



current speed	m/min	1246	residual linear meters quality	m or min	253462
target speed		1366	shift linear meters		466521
∅ speed		1453	stop time/shift		153
Meeting at 2:00 a.m.					

Stückzahl:	3T:88	JB3:88/88/88							
Soll: 250	3T:88								
Ist: 210	3T:88								
190	180	170	160	150	140	130	120	110	100
4B2:88/88/88							3T:88		
							3T:88		
							3T:88		
							10	10	

microSYST

migra

Graphics Compatible Large Format LED Displays for Indoor and Outdoor Application



migra Product Features

Design and construction:

- Slim aluminium housing for industrial environment (powder-coated)
- Energy-saving LED lights for indoor and outdoor application
- High brightness in the colours red, green and mixed colour (yellowish)
- Cost-effective modular system for customized design solutions
- Free configuration of display data across the full display area
- Single or multi-sided view, different mounting options
- Connection to all common industrial interfaces
- Maintenance-free and durable electronics

System:

- Variable system connection
- Stand-alone system with an integrated control unit
- Connection with peripheral systems or the customer's master system e.g. by Profinet, Profibus, Ethernet, WLAN or analogue
- Active or passive connection
- Customized adaptation possible

Possible applications:

- Multifunctional application for information as required in production halls, in the logistics, in foyers or for public institutions (operating and production data, worker information, advertising and more)
- Customized design solutions



Display:

- Alphanumeric characters, graphics, variables
Examples: counter values, texts, bargraph

Attributes:

- Static letters, moving letters, scrolling and blinking

Comfort:

- Brightness adjustment automatic or dialog-controlled
- Storage of texts, graphics and variables by integrated flash memory
- Configuration by PC software (scope of supply and services)
- Optional additional signal output (e.g. for acoustical signal transmitter, flash lamp, digital output)



migra

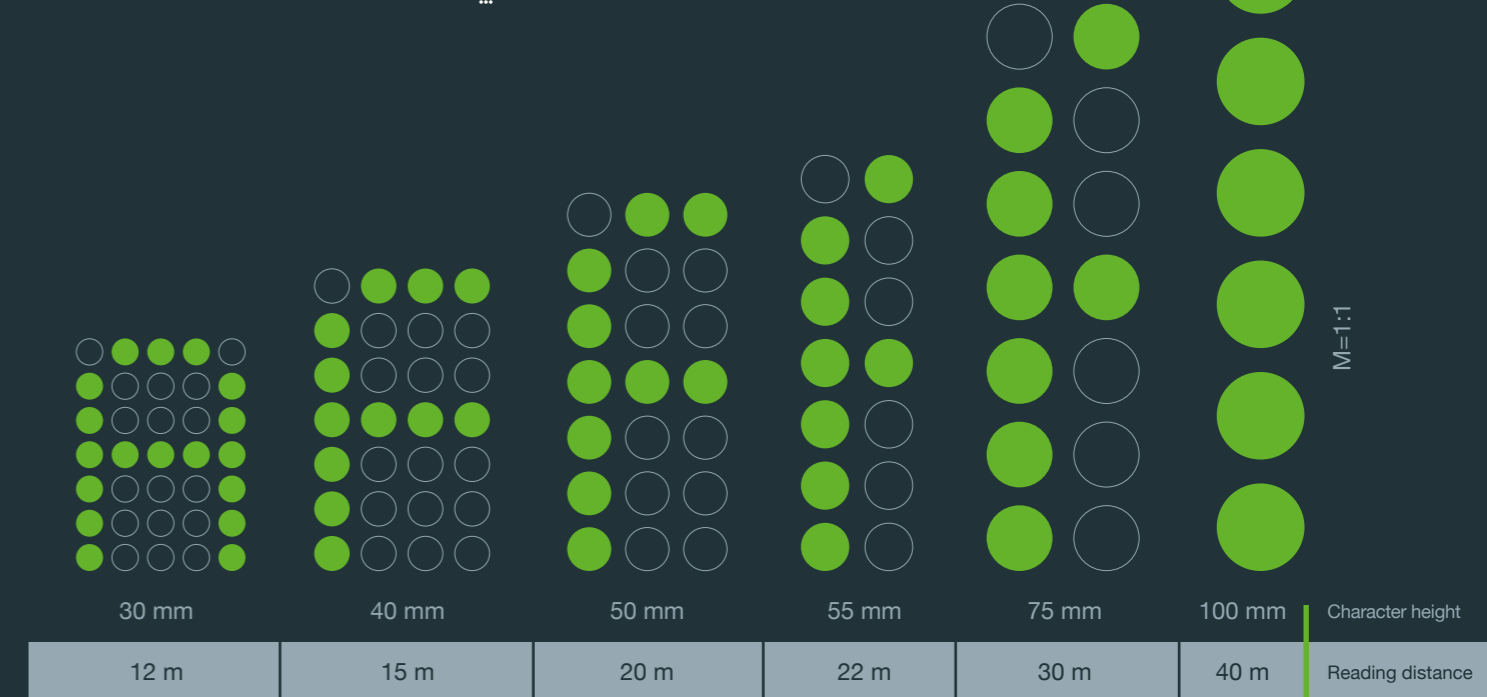
Graphics Compatible Large Format LED Displays for Indoor and Outdoor Application

