# MAHRLIGHTS

**A PASSION FOR DETAIL**

1|2019

**Measuring results ten times faster**

**Micromar**

## FAST AND RELIABLE

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## SMAHRT INNOVATIONS AT A SPECIAL PRICE

- **SMAHRT TOOLS.** Large operating range thanks to Integrated Wireless
- **Micromar.** Shorter measuring times with QUICK DRIVE quick adjustment
- **MarSurf.** The simple, modern operating concept

**This is what we mean by EXACTLY.**

- 0 +

**Mahr**

E X A C T L Y

# MICROMAR. THE MICROMAR 40 EWRI-L DIGITAL MICROMETER

Waterproof micrometers with quick adjustment and integrated wireless system

## Shorter measuring times with QUICK DRIVE quick adjustment

The spindle covers a measuring path of 5 mm in just one revolution. With a spindle feed rate 10 times faster than that of conventional micrometers, measuring times are reduced considerably.

The non-rotating spindle is in tactile contact, avoiding scratch marks on sensitive and precision-machined surfaces.
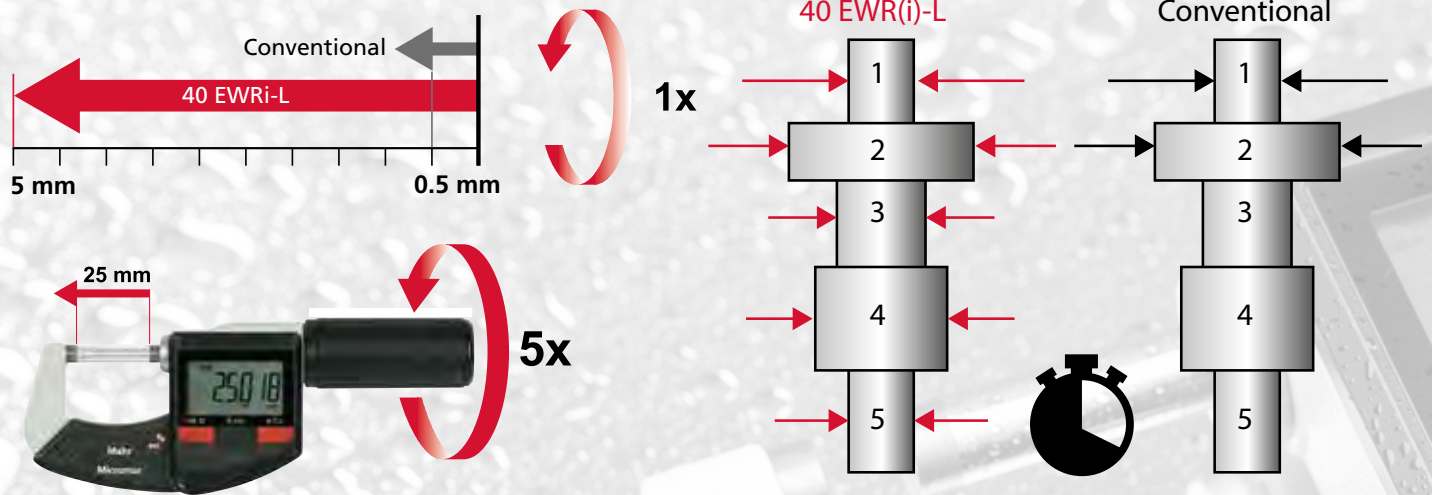


## Excellent mobility thanks to Integrated Wireless

**MarConnect** integrated wireless

Integrated Wireless gives you much more mobility. There is no cable to get in the way, either at the measuring station or when measuring in or on the machine or on large workpieces.



## Lock function for added security

The Micromar 40 EWRi-L digital micrometer comes with a key lock function, which saves the zero position and prevents operating errors.

**Practical tip:** Using free MarCom software, values (origin and tolerance values) can be transferred and functions individually blocked via the wireless interface and the new bidirectional interface (USB).



Scan the QR code to watch a film showing simple and practical applications

# ERGONOMIC DESIGN - COMPACT CLASS

The most compact micrometer with quick adjustment

- Superb ergonomics and balance for one-handed operation
- Biggest display in its class!
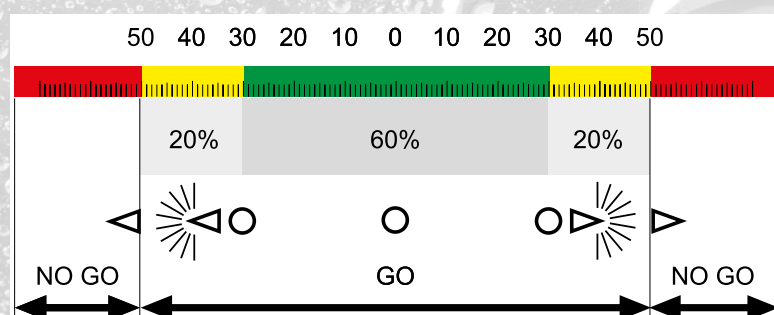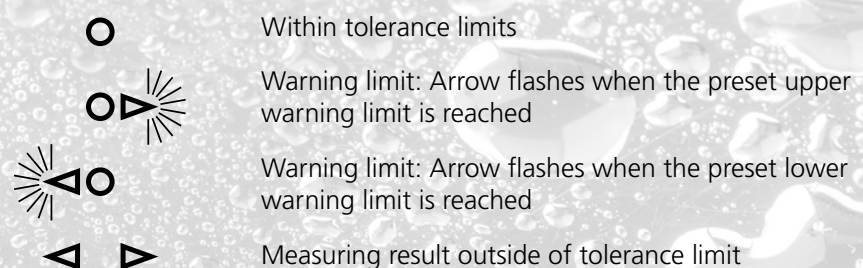- Easy to read, even in difficult light conditions

Competitor A

Competitor B

## No usage restrictions

**IP65** Outstanding protection against dust and water for use in the workshop and in manufacturing

| Letter code | **IP** | International Protection |
|---|---|---|
| First digit | **6** | Dust-tight |
| Second digit | **5** | Protection against ingress of water jets |

## Tolerance function with warning limits for prompt detection of manufacturing deviations

| | |
|---|---|
| ○ | Within tolerance limits |
| ○▷ | Warning limit: Arrow flashes when the preset upper warning limit is reached |
| ◁○ | Warning limit: Arrow flashes when the preset lower warning limit is reached |
| ◁ ▷ | Measuring result outside of tolerance limit |

50 40 30 20 10 0 10 20 30 40 50

20%     60%     20%

◁  ◁○  ○  ○▷  ▷

NO GO     GO     NO GO

# MICROMAR. WITH QUICK-DRIVE QUICK ADJUSTMENT

The **Micromar 40 EWR(i)-L** digital micrometer with QUICK DRIVE prevents damage to workpieces. The non-rotating spindle is in tactile contact, preventing scratch marks on sensitive and precision-machined surfaces.

