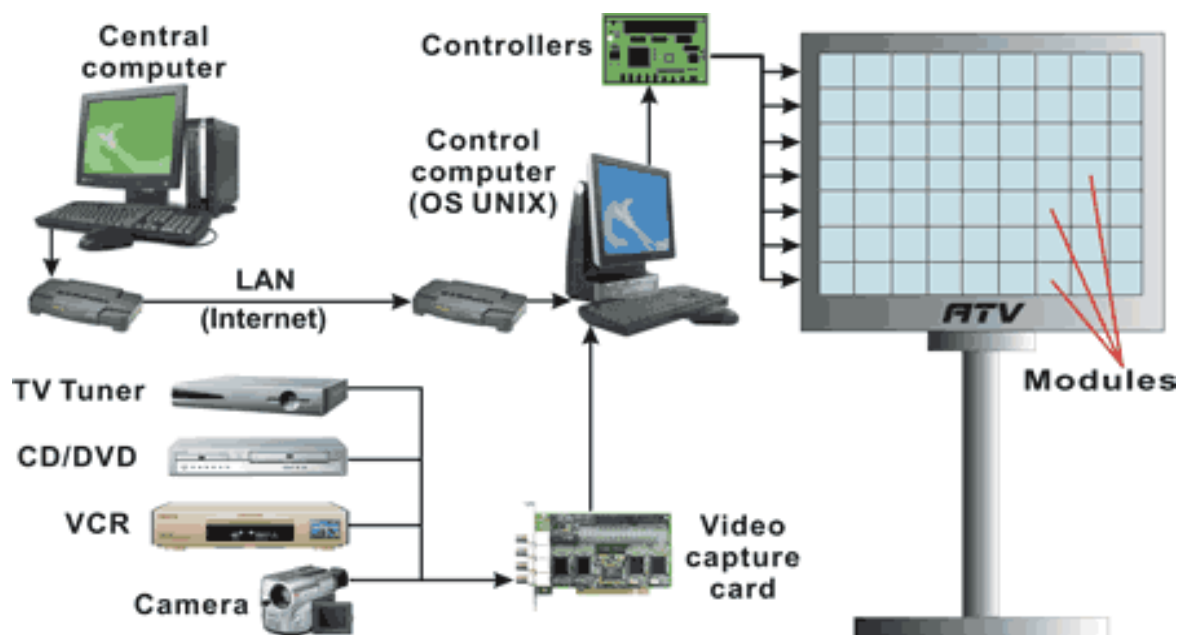
Large full-color LED video screen
5, Tverskaya, Moscow, Russia

Within the appearance on the market of extra bright diodes, full colored LED screens almost fully substituted their predecessors- lamp screens, due to their reliability, quality of image, high resolution and small amounts of energy consumption.

Despite the dynamic advertisement, LED screens are used as well for translating live events, different arrangements and city celebrations.

Thanks to the possibility of connection LED screens into network, central computer may transfer information and the schedule of broadcasting to the controlling computer of each screen.

Within the appearance on the market of SMD diodes (3 diodes in one case) appeared small video screens with high resolution for the indoor exploitation - in the concert and sport halls, television studios, conferences, airports and train stations.



Schematic diagram of the LED screen

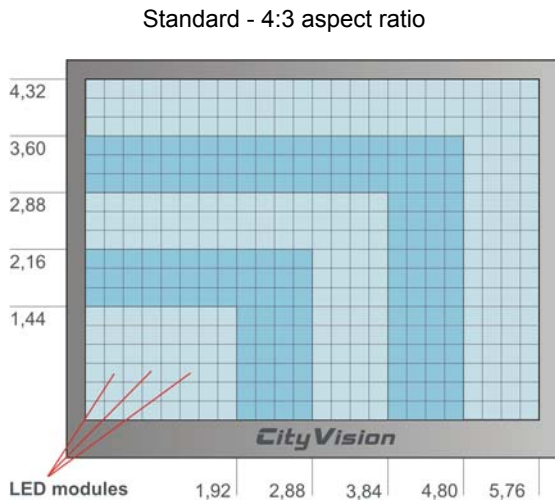
Usage of the LED screens

- Outdoor dynamic advertisement
- Crowded arrangements, concerts, holidays
- Presentations
- Exhibitions
- Meetings
- Train stations, airports
- Metro
- Sport arenas and halls
- Concert halls and squares
- TV studios
- Modern dynamic video banners

Major advantages of the LED screens

- Broadcasting of live video and dynamic advertisement
- High quality
- Module construction of the screens
- High resolution (up to 1280 x 960 pixels)
- Extra bright LED
- High reliability and durability
- High brightness and contrast of the image
- Allowance to increase sizes of the screen
- Allowance to unite the screens into the network
- Quick substitution of the models
- Easy maintenance