Technical Data

	migra	migra Outdoor
Display	alphanumeric and/or graphics compatible LED dot matrix	
Pixel size / pixel pitch	P4: 3 mm / 4 mm P8: 5 mm / 7,62 mm	P8: 2,6 mm / 7,62 mm P12: 5,2 x 3,8 mm (oval) / 12 mm P16: 5,2 x 3,8 mm (oval) / 16 mm
Character height	P4: 30 mm, 40 mm, 55 mm, 65 mm ... P8: 50 mm, 75 mm, 100 mm, 120 mm ...	P8: 50 mm, 75 mm, 100 mm, 120 mm ... P12: 75 mm, 110 mm, 160 mm, 180 mm ... P16: 100 mm, 150 mm, 210 mm, 250 mm ...
Radiation angle	150 degs / 150 degs (horizontal / vertical)	P8: 60 degs / 60 degs (horizontal / vertical) P 12 and P16: 110 degs / 60 degs (horizontal / vertical)
Display colour	red, red/green, mixed colour (yellowish)	

Further information on www.microsyst.com

Recommended Character Height migra / alphanumeric



migan

Large Format Numeric LED Displays for Indoor and Outdoor Application



migan Product Features

Design and construction:

- Slim aluminium housing for industrial environment (powder-coated)
- Energy-saving LED lights for indoor and outdoor application
- High brightness in the colours red or green
- Flexible design of the display layout by fixed lettering, LED individual characters and LED text lines
- Designs with several lines possible, also with different interfaces
- Single or multi-sided view, different mounting options
- Connection to all common industrial interfaces
- Maintenance-free and durable electronics

System:

- Variable system connection
- Stand-alone system with an integrated control unit
- Connection with peripheral systems or the customer's master system e.g. by Profinet, Profibus, Ethernet, WLAN or analogue
- Active or passive connection
- Customized adaptation possible

Possible applications:

- Status display for actual/target value comparison and/or trend
- Machine state (defect, fault code) to support machine maintenance
- Level, output, results counting (total, average, per day) for production, order picking, energy saving, work safety and more



Display:

- Numeric characters, limited alphanumeric characters
Examples: counter values, time and date

Attributes:

- Static figures, blinking

Comfort:

- Brightness adjustment automatic or dialog-controlled
- Optional additional signal output (e.g. for acoustical signal transmitter, flash lamp, digital output)