## Micromar 40 EWRi-L

Digital micrometers with Integrated Wireless and QUICK DRIVE quick adjustment



**Offer price**
**£ 266.00**
Order no. 4157120

i-stick wireless receiver, see page 8

**MarConnect** integrated wireless | **IP65** | **ABS** | 🔒 | **TOL** | **REFERENCE**

**Functions:** RESET (set display to zero), ABS (set display to zero without the reference to the ORIGIN being lost), mm/inch, ORIGIN (enter a numerical value), LOCK function (key lock), TOL (input of tolerance and warning limits), DATA (data transmission), HOLD (storage of measured values)
- Spindle and anvil are carbide tipped
- QUICK DRIVE quick adjustment (5 mm per revolution)
- Non-rotating spindle
- Ratchet operation
- **Digit height:** 10 mm
- **Data interface:** Integrated Wireless
- **Software:** MarCom Professional is free to download: www.mahr.com/marcom

## Micromar 40 EWR-L

Digital micrometers with QUICK DRIVE quick adjustment



**Offer price**
**£ 258.00**
Order no. 4157020

**USB** | **Digimatic** | **IP65** | **ABS** | 🔒 | **TOL** | **REFERENCE**

**Features**
same as Micromar 40 EWRi-L, but with
- **Data interface:** USB, Digimatic
- **Software:** MarCom Professional is free to download: www.mahr.com/marcom

| Product | Measuring range | | Resolution | Spindle thread pitch | Data interface | Order no. | List price | Offer price |
|---------|------|--------|----------|------|----------------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | mm | | | £ | £ |
| 40 EWRi-L | 0 – 25 | (0 – 1") | 0.001 / .00005 | 5 | Integrated Wireless | 4157120 | ~~319.00~~ | 266.00 |
| 40 EWRi-L | 25 – 50 | (1 – 2") | 0.001 / .00005 | 5 | | 4157121 | ~~363.00~~ | 299.00 |
| 40 EWR-L | 0 – 25 | (0 – 1") | 0.001 / .00005 | 5 | for USB or Digimatic | 4157020 | ~~310.00~~ | 258.00 |
| 40 EWR-L | 25 – 50 | (1 – 2") | 0.001 / .00005 | 5 | | 4157021 | ~~354.00~~ | 295.00 |
| Accessories for 40 EWR-L | | | | | | | | |
| DK-U1 | Bidirectional USB data cable with power supply | | | | | 4102603 | ~~87.00~~ | 79.00 |
| DK-D1 | Digimatic data cable | | | | | 4102606 | ~~77.00~~ | 69.00 |

# MICROMAR. THE WIRELESS MICROMETER

The **Micromar 40 EWRi** digital micrometer with Integrated Wireless gives you much more mobility. Waterproof precision for reliable measuring results under the harshest factory conditions.

## Micromar 40 EWRi

Digital micrometers with Integrated Wireless

**MarConnect** integrated wireless | **IP65** | **ABS** | **TOL** | **REFERENCE**

**Functions:** RESET (set display to zero), ABS (set display to zero without the reference to the ORIGIN being lost), mm/inch, ORIGIN (enter a numerical value), LOCK function (key lock), TOL (input of tolerance and warning limits), DATA (data transmission), HOLD (storage of measured values)
- Spindle and anvil are carbide tipped
- Rapid drive
- Ratchet operation
- **Digit height:** 10 mm
- **Data interface:** Integrated Wireless
- **Software:** MarCom Professional is free to download: www.mahr.com/marcom

**Offer price**
**£ 224.00**
Order no. 4157100

i-stick wireless receiver, see page 8

**Offer price**
**£ 1,193.00**
Order no. 4157115

i-stick wireless receiver, see page 8

| Product | Measuring range | | Resolution | Spindle thread pitch | Data interface | Order no. | List price | Offer price |
|---|---|---|---|---|---|---|---|---|
| | mm | (inch) | mm/inch | mm | | | £ | £ |
| 40 EWRi | 0 – 25 | (0 – 1") | 0.001 / .00005 | 0.5 | Integrated Wireless | 4157100 | ~~257.00~~ | 224.00 |
| 40 EWRi | 25 – 50 | (1 – 2") | 0.001 / .00005 | 0.5 | | 4157101 | ~~302.00~~ | 265.00 |
| 40 EWRi Set | 0 – 100 | (0 – 4") | 0.001 / .00005 | 0.5 | Integrated Wireless | 4157115 | ~~1,346.00~~ | 1,193.00 |

# MARCAL. THE WIRELESS CALIPER

The MarConnect system ensures that you always have the optimal connection to all evaluation systems – either via integrated wireless or data cable. Mahr's Reference System makes the caliper easier to handle. Thanks to the high degree of protection, IP67, the MarCal 16 EWRi is perfect for use in the harshest conditions.

## MarCal 16 EWRi STARTER PACK

Digital calipers with Integrated Wireless

**REFERENCE** | **IP67** | **MarConnect** integrated wireless

+

**Starter Pack**
**£ 199.00**
Order no. 9105795

**Functions:** ON/OFF, AUTO-ON/OFF, HOLD (storage of measured values), RESET (set display to zero), PRESET (enter a numerical value), mm/inch, Reference System, LOCK function (key lock), DATA (data transmission)
- Integrated wireless transmitter
- Excellent resistance to dust, coolants and lubricants: Protection rating IP67
- Power supply: Battery life approx. 3 years (approx. 0.5 years in wireless mode)
- Lapped guideways
- Slide and beam made of hardened stainless steel
- Software: MarCom Professional is free to download: www.mahr.com/marcom
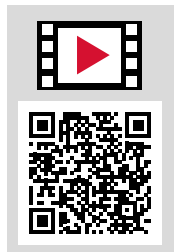
| Product | Measuring range | | Resolution | Depth rod | | Details | Order no. | List price | Offer price |
|---------|------|--------|-----------|:---:|:---:|---------|-----------|-----------|-----------|
| | mm | (inch) | mm/inch | 🔲 | 🔲 | | | £ | £ |
| 16 EWRi | 0 – 150 | (6") | 0.01/.0005 | • | | **Starter Pack:** incl. i-stick wireless receiver and MarCom Professional 5.2 | **9105795** | ~~289.00~~ | **199.00** |
| 16 EWRi | 0 – 150 | (6") | 0.01/.0005 | | • | | **9105796** | ~~289.00~~ | **199.00** |

## MarCal 16 EWRi

Digital caliper with Integrated Wireless

**Offer price**
**£ 172.00**
Order no. 4103400

16 EWRi excluding i-stick wireless receiver.
Features as above.

| Product | Measuring range | | Resolution | Depth rod | | Details | Order no. | List price | Offer price |
|---------|------|--------|-----------|:---:|:---:|---------|-----------|-----------|-----------|
| | mm | (inch) | mm/inch | 🔲 | 🔲 | | | £ | £ |
| 16 EWRi | 0 – 150 | (6") | 0.01/.0005 | • | | | **4103400** | ~~202.00~~ | **172.00** |
| 16 EWRi | 0 – 150 | (6") | 0.01/.0005 | | • | | **4103402** | ~~202.00~~ | **172.00** |
| 16 EWRi-H | 0 – 150 | (6") | 0.01/.0005 | • | | Carbide-tipped measuring surfaces | **4103373** | ~~266.00~~ | **222.00** |

All illustrations and technical data are without guarantee. All prices shown are recommended retail prices. The net prices are shown in £, they exclude sales tax and are valid from April 8th, 2019 until May 31st, 2019

# MARCATOR. THE WIRELESS DIAL INDICATOR

Our **high-precision digital dial indicators featuring the MarConnect system** ensure that you always **have the optimal connection to all evaluation systems** – either via integrated wireless or data cable.

