LED Display Boards

LED-Matrix Display Boards

LED-Matrix Boards are very complex. A lot of specifications does influence the price. We would like to give you a short introduction on different terms that are used for LED-Matrix Boards:

Pixel: One Pixel is the smallest point you can show with a Matrix-Scoreboard. Any pixel can consist of several LED's.

Pitch: Describes the distance from pixel to pixel. In general the pitch starts with 4 mm and goes up to 50 mm. The smaller the pitch, the better the resolution and the more expensive the board ia per m².

Pixel Size: The bigger the pixel dimension compared to the pitch, the sharper the picture (fill grade).

LED/Pixel: Any Pixel can consist of one or more LED´s. The more LED´s per pixel as better is the scoreboard. But it also depends on the use of the LED-type.

Resolution: The resolution is the amount of pixels in vertical and horizontal order. The higher the resolution, the better is the quality of the picture or text!

Luminosity: The luminosity is measured in cd/m² or in Nit(Candela per square meter) and is important for the brightness of the board. This technical characteristic is also given in different ways.
Some producers will give the luminosity when all colors are in maximum brightness. Any serious producer will give the brightness in the white-balanced state.
Different colored scoreboards need also a different luminosity for outdoors.
1 color   2000 cd/m²
2(3) col   3500 cd/m²
full color   5000cd/m² in white-balanced state!!
For full color scoreboards it is very important to give the luminosity in white balanced state. Some manufacturers will give the brightness in all colors with 100%. This can result in a brightness of 8.000 cd/m², but after the board is calibrated (white-balanced) it has only 5.000 cd/m² left!

Viewing Angle: This is a dimension which is not 100% the same for different manufacturers. Some producers define the maximum angle before the scoreboard gets dark. This is a bad definition!
All serious manufacturers will define the half-center brightness, which means in simple words the angle where you still have 50% of the full luminosity!

Refresh rate: The higher the refresh rate the smoother is the picture.
We have a standard refresh rate of 240 and for the professional series we have a refresh rate of 500.

Outdoor: The LED's are completely sealed with a special silicone and there are horizontal sunblockers integrated in the LED modules.

1 Color: The display has only one color (e.g. red). This color can have different shades to make a better picture (e.g. 256 shades, like a black and white picture). Most of these displays are also able to show animation-files.

2(3) Color: The display has LED's with two different colors in each pixel (red and green). This two colors can be mixed so we can have more than 4000 colors. But all colors are in red, green and yellow-tones.

Video Wall: The display has LED with three different colors in each pixel (RGB – red, green, blue). Theese colors can be mixed so it has the complete true colors spectrum (16.7 million colors). Such a board has a video input and it is able to show a TV picture. There are also scoreboards available with 10 bit color processing which will result in 1073 millions of colors.

We can offer the following Models:

Indoor Models							
Model	LED	Colors	Pitch mm	Resolution per sq m	Luminosity cd/m²	View angle	Watt per m²
MMS-N06R1	R	1	6,0	27.778	500	140	900
MMS-N06D1	R/G	65.536	6,0	27.778	300	140	1800
MVS-N06F1	R/G/B	1.677.216	6,0	27.778	2.000	140	1.800
MVS-N06F2	R/Yg/B	1.677.216	6,0	27.778	800	140	1.800
MVS-N08F1	R/G/B	1.677.216	8,0	15.625	1.500	140	1.400
MVS-N10F4	R/G/B	1.677.216	10,0	10.000	1.800	140	1.000
MVS-N12F1	R/G/B	68.719.000	12,0	6.944	2.500	140	2.000
Outdoor Models							
MMS-U16A1	Amber	256	16,0	3.907	4.000	120	410
MVS-U20A1	Amber	256	20,0	2.500	5.000	120	500
MMS-U22A1	Amber	256	22,0	2.066	4.000	120	450
MMS-U25A1	Amber	256	25,0	1.600	4.000	120	400
MMS-U28A1	Amber	256	28,0	1.276	4.000	120	430
MMS-U32A1	Amber	256	32,0	977	4.000	120	400
MMS-U16D1	R/G	65.536	16,0	3.907	5.000	120	800
MMS-U20D1	R/G	65.536	20,0	2.500	5.000	120	500
MMS-U22D1	R/G	65.536	22,0	2.066	4.000	120	450
MMS-U25D1	R/G	65.536	25,0	1.600	4.500	120	600
MMS-U28D1	R/G	65.536	28,0	1.276	4.000	120	470
MMS-U32D1	R/G	65.536	32,0	977	4.000	120	380
MVS-U125F	R/G/B	1.677.216	12,5	6.400	5.000	120	700
MVS-U14F1	R/G/B	68.719.000	14,0	5.102	6.000	120	1.300
MVS-U16F1	R/G/B	68.719.000	16,0	3.907	6.000	120	1.000
MVS-U20F1	R/G/B	68.719.000	20,0	2.500	5.000	120	800
MVS-U22F1	R/G/B	68.719.000	22,0	2.066	5.000	120	700
MVS-U25F1	R/G/B	68.719.000	25,0	1.600	5.000	120	500
MVS-U28F1	R/G/B	68.719.000	28,0	1.276	5.000	120	750
MVS-U32F1	R/G/B	68.719.000	32,0	977	5.000	120	600

Indoor Modules have a smaller pitch, have no sun protection against direct sun light, and are not plastic sealed to the front. Because the indoor boards are not made for operation in direct sunlight, they do not have the same luminosity as the outdoor models.