migan

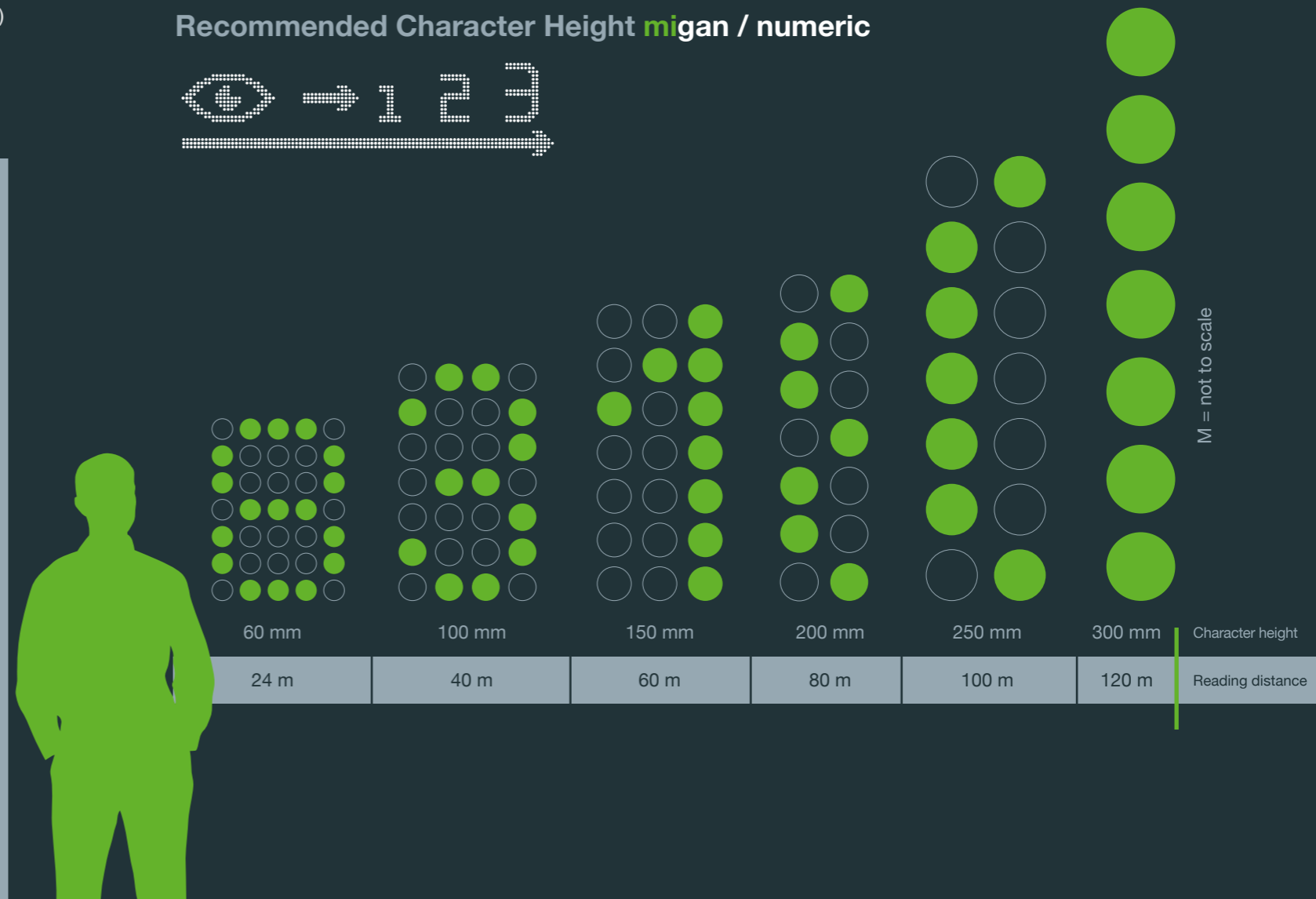
Large Format Numeric LED Displays for Indoor and Outdoor Application

Technical Data

	migan	migan Outdoor
Display	numeric LED 7-segment SMD / Single LED	
Characters	60 mm, 100 mm, 150 mm, 200 mm, 250 mm	100 mm, 200 mm, 300 mm
Radiation angle	120 degs / 120 degs (horizontal / vertical)	110 degs / 60 degs (horizontal / vertical)
Display colour	red or green	

Further information on www.microsyst.com

Recommended Character Height migan / numeric



migra

Technische Daten

Technical Data

	migra	migra Outdoor	
Displayart	LED Punktmatrix	LED dot matrix	Display type
Pixelgröße / Pixelabstand	P4: 3 mm / 4 mm P8: 5 mm / 7,62 mm	P8: 2,6 mm / 7,62 mm P12: 5,2 x 3,8 mm (oval) / 12 mm P16: 5,2 x 3,8 mm (oval) / 16 mm	Pixel size / Pixel pitch
Zeichen	P4: 30 mm, 40 mm, 55 mm, 65 mm ... P8: 50 mm, 75 mm, 100 mm, 120 mm ...	P8: 50 mm, 75 mm, 100 mm, 120 mm ... P12: 75 mm, 110 mm, 160 mm, 180 mm ... P16: 100 mm, 150 mm, 210 mm, 250 mm ...	Characters
Abstrahlwinkel	150 ° / 150 ° (h / v)	P8: 60 ° / 60 ° (h / v) P12 & P16: 110 ° / 60 ° (h / v)	Radiation angle
Leuchtfarbe	rot, rot/grün oder Mischfarbe (gelb) red, red/green or mixed colour (yellow)		Display colour
Betriebsspannung	230 V / 50 Hz, 110 V / 60 Hz, 24 VDC +- 20 %		Operating voltage
Ansicht	einseitig, doppelseitig oder mehrseitig single, double-sided or multi-sided		View
Anzeige	ASCII-Zeichensatz (20 H ... 7 FH), frei definierbare Sonderzeichen und Grafiken ASCII character set (20 H ... 7 FH), freely definable special characters and graphics		Display
FLASH-Speicher	max. 1.000 Grafiken, Texten (max. 255 Lauftexte), Variablen, Makros ; max. 100 Zeichensätze max. 1.000 graphics, texts (max. 255 moving texts), variables, macros; max. 100 character sets		Flash memory
Schutzart	IP 54, IP 65	IP 65	Protection
Betriebstemperatur	0 ... + 50 °C (optional - 25 ... + 50 °C)	- 20 ... + 50 °C (optional - 25 ... + 50 °C)	Operating temperature