## MarCator 1086 Ri Digital Dial Indicators

Resolution from 0.5 µm and tolerance display

**Offer price**
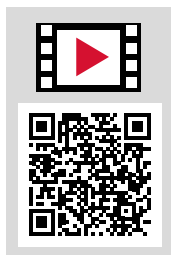**£ 229.00**
Order no. 4337624
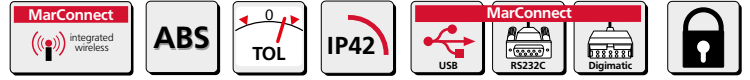
**Functions:** ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), ABS (display can be set to zero, without losing the reference to the preset value), DATA (data transmission via connection cable), factor (adjustable), LOCK (lock individual keys)
- High contrast LCD
- Operating and display unit (bezel) can be rotated 280°
- Lifter protection cap on end of measuring pin
- Power supply: Battery life approx. 3 years
- **Software:** MarCom Professional is free to download: www.mahr.com/marcom

i-stick wireless receiver, see page 8

## MarCator 1087 Ri Digital Dial Indicators

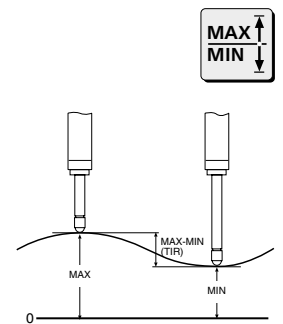Resolution from 0.5 µm and dynamic max/min functions

**Additional functions of MarCator 1087 Ri**

- MAX/MIN memory for reversing point search,
- TIR (MAX-MIN) for radial runout and flatness test

**Offer price**
**£ 365.00**
Order no. 4337663

| Product | Measuring range | | Resolution, switchable | Data interface | Order no. | List price | Offer price |
|---------|------|--------|---------|---------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | | | £ | £ |
| 1086 Ri | 12.5 | (.5") | 0.0005 / 0.001 / 0.002 / 0.005 / 0.01 mm (.00002" / .00005" / .0001" / .0002" / .0005") | Integrated Wireless | **4337624** | ~~371.00~~ | **299.00** |
| 1086 Ri | 25 | (1") | | | **4337625** | ~~419.00~~ | **349.00** |
| 1087 Ri | 12.5 | (.5") | | Integrated Wireless | **4337663** | ~~435.00~~ | **365.00** |
| 1087 Ri | 25 | (1") | | | **4337665** | ~~491.00~~ | **399.00** |

i-stick wireless receiver, see page 8

# MARCONNECT. WIRELESS TRANSMISSION

In modern production it is imperative that measuring results are recorded and evaluated accurately. These results are not only valuable benchmarks for assessing products, but they can also be used to evaluate and optimize production processes within Six Sigma and SPC. Mahr sets high standards with its **up-to-date wireless data transmission solutions**. **Simple, reliable and professional.**

## MarConnect i-stick and e-stick Wireless Receivers

Wireless receivers for measuring instruments with Integrated Wireless and handheld measuring instruments with data interface

i-stick

**Offer price**
**£ 69.00**
Order no. 4102220

e-stick

**Offer price**
**£ 79.00**
Order no. 4102230

| Product | | i-stick | e-stick |
|---|---|---|---|
| **Radio frequency** | MHz | 2400 | |
| **Number of channels** | | 3 | – |
| **Wireless distance** | | up to 6 m | |
| **Number of connectable wireless receivers to PC** | | 4 | 1 |
| **Number of connectable measuring instruments with Integrated Wireless** | | 8 per stick | – |
| **Number of connectable transmission modules per wireless receiver** | | – | 8 |
| **For measuring instruments** | | with Integrated Wireless | Transmission modules 16 EWe, 2000 e, RS232 e |
| **Order no.** | | **4102220** | **4102230** |
| **List price** | £ | ~~86.00~~ | ~~86.00~~ |
| **Offer price** | £ | **69.00** | **79.00** |

## MarConnect 16 EWe Transmission Module

The external transmission module for all Mahr handheld measuring instruments with wired data interface

**Offer price**
**£ 249.00**
Order no. 4102231

| Product | | 16 EWe |
|---|---|---|
| **Transmission module for e-stick (suitable for measuring instruments):** | | MarCal 16 ER, 16 EWR, 30 EWR, Digimar 814 SR Micromar 44 EWR, 46 EWR MarCator 1075 R, 1086 R, 1087 R, 1087 BR MarSurf PS10 |
| **Order no.** | | **4102231** |
| **List price** | £ | ~~288.00~~ |
| **Offer price** | £ | **249.00** |

# THE CLASSICS

High-quality calipers and micrometers are some of the most fundamental measuring instruments in production and quality control because they are both versatile and easy to use. Measuring instruments with line scales stand out because of their unchangeable measuring system and ease of use. These analog measuring instruments can be used anytime and anywhere.

## MarCal 16 FN Caliper with Scale Reading

The classic precision vernier caliper

- All reading parts have a glare free, satin chrome finish
- Slide and beam made of hardened stainless steel
- Measuring surfaces are made of hardened stainless steel
- Measuring blades for inside measurement
- Step measuring function
- Raised guideways to protect the scale

**Offer price**
**£ 19.00**
Order no. 4100400

| Product | Measuring range | Vernier value | Vernier value | Error limit | Order no. | List price | Offer price |
|---------|-----------------|---------------|---------------|-------------|-----------|------------|-------------|
| | mm | mm | inch | mm | | £ | £ |
| 16 FN | 0 – 150 | 0.05 | 1/28 | 0.05 | 4100400 | ~~27.00~~ | 19.00 |
| 16 FN | 0 – 200 | 0.05 | 1/28 | 0.05 | 4100401 | ~~72.00~~ | 49.00 |
| 16 FN | 0 – 300 | 0.05 | 1/28 | 0.05 | 4100402 | ~~176.00~~ | 126.00 |

## Micromar 40 A Micrometer

The classic micrometer

- Operating and display units have a glare free, satin chrome finish
- Spindle and anvil are made of hardened steel, carbide tipped
- Heat insulators
- Rapid drive with integrated clutch
- Locking device