Module construction of the screens



Advantages of the module structure

- Construction of the screens of different sizes and resolutions
- Possibility of size increase when upgrading
- Construction of the screens of different forms and shapes
- Construction of the screens of high resolution
- Easiness of assembling and servicing
- Exchangeability of the modules
- Easy localization of the errors
- Possibility of constructing mobile and easily assembling screens

It should be also mentioned that it is necessary to keep sides aspect ration 4:3 for live video broadcasting on the video screen. Otherwise the image is going to be cut or shown on the different parts of the screen.

On the picture (left above) there is an example of construction of the video screen's modules with the linear size 480 x 480 mm, pixel pitch 15 and ratio of the sides – 4:3.

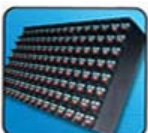
In the table (left) there are linear sizes, image area and resolution of the screen.

Using modules with different pixel pitch you can assemble a video screen with any linear size and resolution you need.

Note: All data in tables are for reference only. If you want to get more information about modules produced by our company you can visit our web site or send your request to us.

Module - 15 mm pitch, 16x16 pixels, Size: 240 x 240 MM			
Number of modules	Screen size, m	Image area, sq.m	Resolution, pixels
8 x 6	1,92 x 1,44	2,76	128 x 96
12 x 9	2,88 x 2,16	6,22	192 x 144
16 x 12	3,84 x 2,88	11,06	256 x 192
20 x 15	4,80 x 3,60	17,28	320 x 240
24 x 18	5,76 x 4,32	24,88	384 x 288

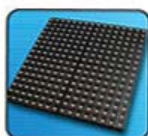
Modules for video screens



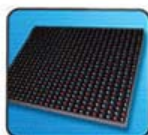
Modules –segments for building screens of all sizes and resolution. (like building bricks)

Essential parameters of a module:

- Pitch (distance between pixels, mm)
- Resolution (number of pixels in a module)
- Linear size (height and length)
- Brightness in cd/sq.m (nit)
- Viewing angles (horizontal and vertical)
- Pixel composition (number of LEDs that make up a pixel)



However pitch is the primary feature. The smaller the pitch, the higher the resolution within the same physical dimensions. Most typical pitches used for screens are: 10, 12.5, 15, 20, 25 and 38 mm.



With the appearance of SMD LED (3 LEDs – red, green and blue – in the same case) it became possible to start production of the modules with the pith smaller than 10 mm.



Pixel composition (example):

- 2R – 2 red LEDs
- 1G – 1 green LED
- 1B – 1 blue LED

Technical data of some modules for outdoor screens

Model	Type	Pixel configuration	Number of pixels	Pitch, mm	Size, mm	Brightness, cd/m ²	Viewing angle		Weight, kg	Power, W	Temperature range
							Vert.	Hor.			
m15-16x16	Outdoor	1R-1G-1B	16 x 16	15	240 x 240	5000±10%	60°	120°	2,0	80	-40°...+50°C
m19-16x16	Outdoor	1R-1G-1B	16x16	19	304x304	5000±10%	60°	120°	2,2	80	-40°...+50°C
m22-8x8	Outdoor	2R-1G-1B	8 x 8	22	176 x 176	5000±10%	60°	120°	1,0	20	-40°...+50°C
m30-8x8	Outdoor	2R-1G-1B	8 x 8	30	240 x 240	5000±10%	45°	60°	1,5	20	-40°...+50°C
m38-8x8	Outdoor	2R-1G-1B	8 x 8	38	305 x 305	5000±10%	45°	60°	1,7	20	-40°...+50°C

Note: All data in tables are for reference only. If you want to get more information about modules produced by our company you can visit our web site or send your request to us.

Technical data of some video screens' models

Video screens on the base of the module m22-8x8 (pitch 22 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m.	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-22/13d	24	18	432	192x144	4,22x3,17	13,38	27 648	490	9,0	4,5
ATV-22/18d	28	21	588	224x168	4,93x3,7	18,21	37 632	665	12,0	6,0
ATV-22/24d	32	24	768	256x192	5,63x4,32	23,79	49 152	870	16,0	8,0
ATV-22/37d	40	30	1 200	320x240	7,04x5,28	37,17	76 800	1 360	24,0	12,0
ATV-22/84d	60	45	2 700	480x360	10,56x7,92	83,64	172 800	3 055	54,0	27,0

Note:

- 1) Brightness - 5 000 ± 10% cd/m²
- 2) Viewing angel horizontally 120° and vertically 60°
- 3) Screen side aspect ratio - 4:3 (TV standard)
- 4) Weight of the screen doesn't include the framing construction
- 5) Following power consumption is without ventilation and heating of the system
- 6) For producing advanced LED systems mentioned in the table we use the products of American, European and Japanese led suppliers.
- 7) Calculations for non-standard image areas (which are not included in the table) are made separately.