migan

Technische Daten

Technical Data

	migan	migan Outdoor	
Displayart	LED 7 Segment SMD / Single LED	LED 7-segment SMD / Single LED	Display type
Ziffern	60 mm, 100 mm, 150 mm, 200 mm, 250 mm	100 mm, 200 mm, 300 mm	Characters
Abstrahlwinkel	120 ° / 120 ° (h / v)	110 ° / 60 ° (h / v)	Radiation angle
Leuchtfarbe	rot oder grün red or green		Display colour
Betriebsspannung	230 V / 50 Hz, 110 V / 60 Hz, 24 VDC +- 20 %		Operating voltage
Ansicht	einseitig, doppelseitig oder mehrseitig single, double- or multi-sided		View
Anzeige	numerische Zeichen, eingeschränkt alphanumerische Zeichen (je nach Dateneingang siehe Rückseite) numeric characters, limited alphanumeric characters (depending on the data input on the back)		Display
Schutzart	IP 54, IP 65	IP 65	Protection
Betriebstemperatur	0 ... + 50 °C (optional - 25 ... + 50 °C)	- 20 ... + 50 °C (optional - 25 ... + 50 °C)	Operating temperature

migra migran

Dateneingang

Data input

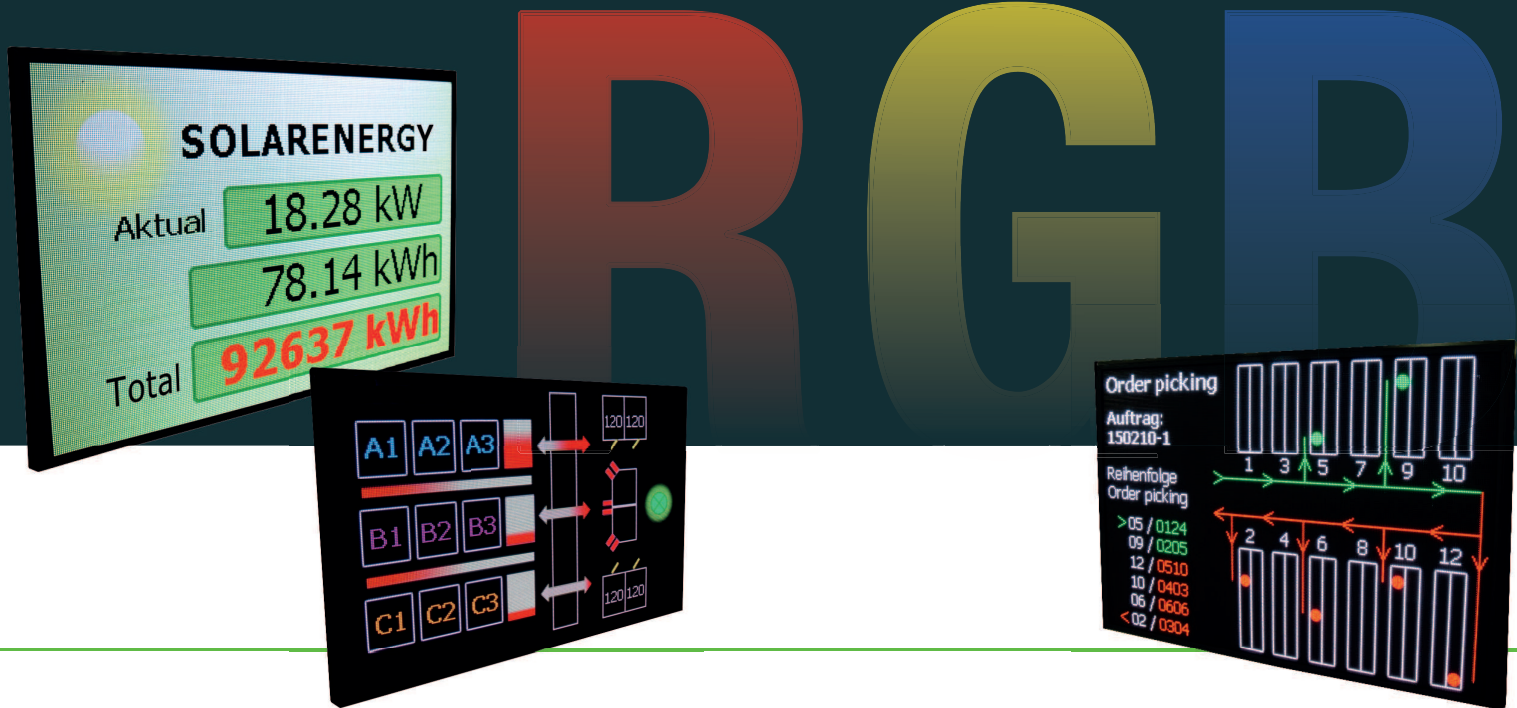
Feldbus	Stellen	variabel	Digits	Fieldbus
	Anzeige	0 ... 9 migra: A, b, c, d, E, F, G, H, I, J, L, n, o, P, q, r, S, t, u, <, . , migra: ASCII	Display	
	Interfaces	Profibus, Profinet Ethernet, Interbus Canbus, DeviceNet, Modbus ...	Interfaces	
	Download	RS232 (optional RS485, USB, Ethernet)	Download	