Outdoor Modules have sun blockers (to protect the board against direct sun light) and are plastic sealed to the front.

We use the following code for the LED color:
    R ...... Red
    G ...... Green
    B ...... Blue
    Yg .... Yellow-Gree

Control PC and Software:
Each LED-Board has a 100 m fibre optic cable included to the control PC. The control PC has the standard software to operate the display board. Features like schedule, operation of more display boards, etc. are included in the software.
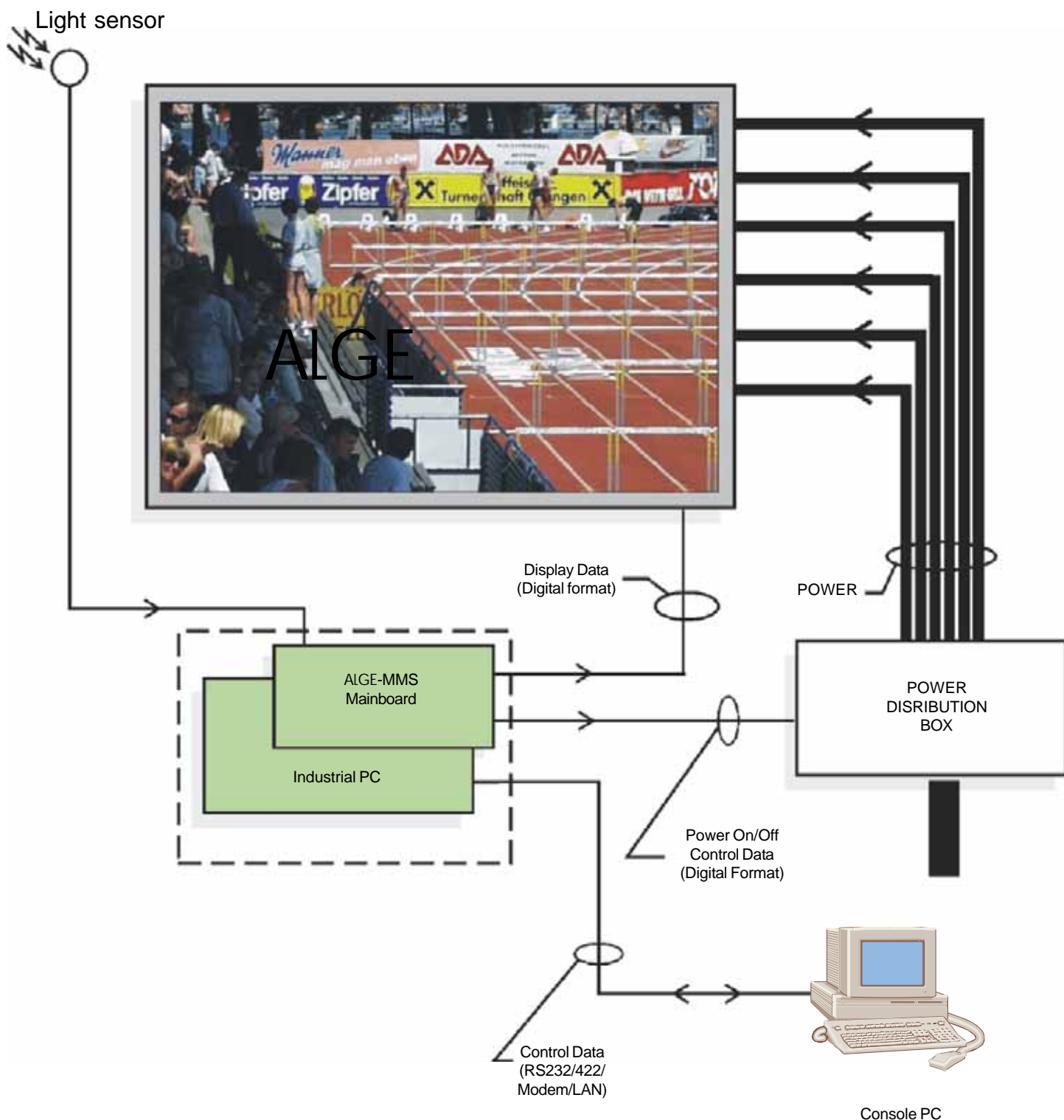

Other Specification:

Display: Text, Graphic, Animation, Video
Video input: S-Video, Composite, DVI (digital)
Video format: NTSC and PAL
Display speed: 240 fps

Casing:

We can offer three different cases:

a) **Steel Case:**
   The steel case is for a fix installation. It is the cheapest case.

b) **Aluminium Case:**
   The aluminium case has the advantage that it cannot rust. It is recommendable if the display board is sometimes moved, or if it is under heavy duty.

c) **Portable Case:**
   This case is specially made for portable boards. The setup is simple and fast. Only a power cable must be connected from the outside. The communication between the modules is wireless.

Light sensor

ALGE

Display Data
(Digital format)

POWER

ALGE-MMS
Mainboard

Industrial PC

POWER
DISRIBUTION
BOX

Power On/Off
Control Data
(Digital Format)

Control Data
(RS232/422/
Modem/LAN)

Console PC

The integrated unique intelligencemakes it easy to customise applications.
Any Display can be operated with the easy to use Advertising-Software which allows you to handle
different Schedules for different Screens from anywhere in the World.
The Optional Sport-Software makes the screen also available as a Real-Time-Result Display.