Video screens on the base of the module m15-16x16 (pitch 15 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-15/11d	16	12	192	256x192	3,84x2,88	11,06	49 152	485	16,0	8,0
ATV-15/17d	20	15	300	320x240	4,8x3,6	17,28	76 800	760	24,0	12,0
ATV-15/34d	28	21	588	448x336	6,72x5,04	33,87	150 528	1 485	47,0	23,5
ATV-15/69d	40	30	1200	640x480	9,6x7,2	69,12	307 200	3 030	96,0	48,0

Note:

- 1) Brightness - 5 000 ± 10% cd/m²
- 2) Viewing angel horizontally 120° and vertically 60°
- 3) Screen side aspect ratio - 4:3 (TV standard)
- 4) Weight of the screen doesn't include the framing construction
- 5) Following power consumption is without ventilation and heating of the system
- 6) For producing advanced LED systems mentioned in the table we use the products of American, European and Japanese led suppliers.
- 7) Calculations for non-standard image areas (which are not included in the table) are made separately.

Video screens on the base of the module m19-16x16 (pitch 19 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-19/18d	16	12	192	256x192	4,86x3,65	17,74	49 152	525	16,0	8,0
ATV-19/28d	20	15	300	320x240	6,08x4,56	27,72	76 800	820	24,0	12,0
ATV-19/54d	28	21	588	448x336	8,51x6,38	54,34	150 528	1 605	47,0	23,5
ATV-19/90d	36	27	972	576x432	10,94x8,21	89,83	248 832	2 650	78,0	39,0

Note:

- 1) Brightness - 5 000 ± 10% cd/m²
- 2) Viewing angel horizontally 120° and vertically 60°
- 3) Screen side aspect ratio - 4:3 (TV standard)
- 4) Weight of the screen doesn't include the framing construction
- 5) Following power consumption is without ventilation and heating of the system
- 6) For producing advanced LED systems mentioned in the table we use the products of American, European and Japanese led suppliers.
- 7) Calculations for non-standard image areas (which are not included in the table) are made separately.

Video screens on the base of the module m30-8x8 (pitch 30 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-30/17d	20	15	300	160x120	4,8x3,6	17,28	19 200	505	6,0	3,0
ATV-30/34d	28	21	588	224x168	6,72x5,04	33,87	37 632	985	12,0	6,0
ATV-30/69d	40	30	1 200	320x240	9,6x7,2	69,12	76 800	2 010	24,0	12,0

Note:

- 1) Brightness - 5 000 ± 10% cd/m²
- 2) Viewing angel horizontally 60° and vertically °
- 3) Screen side aspect ratio - 4:3 (TV standard)
- 4) Weight of the screen doesn't include the framing construction
- 5) Following power consumption is without ventilation and heating of the system
- 6) For producing advanced LED systems mentioned in the table we use the products of American, European and Japanese led suppliers.
- 7) Calculations for non-standard image areas (which are not included in the table) are made separately.

Video screens on the base of the module m38-8x8 (pitch 38 mm)

Model	Number of hor. modules	Number of vert. modules	Total number of modules	Screen resolution	Screen size, m	Image area, sq.m	Number of pixels	Weight, kg	Max power, kW	Average power, kW
ATV-38/54d	28	21	588	224x168	8,51x6,38	54,34	37 632	1 105	12,0	6,0
ATV-38/90d	36	27	972	288x216	10,94x8,21	89,83	62 208	1 825	20,0	10,0
ATV-38/111d	40	30	1 200	320x240	12,16x9,12	110,90	76 800	2 250	24,0	12,0
ATV-38/217d	56	42	2 352	448x336	17,02x12,77	217,36	150 528	4 410	47,0	23,5

Note:

- 1) Brightness - 5 000 ± 10% cd/m²
- 2) Viewing angel horizontally 60 and vertically 45°
- 3) Screen side aspect ratio - 4:3 (TV standard)
- 4) Weight of the screen doesn't include the framing construction
- 5) Following power consumption is without ventilation and heating of the system
- 6) For producing advanced LED systems mentioned in the table we use the products of American, European and Japanese led suppliers.
- 7) Calculations for non-standard image areas (which are not included in the table) are made separately.