Seriell	Stellen	variabel	Digits	Serial	
	Anzeige	0 ... 9 migra: A, b, c, d, E, F, G, H, I, J, L, n, o, P, q, r, S, t, u, <, . , migra: ASCII	Display		
	Interfaces	RS232, RS485	Interfaces		
	Download	RS232 (optional RS485, USB, Ethernet)	Download		
	Protokoll	ASCII und integer 8/16/32 bit (mit oder ohne Antwort)	ASCII and integer 8/16/32 bit (with or without answer)		Protocoll
	Baudrate	1,2 / 2,4 / 4,8 / 9,6 / 19,2 / 38,4 / 57,6 / 115,2 kBaud	Baud rate		
	Adressen	01 ... 99	Addresses		
	Datenbreite	7 / 8 Bit	Volume of data		
	Paritäten	even, odd, no	Parities		

A/D-Wandler	Stellen	1 ... 4 1/2	Digits	A-D Converter	
	Anzeige	0 ... +- 19999 oder kundenspezifisch	0 ... +- 19999 or customer-specific		Display
	Kanäle	1 ... max. 4	Channels		
	Eingangsbereich	0 ... +10 VDC, 0/4 ... 20 mA	Input range		
	Download	RS232 (optional USB)	Download		

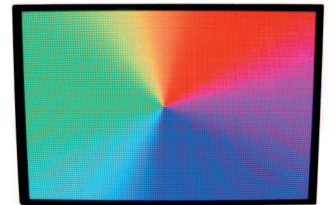
BCD	Stellen	1 ... 4 / 6 optional 8 / 12 (parallel / multiplex)	Digits	BCD
	Anzeige	0 ... 9, H, E, L, P, -, Blank	Display	
	Interfaces	BCD parallel / BCD multiplex	Interfaces	

Impulszähler	Stellen	1 ... 9	Digits	Pulse Counter	
	Anzeige	Zählimpulse, Impulse pro Zeiteinheit	counting pulses, pulses per unit of time		Display
	Eingänge	Impluseingang Zählrichtungseingang Reset- oder Preseteingang Vorwahlseingang Inkrementalgebereingang	pulse input counting direction reset or preset input pre-selection incremental transducer input		Inputs
	Download	RS232 (optional RS485, USB, Ethernet)	Download		
	Eingangsspiegel	Impulseingang	pulse input		Input level
		Ulow = 0 ... 4 VDC	Uhigh = 15 ... 30 VDC		
Inkrementalgebereingang		incremental transducer input			
	Ulow = 0 VDC	Uhigh = 5 VDC			



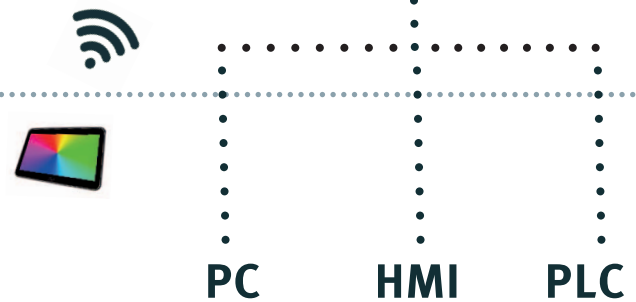
Design and construction:

- Slim and rugged aluminum housing for industrial use
- Energy-saving full-colour LED-RGB technology for indoor use
- Brilliant and high luminosity in the entire colour spectrum
- Different versions with 4 mm and 6 mm pixel pitch available
- Exact detail and true colour representation of data, graphics and video scenes
- Cost-efficient modular system for individual design
- Display data freely configurable over the entire display area
- Single or multi-sided view with various mounting options
- Maintenance-free and durable



Common system connections:

- Autonomous system with integrated control unit
Data input via Ethernet interface or other fieldbus interfaces
- Connection to peripheral PC via HDMI / DVI
RGB display acts as an additional monitor
- Connection via PLC