**Offer price**
**£ 37.00**
Order no. 4134000

**Micromar 40 SA set**
Features as Micromar 40 A

| Product | Measuring range | Reading | Spindle thread pitch | Order no. | List price | Offer price |
|---------|-----------------|---------|----------------------|-----------|------------|-------------|
| | mm | mm | mm | | £ | £ |
| 40 A | 0 – 25 | 0.01 | 0.5 | 4134000 | ~~50.00~~ | 37.00 |
| 40 A | 5 – 50 | 0.01 | 0.5 | 4134001 | ~~76.00~~ | 59.00 |
| 40 SA | 0 – 100 | 0.01 | 0.5 | 4134050 | ~~283.00~~ | 224.00 |

# MARCAL. THE REFERENCE CALIPER

Mahr's **Reference System** has made the caliper much **easier and more convenient** to handle as the zero position only has to be set once and the setting is stored for all further measurements. Due to the high **degree of protection, IP67** , the MarCal 16 EWR is protected against dust, coolants and lubricants and is therefore **ideal for use in the harshest conditions.**

## MarCal 16 ER Digital Caliper

With large digital display

**REFERENCE**

**Functions:** ON/OFF, AUTO-ON/OFF, RESET (set display to zero), mm/inch, Reference System, LOCK function (key lock)
- Power supply: Battery life approx. 3 years
- Lapped guideways
- Slide and beam made of hardened stainless steel

**Offer price**
**£ 74.00**
Order no. 4103010

| Product | Measuring range | | Resolution | Depth rod | | Digit height | Order no. | List price | Offer price |
|---------|-----|--------|------------|---|---|--------------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | | | mm | | £ | £ |
| 16 ER | 0 – 150 | (6") | 0.01/.0005 | • | | 11 | **4103010** | ~~101.00~~ | **74.00** |
| 16 ER | 0 – 150 | (6") | 0.01/.0005 | | • | 11 | **4103012** | ~~101.00~~ | **74.00** |
| 16 ER | 0 – 200 | (8") | 0.01/.0005 | | • | 11 | **4103205** | ~~158.00~~ | **119.00** |
| 16 ER | 0 – 300 | (12") | 0.01/.0005 | | | 11 | **4103207** | ~~198.00~~ | **159.00** |

## MarCal 16 EWR Digital Caliper

Excellent protection against dust, coolants and lubricants

**REFERENCE**  **IP67**

16 EWR

**Functions:** ON/OFF, AUTO-ON/OFF, RESET (set display to zero), mm/inch, Reference System, LOCK function (key lock)
- Excellent resistance to dust, coolants and lubricants: Protection rating IP67
- Power supply: Battery life approx. 3 years
- Lapped guideways
- Slide and beam made of hardened stainless steel

**Offer price from**
**£ 109.00**

16 EWR-H, with carbide-tipped measuring surfaces and data output

| Product | Measuring range | | Resolution | Depth rod | | Digit height | Order no. | List price | Offer price |
|---------|-----|--------|------------|---|---|--------------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | | | mm | | £ | £ |
| 16 EWR | 0 – 150 | (6") | 0.01/.0005 | • | | 11 | **4103300** | ~~150.00~~ | **109.00** |
| 16 EWR | 0 – 150 | (6") | 0.01/.0005 | | • | 11 | **4103302** | ~~150.00~~ | **109.00** |
| 16 EWR | 0 – 200 | (8") | 0.01/.0005 | | • | 11 | **4103304** | ~~209.00~~ | **159.00** |
| 16 EWR | 0 – 300 | (12") | 0.01/.0005 | | | 11 | **4103306** | ~~281.00~~ | **214.00** |
| 16 EWR-H | 0 – 150 | (6") | 0.01/.0005 | • | | 8.5 | **4103073** | ~~225.00~~ | **188.00** |

# MarCal 30 EWR Digital Depth Gage

For measuring deep down

**Functions:** ON/OFF, AUTO-ON/OFF, RESET (set display to zero), PRESET (enter a numerical value), mm/inch, Reference System, LOCK function (key lock), DATA (in conjunction with data cable)

- Excellent resistance to dust, coolants and lubricants:
  **Protection rating IP67**
- Power supply: Battery life approx. 3 years
- Lapped guideways
- Slide and beam made of hardened stainless steel

**Offer price**
**£ 249.00**
Order no. 4126700

# MarCal 30 EWR-D Digital Depth Gage

For your special applications

**Features**
same as MarCal 30 EWR

Measuring groove widths and distances between grooves

**Offer price**
**£ 376.00**
Order no. 4126523
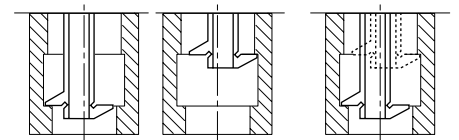
| Product | Measuring range | | Resolution | Data output | Order no. | List price | Offer price |
|---|---|---|---|---|---|---|---|
| | mm | (inch) | mm/inch | | | £ | £ |
| 30 EWR | 0 – 150 | (6") | 0.01/.0005 | • | 4126700 | 319.00 | 249.00 |
| 30 EWR | 0 – 200 | (8") | 0.01/.0005 | • | 4126699 | 370.00 | 296.00 |
| 30 EWR | 0 – 300 | (12") | 0.01/.0005 | • | 4126701 | 419.00 | 319.00 |
| 30 EWR-D | 0 – 200 | (8") | 0.01/.0005 | • | 4126523 | 486.00 | 376.00 |
| 30 EWR-D | 0 – 300 | (12") | 0.01/.0005 | • | 4126524 | 618.00 | 478.00 |

# MICROMAR. EVERYTHING REVOLVES AROUND PRECISION

Besides calipers, micrometers are the most frequently used hand measuring instruments. With precision-ground spindles, carbide-tipped measuring faces and a robust frame construction; the modern micrometer from the **Mahr Micromar series ensures maximum precision** and a **long working life**.

## Micromar 40 ER Digital Micrometer

With simple one handed operation



**REFERENCE**

- High contrast display, digit height 10 mm
- Spindle is made from stainless steel, hardened and ground
- Rapid drive
- Ratchet operation
- Hard lacquered steel frame, heat insulated
- Power supply: Battery life approx. 2 years
- Package contents: Operating instructions, battery, setting standard (from measuring range 25–50 mm), case

**Functions:** AUTO-ON/OFF, RESET (set display to zero), mm/inch, HOLD, (storage of measured values), LOCK function (key lock)

Offer price
**£ 128.00**
Order no. 4157010

| Product | Measuring range | | Resolution | Spindle thread pitch | Order no. | List price | Offer price |
|---------|-----|--------|------------|----------------------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | mm | | **£** | **£** |
| 40 ER | 0 – 25 | (0 – 1") | 0.001 / .00005 | 0.635 | **4157010** | 149.00 | **128.00** |

## Micromar 40 EWR Digital Micrometers

With simple one handed operation



**REFERENCE** | IP65 | ABS

- High contrast display, digit height 10 mm
- Spindle is made from stainless steel, hardened and ground
- Rapid drive
- Ratchet operation
- Hard lacquered steel frame, heat insulated
- Power supply: Battery life approx. 2 years
- Package contents: Operating instructions, battery, setting standard (from measuring range 25–50 mm), case

**Functions of 40 EWR:** same as 40 ER, plus ABS (set the display to zero without the reference to the origin being lost), Origin (enter a numerical value)

Offer price
**£ 159.00**
Order no. 4157011

| Product | Measuring range | | Resolution | Spindle thread pitch | Order no. | List price | Offer price |
|---------|-----|--------|------------|----------------------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | mm | | **£** | **£** |
| 40 EWR | 0 – 25 | (0 – 1") | 0.001 / .00005 | 0.635 | **4157011** | 185.00 | **159.00** |
| 40 EWR | 25 – 50 | (1 – 2") | 0.001 / .00005 | 0.635 | **4157012** | 250.00 | **214.00** |

# Micromar 844 AS

Self-centering Measuring Pistol Set

Including digital dial indicator 1086 R

REFERENCE

- Threaded connection for changing the measuring heads
- Self-centering measuring head consists of three laterally positioned probes, each is offset at intervals of 120°
- Probes from 12 mm are carbide tipped
- From 12 mm the measuring head can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made from aluminum to reduce weight

**Functions of MarCator 1086 R:** ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), <0> (tolerance GO / NO GO display mode), ABS (display can be set to zero, without losing the reference to the preset value), DATA (data transmission via connection cable), LOCK (lock individual keys), high-contrast LCD

- Package contents: MarCator 1086 R, operating instructions, setting rings, key for replacing measuring heads (from 30 mm), hexagonal key, case

**Offer price from**
**£ 1,211.00**

For measuring:
- Through holes
- Blind holes
- Centering shoulders

| Product | Measuring range | Resolution | Error limit | Number of 44 Ak measuring heads | Setting rings | Order no. | List price | Offer price |
|---------|-----------------|------------|-------------|----------------------------------|---------------|-----------|------------|-------------|
| | mm | mm/inch | µm | | | | £ | £ |
| 844 AS | 6 – 12 | 0.0005/.00002" | 3 | 3 | 8 mm, 10 mm | **4487760** | ~~1,661.00~~ | **1,349.00** |
| 844 AS | 12 – 20 | 0.0005/.00002" | 3 | 2 | 16 mm | **4487761** | ~~1,481.00~~ | **1,211.00** |
| 844 AS | 20 – 50 | 0.0005/.00002" | 3 | 4 | 25 mm, 40 mm | **4487762** | ~~2,183.00~~ | **1,787.00** |
| 844 AS | 50 – 100 | 0.0005/.00002" | 5 | 4 | 60 mm, 85 mm | **4487763** | ~~2,646.00~~ | **2,156.00** |

# Micromar 44 EWR

Self-centering digital inside micrometer set

With interchangeable measuring heads



**Offer price from**
**£ 1,079.00**

- Basic digital unit with measuring heads
- Rapid drive with integrated ratchet
- For additional features, see Micromar 44 AS

**Functions:** ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), ABS (display can be set to zero, without losing the reference to the preset value), DATA (data transmission via connection cable), LOCK (lock individual keys)

| Product | Measuring range | Resolution | Error limit | Number of 44 Ak measuring heads | Setting rings | Order no. | List price | Offer price |
|---------|-----------------|------------|-------------|--------------------------------|---------------|-----------|------------|-------------|
| | mm | mm/inch | µm | | | | £ | £ |
| 44 EWR | 6 – 12 | 0.001/.00005" | 4 | 3 | 8 mm, 10 mm | **4191160** | ~~1,557.00~~ | **1,274.00** |
| 44 EWR | 12 – 20 | 0.001/.00005" | 4 | 2 | 16 mm | **4191161** | ~~1,355.00~~ | **1,079.00** |
| 44 EWR | 20 – 50 | 0.001/.00005" | 4 | 4 | 25 mm, 40 mm | **4191162** | ~~2,106.00~~ | **1,739.00** |
| 44 EWR | 50 – 100 | 0.001/.00005" | 5 | 4 | 60 mm, 85 mm | **4191163** | ~~2,534.00~~ | **2,057.00** |

# Micromar 44 AS Self-Centering Inside Micrometer Set

Micromar 44 AS with scale readout



**Offer price from**
**£ 599.00**

- Satin chrome-finished operating and display units, anti-glare
- Rapid drive with integrated ratchet
- Self-centering measuring head consists of three laterally positioned probes, each is offset at intervals of 120°
- Probes from 12 mm are carbide tipped
- From 12 mm the measuring head can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made from aluminum to reduce weight
- Package contents: Operating instructions, setting rings, key for replacing measuring heads (from 30 mm), hexagonal key, case

| Product | Measuring range | Reading | Error limit | Number of Micrometers | Setting rings | Order no. | List price | Offer price |
|---------|-----------------|---------|-------------|----------------------|---------------|-----------|------------|-------------|
| | mm | mm | µm | mm | | | £ | £ |
| 44 AS | 6 – 12 | 0.001 | 4 | 3 | 8 mm, 10 mm | 4190350 | ~~941.00~~ | **764.00** |
| 44 AS | 12 – 20 | 0.001 | 4 | 2 | 16 mm | 4190351 | ~~726.00~~ | **599.00** |
| 44 AS | 20 – 50 | 0.005 | 4 | 4 | 25 mm, 40 mm | 4190352 | ~~1,647.00~~ | **1,364.00** |
| 44 AS | 50 – 100 | 0.005 | 5 | 4 | 60 mm, 85 mm | 4190353 | ~~1,958.00~~ | **1,643.00** |

# MARGAGE. SMART, PRECISION WORK

Measurement standards such as parallel gage blocks and optical flats form the basis of length metrology. Parallel gage blocks are used as setting gages for indicating measuring instruments and as reference standards in calibration laboratories. Optical flats are used for testing the flatness of high-quality surfaces on precision components and measuring instruments by the interference method.