RGB

Applicaton fields:

- Multifunctional application for visualization of information, key numbers, graphics or video sequences (such as operating or production data, call up information, advertising and more)
- Examples: industry, logistics, infrastructural institutions (e.g. airport, parking areas), trade and more



Technical data

	RGB P4	RGB P6	
Display type	LED-RGB dot matrix		Display type
Pixel pitch	3,75 mm	6,0 mm	Pixel pitch
Module size	480 x 480 mm	576 x 576 mm	Module size
Resolution per module	128 x 128 px	96 x 96 px	Resolution per module
Display colour	RGB full colour (red, green, blue)		Display colour
Light intensity	1500 cd/m ²	1800 cd/m ²	Light intensity
View	single or multi-sided		View
Display	texts, special characters, graphics, video sequences		Display
Housing	industrial version, powder coated aluminium		Housing
Housing colour	standard: RAL 7016 (anthracite) optional other colours		Housing colour
Mounting	articulated arm, hanging with chain, ceiling mounting		Mounting

From the planning and production up to the installation and start-up.

We produce your display system.

Product Data Sheet

migra TFT – IP20

Diagonal	32" / 80cm	42" / 106 cm	47" / 119 cm	55" / 139 cm
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Display				
Active screen dimensions (h x v)	693 x 393 mm	930 x 523 mm	1039 x 584 mm	1210 x 680 mm
Resolution (pixel)	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
Viewing angle (typical)	178°	178°	178°	178°
Contrast ratio (typical)	3000:1	1300:1	1300:1	1300:1
Brightness (typical)	350 cd/m ²	700 cd/m ²	700 cd/m ²	700 cd/m ²
Colour performance	16.7 mio colours simultaneously (full colour)			
Response time (typical, grey to grey)	8ms	12ms	12ms	12ms
Backlight system	E-LED (Edge-LED)			

Environmental conditions	
IP protection	IP20 optional with safety glass *
Temperature (operating)	3°C bis + 35°C
Temperature (non-operating)	-20°C bis +60°C
Humidity	10% to 90% (non-condensing)

Power				
Power consumption (IPC version)	49W typ. / 57W max.	95W typ. / 115W max.	100W typ. / 123W max.	113W typ. / 140W max.
Power supply	90V to 264V, 47Hz to 63Hz	90V to 264V, 47Hz to 63Hz	90V to 264V, 47Hz to 63Hz	90V to 264V, 47Hz to 63Hz

Dimensions & Weight				
H x B x D (+/-2mm)	433 x 731 x 64 mm bzw. *95 mm	556 x 963 x 66 mm bzw. *95 mm	617 x 1073 x 65 mm bzw. *95 mm	714 x 1244 x 67 mm bzw. *95 mm
Bezel width	16 mm / top 27 mm	16 mm	16 mm	16 mm
VESA fixings	600 x 200 mm(M8)	600 x 400 mm(M8)	600 x 400 mm(M8)	600 x 400 mm(M8)
Approx. Weight (+/-10%)	11 kg	14 kg	17 kg	24 kg


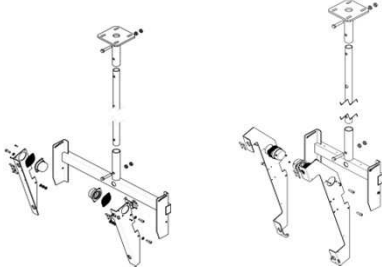
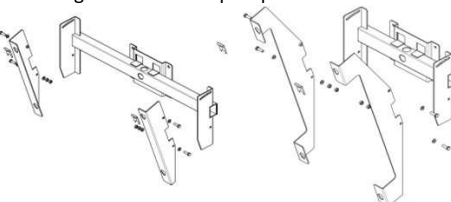
Approvals	
EMI/EMC	EN55022 class A, EN55024, EN61000-3-2/-3
Safety	EN60950, CE

Colour	
Standard colour	RAL 9005 (black), powder coated
Standard colour cBox	RAL 9005 (black), powder coated
Customized colour	On request



Options

Wall mounting kits, Mounting kit with tilt adapter plate, Ceiling mounting kits

Wall mounting kits	Ceiling mounting kits
<p>Standard wall mounting bars (pair of bars, non-tilting)</p> 	<p>Mounting kit with tilt adapter plate and ceiling adapter plate, without tube</p> 
<p>Mounting kit with tilt adapter plate</p> 	

Display with IPC (integrated Industrial PC)

Display supplied with integrated industrial PC, operating system and monitoring software.

The consequent use of components from the Intel embedded roadmap secures lowest power consumption as well as optimum performance and reliability. It is perfectly suited to run all kinds of MS Windows based Digital Signage solutions.