## MarGage 419 C
### Ceramic parallel gage block set
For testing and calibrating micrometers

**Offer price**
**£ 636.00**
Order no. 4800090

**Advantages of ceramic:**
- Practical properties: easy to slide, corrosion-free, no need for preservation, low weight, highly scratch-resistant, antistatic, antimagnetic and electrically non-conductive
- Damage to measuring surfaces from scratches or blowout causes no burring. Sliding properties and dimensional accuracy are unaffected
- **Extremely wear-resistant**. The longest life and highest stability of any material currently used for gage blocks. Allows for significantly longer gage monitoring intervals
- **Coefficient of expansion similar to that of steel**. So there are no usage restrictions, in manufacturing or in the laboratory.
- **Package contents:** Wooden case including Mahr calibration certificate

| Product | Number of sets | Tolerance class | Nominal gage block sizes | Optical flat | Order no. | List price | Offer price |
|---------|----------------|-----------------|--------------------------|--------------|-----------|------------|-------------|
| | | | mm | | | £ | £ |
| 419 C | 10 + 1 | 1 | 2.5 / 5.1 / 7.7 / 10.3 / 12.9 / 15.0 / 17.6 / 20.2 / 22.8 / 25 | 12 mm Ø 30 mm | **4800090** | ~~764.00~~ | **636.00** |

## MarGage 421 PS
### Set of optical flats

**Offer price from**
**£ 389.00**

- For simultaneous testing of parallelism and flatness, e.g. of planar measuring surfaces of micrometers and snap gages by the interference method
- Each with 4 different thicknesses for testing parallelism in different spindle settings (for rotating spindles)

| Product | Diameter | Measuring range | Nominal thickness | Number of flats | Flatness deviation | Parallelism deviation | Order no. | List price | Offer price |
|---------|----------|-----------------|-------------------|-----------------|--------------------|-----------------------|-----------|------------|-------------|
| | mm | mm | mm | | µm | µm | | £ | £ |
| 421 PS | 30 | 0 - 25 | 12 | 4 | 0.15 | 0.30 | **4800185** | ~~470.00~~ | **389.00** |
| 421 PS | 30 | 25 - 50 | 25 | 4 | 0.15 | 0.30 | **4800186** | ~~543.00~~ | **449.00** |
| 421 PS | 30 | 50 - 75 | 50 | 4 | 0.15 | 0.30 | **4800187** | ~~635.00~~ | **528.00** |
| 421 PS | 30 | 75 - 100 | 75 | 4 | 0.15 | 0.30 | **4800188** | ~~902.00~~ | **750.00** |

Since 1936 Mahr has been one of the world's leading suppliers of dial test indicator measuring devices. The sensitive computer-optimized mechanism ensures maximum security and precision. MarTest instruments are ideal for use in workshop conditions, with sealed dials ensuring liquid resistance.

## MarTest 800 S / S-R / SG / SGE
Dial test indicator measuring device - standard version
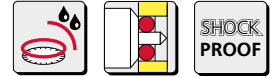
**Offer price**
**£ 69.00**
Order no. 4305200

- High contrast dial face, sealed with an O-ring
- Satin chrome-finished housing with 3 dovetail guideways
- Shockproof mechanism
- Anti-magnetic
- Ball-bearing mounted double lever, friction clutch for overload protection
- Measuring anvil with carbide ball ø 2 mm

Hardened mineral glass viewing panel,
resistant to breakage and scratching

| Product | Measuring range | Reading | Dial diameter | Measuring anvil length | Order no. | List price | Offer price |
|---------|-----------------|---------|---------------|------------------------|-----------|------------|-------------|
| | mm | mm | mm | mm | | £ | £ |
| 800 S | ± 0.4 | 0.01 | 28 | 14.5 | 4305200 | 80.00 | 69.00 |
| 800 S-R* | ± 0.4 | 0.01 | 28 | 14.5 | 4305205 | 97.00 | 85.00 |
| 800 SG | ± 0.4 | 0.01 | 38 | 14.5 | 4307200 | 81.00 | 59.00 |
| 800 SGE | ± 0.07 | 0.001 | 38 | 9.15 | 4308220 | 150.00 | 108.00 |

* with ruby ball

## MarTest 800 SM / SGM / SG-R / SL
Dial Test Indicator Measuring Device - for special measurements
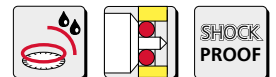
**Offer price**
**£ 98.00**
Order no. 4308200

- High contrast dial face, sealed with an O-ring
- Satin chrome-finished housing with 3 integrated dovetail guideways
- Shockproof mechanism
- Anti-magnetic model
- Ball-bearing mounted double lever, friction clutch for overload protection
- Measuring anvil with carbide ball ø 2 mm

Hardened mineral glass viewing panel,
resistant to breakage and scratching

| Product | Measuring range | Reading | Dial diameter | Measuring anvil length | Order no. | List price | Offer price |
|---------|-----------------|---------|---------------|------------------------|-----------|------------|-------------|
| | mm | mm | mm | mm | | £ | £ |
| 800 SM | ± 0.1 | 0.002 | 28 | 14.5 | 4308150 | 101.00 | 89.00 |
| 800 SGM | ± 0.1 | 0.002 | 38 | 14.5 | 4308200 | 112.00 | 98.00 |
| 800 SG-R* | ± 0.4 | 0.01 | 38 | 14.5 | 4307205 | 98.00 | 86.00 |
| 800 SL** | ± 0.25 | 0.01 | 28 | 41.24 | 4306200 | 127.00 | 109.00 |

* with ruby ball ** factory standard

# MARCATOR POINTS YOU IN THE RIGHT DIRECTION

Due to their versatility, dial indicators rank as some of the most commonly used transducers. That is certainly the case with our MarCator series. Our mechanical dial indicators have **precision gears and pinions for maximum accuracy.** Also available in shockproof and waterproof versions.

## **MarCator** 810 A Precision Dial Indicator

The classic indicator with a lifter protection cap

**Offer price**
**£ 29.00**
Order no. 4311050

- High contrast dial face
- Adjustable colored tolerance markers for optimum contrast
- Chrome-plated metal housing
- Lifter protection cap with dust protection function
- High-precision gears and pinions

| Product | Measuring range | Reading | Dial diameter | Details | Order no. | List price | Offer price |
|---------|-----------------|---------|---------------|---------|-----------|------------|-------------|
|         | mm              | mm      | mm            |         |           | £          | £           |
| 810 A   | 10              | 0.01    | 50            | **Measuring force:** 0.7 - 1.3 N | 4311050 | ~~39.00~~ | 29.00 |

## **MarStand** 815 MG Articulated Stand with Magnetic Base

Simple one handle positioning

**Offer price from**
**£ 155.00**

- 3D articulated arm, can reach any position within the operating range
- Easy to position, all three joints can been fixed into position with just one handle
- Maintenance-free mechanical clamping system
- Arm components are made of high-quality black anodized aluminum
- Dial indicator holder with 8 mm mount diameter and dovetail for dial test indicator measuring devices
- Equipped with micro-adjustment, free of backlash
- Powerful switching magnet
- Package contents: Excludes dial indicator

| Product | Fine adjustment range | Total height | Projection (max.) | Vee-block for shaft diameter | Magnetic force of vee-block | Order no. | List price | Offer price |
|---------|----------------------|--------------|-------------------|------------------------------|------------------------------|-----------|------------|-------------|
|         | mm                   | mm           | mm                | mm                           | N                            |           | £          | £           |
| 815 MG  |                      | 224          | 130               |                              | 300                          | 4420350   | ~~173.00~~ | 155.00      |
| 815 MG  | 5                    | 316          | 200               |                              | 800                          | 4420360   | ~~191.00~~ | 169.00      |
| 815 MG  |                      | 401          | 280               | 6 - 120                      |                              | 4420370   | ~~232.00~~ | 199.00      |
| 815 MG* | 2                    | 444          | 330               |                              | 1000                         | 4420380*  | ~~446.00~~ | 390.00      |

* Specifically designed for measuring instruments with μm resolution

# DIGITAL MEASUREMENT WITH MARCATOR

Our **innovative range of digital dial indicators includes high-precision electronic measuring systems,** allowing for a whole range of additional practical measuring functions. Simple to operate with a large, easy-to-read display, our digital dial indicators meet all the requirements of a modern measuring instrument. **Quick and easy data processing** ensures results are available when you need them.

## MarCator 1075 R Digital Dial Indicator

With large display

**Digimatic | RS232C | USB | ((•)) | IP52 | 🔒**

**REFERENCE**

**Functions:** ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), DATA (data transmission via connection cable), LOCK function (key lock), AUTO-ON/OFF
- High contrast LCD
- Protection cap on end of measuring pin
- Power supply: Battery life approx. 3 years

**Offer price**
**£ 99.00**
Order no. 4336010

| Product | Measuring range | | Resolution | Order no. | List price | Offer price |
|---------|-----------------|--------|------------|-----------|------------|-------------|
| | mm | (inch) | mm/inch | | £ | £ |
| 1075 R | 12.5 | (.5") | 0.01 / .0005" | **4336010** | ~~138.00~~ | **99.00** |
| 1075 R | 12.5 | (.5") | 0.005 / .0001" | **4336020** | ~~187.00~~ | **139.00** |
| 1075 R | 12.5 | (.5") | 0.001 / .00005" | **4336030** | ~~278.00~~ | **209.00** |

## MarCator 1086 R Digital Dial Indicator

Resolution from 0.5 µm and tolerance display

**Digimatic | RS232C | USB | ((•)) | TOL | IP42 | ABS | 🔒**

**REFERENCE**

Tolerance display with measurement value display.
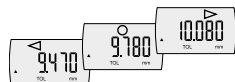
Tolerance display without measurement value display.

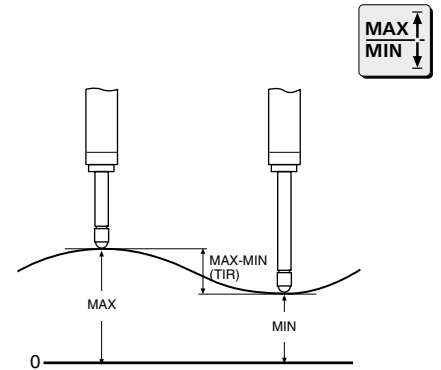**Functions:** ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), ABS (display can be set to zero, without losing the reference to the preset value), <0> (tolerance GO / NO GO display mode), DATA (data transmission via connection cable), factor (adjustable), LOCK (lock individual keys)
- High contrast LCD
- Operating and display unit (bezel) can be rotated 280°
- Lifter protection cap on end of measuring pin
- Power supply: Battery life approx. 3 years

**Offer price**
**£ 267.00**
Order no. 4337620

| Product | Measuring range | | Resolution, switchable | Order no. | List price | Offer price |
|---------|-----------------|--------|------------------------|-----------|------------|-------------|
| | mm | (inch) | mm (inch) | | £ | £ |
| 1086 R | 12.5 | (.5") | 0.01 / .0005" | **4337130** | ~~261.00~~ | **197.00** |
| 1086 R | 12.5 | (.5") | 0.0005 / 0.001 / 0.002 / 0.005 / 0.01 mm (.00002" / .00005" / .0001" / .0002" / .0005") | **4337620** | ~~322.00~~ | **267.00** |
| 1086 R | 25 | (1") | | **4337621** | ~~384.00~~ | **314.00** |

# MarCator 1087 R Digital Dial Indicators

Resolution from 0.5 µm.
Also with dynamic measuring functions
(MAX / MIN / MAX-MIN)

| Digimatic | RS232C | USB | ((•)) | TOL | IP42 | MAX/MIN | ABS | 🔒 |

**REFERENCE**

**Offer price**
**£ 338.00**
Order no. 4337660

**Functions:** ON/OFF, RESET (set display to zero), mm/inch, reversal of counting direction, PRESET (enter a numerical value), TOL (enter tolerance limit values), MAX/MIN (store the search for the reversal point), TIR (MAX-MIN) for testing radial runout and flatness, ABS (display can be set to zero, without losing the reference to the preset value), DATA (data transmission via connection cable), factor (adjustable), LOCK (lock individual keys)

- High contrast LCD
- Operating and display unit (bezel) can be rotated 280°
- Lifter protection cap on end of measuring pin
- Power supply: Battery life approx. 3 years

MAX/MIN

MAX-MIN (TIR)

MAX

MIN

0

Radial run-out gage not included

| Product | Measuring range | | Resolution, switchable | Order no. | List price | Offer price |
|---------|------|--------|------|-----------|-----------|-------------|
| | mm | (inch) | mm/inch | | £ | £ |
| 1087 R | 12.5 | (.5") | 0.0005 / 0.001 / 0.002 / 0.005 / 0.01 mm (.00002" / .00005" / .0001" / .0002" / .0005") | **4337660** | 404.00 | **338.00** |
| 1087 R | 25 | (1") | | **4337661** | 462.00 | **376.00** |

# AIM HIGH

Digimar height measuring instruments guarantee the ultimate in flexibility and quality control. Our motorized Digimar height measuring instruments are **simple to operate**; all the basic functions can be executed **with a single key**, offering **ease of use and accuracy.**

## Digimar 816 CL Height Measuring Instrument

Perfect for accurate measurements in the production environment

**Offer price from £ 3,285.00**

- Contacting from below and above
- Width between ledge and/or distance between a groove incl. center of the ledge and/or groove
- Diameter of a bore hole and/or shaft incl. center of the bore hole and/or shaft
- Reversal point of a bore hole / shaft (above and/or below)
- Calculate distances and/or symmetry
- Dynamic measuring functions
- Measuring program
- Process measured data

Operating and display unit:
- Easy-to-read backlit graphic LCD
- Clear function keys
- Language-neutral operator guidance with self-explanatory icons / pictograms
- Possible to set additional zero points on a workpiece
- Memory can store up to 99 measured values

Measuring system:
- Excellent accuracy and reliability due to the optical incremental measurement system with the double reader head
- Dynamic probe system enabling high repeatability
- Air bearings system for light and smooth movement
- Precise measuring head guidance on stainless steel guideways
- Motorized measuring slide simplifies measurement runs
- Probe constant remains after the instrument is switched off
- Integrated rechargeable battery with a long operating life for mains-independent measurement
- Temperature compensation via internal temperature sensor

| Product | | 816 CL | |
|---|---|---|---|
| Measuring range | mm | 0 – 350 | 0 – 600 |
| Range of application from. . . to | mm | 170 . . . 520 | 170 . . . 770 |
| Resolution | mm | 0.01, 0.001 | |
| Error limit | | (2.8 + L/300) L in mm | |
| Repeatability: Bore | µm | 3 | |
| Repeatability: Plane | µm | 2 | |
| Perpendicularity deviation | µm | 15 | 20 |
| Operating time max. | h | 10 | |
| Measuring force | N | 1.0 +/–0.2 N | |
| Rel. humidity, non-condensing | % | 65 | |
| Working temperature | °C | 20 | |
| Operating temperature | °C | 10 – 40 | |
| Order no. | | 4429030 | 4429031 |
| List price | £ | ~~3,897.00~~ | ~~4,415.00~~ |
| Offer price | £ | 3,285.00 | 3,599.00 |