IPC	
Processor	Intel® Atom™ E3845 quad core, 1,91 GHz
HDD	min. 32GB SSD
RAM	2GB (2x 1GB Dual Channel)
Graphics	Intel® HD Graphics, Full hardware acceleration for MPEG2, H.264, DirectX11, OCL 1.2, OGL 3.0, WMV9 and VC1
Network adapter Ethernet	1 x 1000
Sound	Intel® High Definition Audio (Intel® HD Audio)
RS232	1x
USB 2.0	2x
SD card slot	1x
DVI-D	1x
DisplayPort 1.2	1x
Audio Lineout	1x
Hardware watchdog	●
Software (installed on SSD) Windows Embedded® WES7P	●

Controls	
User controls	Indoor series: Reset button / Outdoor series: Internal mains switch
Control of display functions	Via IR or USB keyboard or via network

Accessories
 Operating manual (E/D), AC power cord (not for Outdoor Series), IR keyboard (option), IR remote control (option)

Connectors (internal for Outdoor Displays series)



Product Data Sheet

migra TFT – IP54

Diagonal	42" / 106 cm	46" / 117 cm	55" / 139 cm
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Display			
Active screen dimensions (h x v)	930 x 523 mm	1018 x 573 mm	1210 x 680 mm
Resolution (pixel)	1920 x 1080	1920 x 1080	1920 x 1080
Viewing angle (typical)	178°	178°	178°
Contrast ratio (typical)	4000:1	4000:1	1300:1
Brightness (typical)	500 cd/m ² (panel typ.)	500 cd/m ² (panel typ.)	700 cd/m ² (panel typ.)
Colour performance	16.7 mio colours simultaneously (full colour)		
Backlight system	E-LED (Edge-LED)		
Safety / contrast enhancement panel	anti-glare, 90% light transmission (minimum)		

Environmental conditions	
IP protection display unit	IP 54
IP protection cBox (control box)	IP 20 (optional dust-proof)
Temperature (operating)	0° C bis + 40°C
Temperature (non-operating)	-20° C bis +60°C
Humidity	10% to 90% (non-condensing)

Power			
Power consumption (IPC version)	65W typ. / 110W max.	70W typ. / 115W max.	85W typ. / 140W max.
Power consumption (monitor version)	60W typ. / 105W max.	65W typ. / 110W max.	80W typ. / 135W max.
Power supply	90V to 264V, 47Hz to 63Hz		

Dimensions & Weight			
H x B x D	603 x 1010 x 48 (132/104) mm	652 x 1097 x 48 (132/104) mm	760 x 1289 x 48 (132/104) mm
Weight (+/-10%) (Display with IP20 cBox)	29,5 kg	34,5 kg	44 kg
Weight (+/-10%) (Display with dust-proof cBox)	31,5 kg	36,5 kg	46 kg

Approvals

EMI/EMC	EN55022 class A, EN55024, EN61000-3-2/-3
Safety	EN60950, CE

Colour

Standard colour cabinet	RAL 9005 (black), powder coated
Standard colour front panel	RAL 9006 (white aluminium), powder coated
Standard colour cBox	RAL 9005 (black), powder coated
Customized colour	On request


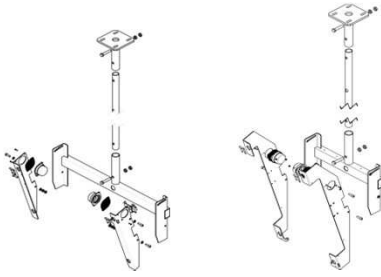
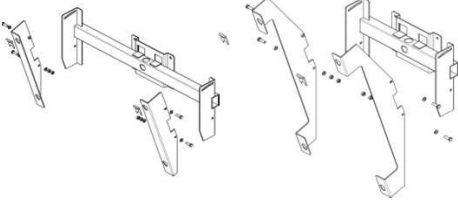


Display unit with IP20 cBox

Display unit without cBox

Options

Wall mounting kits, Mounting kit with tilt adapter plate, Ceiling mounting kits

Wall mounting kits	Ceiling mounting kits
Standard wall mounting bars (pair of bars, non-tilting) 	Mounting kit with tilt adapter plate and ceiling adapter plate, without tube 
Mounting kit with tilt adapter plate 	

Display with IPC (integrated Industrial PC)

Display supplied with integrated industrial PC, operating system and monitoring software.

The consequent use of components from the Intel embedded roadmap secures lowest power consumption as well as optimum performance and reliability. It is perfectly suited to run all kinds of MS Windows based Digital Signage solutions.

IPC	
Processor	Intel® Atom™ E3845 quad core, 1,91 GHz
HDD	min. 32GB SSD
RAM	2GB (2x 1GB Dual Channel)
Graphics	Intel® HD Graphics, Full hardware acceleration for MPEG2, H.264, DirectX11, OCL 1.2, OGL 3.0, WMV9 and VC1
Network adapter Ethernet	1 x 1000
Sound	Intel® High Definition Audio (Intel® HD Audio)
RS232	1x
USB 2.0	2x (with dust-proof box only 1x)
SD card slot	1x (not with dust-proof box)
DVI-D	1x (not with dust-proof box)
DisplayPort 1.2	1x (not with dust-proof box)
HDMI	1x (only with dust-proof box)
Audio Lineout	1x
Hardware watchdog	•
Software (installed on SSD)	•
Windows Embedded® WES7P	

Controls	
User controls	Indoor series: Reset button / Outdoor series: Internal mains switch
Control of display functions	Via IR or USB keyboard or via network

Accessories

Operating manual (E/D), AC power cord (not for Outdoor Series), IR keyboard (option), IR remote control (option)

IPC IP20



IPC dust-proof



Product Data Sheet

migra TFT 70" – IP54

Diagonal 70" / 177 cm

Display

Active screen dimensions (h x v)	1539 x 866 mm
Resolution (pixel)	1920 x 1080
Viewing angle (typical)	176°
Contrast ratio (typical)	5000:1
Brightness (typical)	700 cd/m ² (panel typ.)
Colour performance	16.7 mio colours simultaneously (full colour)
Backlight system	E-LED (Edge-LED)
Safety / contrast enhancement panel	anti-glare, 90% light transmission (minimum)

Environmental conditions

IP protection display unit	IP 54
IP protection cBox (control box)	dust-proof
Temperature (operating)	0° C bis + 40°C
Temperature (non-operating)	-20° C bis +60°C
Humidity	10% to 90% (non-condensing)

Power

Power consumption (IPC version)	150W typ. / 210W max.
Power consumption (monitor version)	145W typ. / 205W max.
Power supply	90V to 264V, 47Hz to 63Hz

Dimensions & Weight

H x B x D	ca. 974 x 1647 x 71 (155) mm
Weight (+/-10%)	ca. 90 kg

Colour	
Standard colour cabinet	RAL 9005 (black), powder coated
Standard colour front panel	RAL 9006 (white aluminium), powder coated
Standard colour cBox	RAL 9005 (black), powder coated
Customized colour	On request


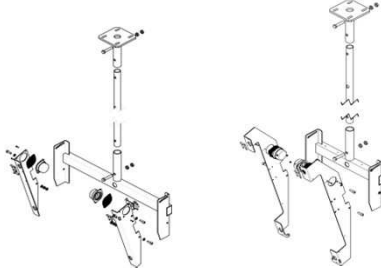
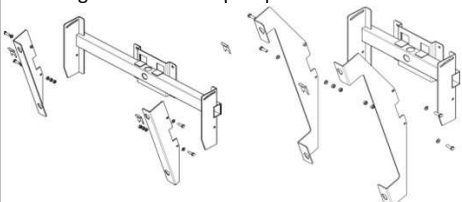


Display unit with IP20 cBox

Display unit without cBox

Options

Wall mounting kits, Mounting kit with tilt adapter plate, Ceiling mounting kits

Wall mounting kits	Ceiling mounting kits
Standard wall mounting bars (pair of bars, non-tilting) 	Mounting kit with tilt adapter plate and ceiling adapter plate, without tube 
Mounting kit with tilt adapter plate 	

Display with IPC (integrated Industrial PC)

Display supplied with integrated industrial PC, operating system and monitoring software.

The consequent use of components from the Intel embedded roadmap secures lowest power consumption as well as optimum performance and reliability. It is perfectly suited to run all kinds of MS Windows based Digital Signage solutions.

IPC	
Processor	Intel® Atom™ E3845 quad core, 1,91 GHz
HDD	min. 32GB SSD
RAM	2GB (2x 1GB Dual Channel)
Graphics	Intel® HD Graphics, Full hardware acceleration for MPEG2, H.264, DirectX11, OCL 1.2, OGL 3.0, WMV9 and VC1
Network adapter Ethernet	1 x 1000
Sound	Intel® High Definition Audio (Intel® HD Audio)
RS232	1x
USB 2.0	2x
HDMI	1x
Audio Lineout	1x
Hardware watchdog	●
Software (installed on SSD)	●
Windows Embedded® WES7P	

Controls	
User controls	Mains switch
Control of display functions	Via IR or USB keyboard or via network

Accessories
 Operating manual (E/D), AC power cord (not for Outdoor Series), IR keyboard (option), IR remote control (option)