# Digimar 817 CLM Height Measuring Instrument

With Quick Mode. Rapid measurement at the highest accuracy

**2D** ((•)) **USB** **RS232C**
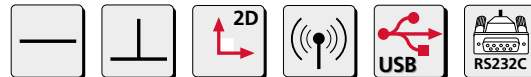
**Offer price from £ 4,455.00**

- Contacting from below and above
- Reversal point of a bore hole / shaft (above and/or below)
- Calculate distances and/or symmetry
- Dynamic measuring functions
- Measure perpendicularity and straightness
- Measure in 2D mode
- Measuring programs
- Statistics
- Process measured data etc.

Operating and display unit:
- Large and clearly defined function keys
- Easy-to-read backlit graphic LCD
- Operator guidance with self-explanatory icons / pictograms
- Future-proof thanks to software updates
- Selectable auto-off function, without loss of measured values

Measuring system:
- Excellent accuracy and reliability due to the optical incremental measurement system with the double reader head
- Dynamic probe system enabling high repeatability
- Air bearings system for light and smooth movement
- Precise measuring head guidance on stainless steel guideways
- Motorized measuring slide simplifies measurement runs
- Probe constant remains after the instrument is switched off
- Integrated rechargeable battery with a long operating life for mains-independent measurement
- Temperature compensation via internal temperature sensor

| Product | | 817 CLM | | |
|---|---|---|---|---|
| Measuring range | mm | 0 – 350 | 0 – 600 | 0 – 1000 |
| Range of application from. . . to | mm | 170 . . . 520 | 170 . . . 770 | 170 . . . 1170 |
| Resolution | mm | 0.01, 0.005, 0.001, 0.0005, 0.0001 | | |
| Error limit | | (1.8 + L/600) L in mm | | |
| Repeatability: Bore | µm | 1 | | |
| Repeatability: Plane | µm | 0.5 | | |
| Perpendicularity deviation | µm | 5 | 6 | 10 |
| Operating time max. | h | 10 | | |
| Measuring force | N | 1.0 +/–0.2 N | | |
| Rel. humidity, non-condensing | % | 65 | | |
| Working temperature | °C | 20 | | |
| Operating temperature | °C | 10 – 40 | | |
| Order no. | | 4429010 | 4429011 | 4429012 |
| List price | £ | 5,166.00 | 5,693.00 | 8,820.00 |
| Offer price | £ | 4,455.00 | 4,849.00 | 7,999.00 |

All illustrations and technical data are without guarantee. All prices shown are recommended retail prices.
The net prices are shown in £, they exclude sales tax and are valid from April 8th, 2019 until May 31st, 2019

Mahrlights | Spring 2019

- 0 +

Mahr

21

# IDEAL FOR THE WORKSHOP

When you need to measure and check workpieces quickly in the workshop, trust Mahr's height measuring and scribing instruments.

## Digimar 814 SR Height Measuring and Scribing Instrument
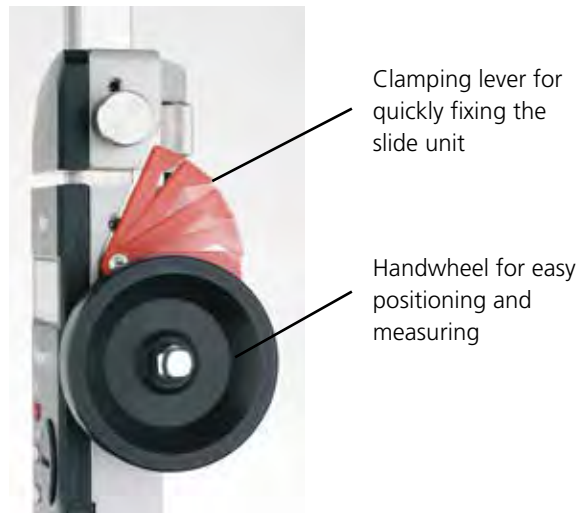
Exact positioning by handwheel



**Offer price**
**£ 475.00**
Order no. 4426100

**Functions:** RESET (set display to zero), mm/inch, ABS (switch between relative and absolute measurement), reference lock/unlock, PRESET (enter a numerical value), DATA (data transmission via connection cable), AUTO-ON/OFF
- Battery life up to 3 years
- Travel speed 1.5 m/s (60″/s)
- Ergonomic, sturdy base
- Hardened and lapped contact surface for a smooth and even movement
- Slide and rail are made of hardened stainless steel
- Handwheel for positioning and measuring
- Fine adjustment
- Locking screw
- Interchangeable measuring and scriber tips, carbide tipped

Extra stable and torsionally rigid columns with strong cross-section for precise marking and measuring tasks

Sturdy heavy-duty base, easy to handle

Clamping lever for quickly fixing the slide unit

Handwheel for easy positioning and measuring

| Product | Measuring range | | Resolution | Details | Order no. | List price | Offer price |
|---------|------|--------|-----------|---------|-----------|-----------|-----------|
| | mm | (inch) | mm/inch | | | £ | £ |
| 814 SR | 0 – 350 | (0 – 14″) | 0.01 / .0005″ | Digit height: 12 mm | 4426100 | ~~554.00~~ | 475.00 |
| 814 SR | 0 – 600 | (0 – 24″) | 0.01 / .0005″ | | 4426101 | ~~972.00~~ | 849.00 |

# MILLIMAR. MADE FOR PRECISION

Mahr provides a whole world of dimensional metrology excellence. The Millimar range of products comprises perfectly matched probes and evaluation units, as well as highly precise mechanical components and customer solutions. For every measuring task in length metrology we have the solution: Millimar by Mahr.

## Millimar C 1200
### Compact Length Measuring Instrument

With one probe input

**Functions:** ON/OFF, mm/inch, reversal of counting direction, measuring range switching, TOL (enter tolerance limit values), PRESET (enter a numerical value), factor (adjustable), DATA (data transmission), MAX/MIN memory for reversing point search, TIR (MAX-MIN) for testing radial runout and flatness

- High resolution, high contrast TFT color display
- Fully adjustable display for ideal viewing angle
- Extremely easy to operate
- Suitable for mains or battery operation
- Suitable for mobile use when operating with batteries
- Compact housing
- Dynamic measuring functions (max, min, max-min)
- Menu lock
- Asymmetric tolerance display

**Offer price**
**£ 739.00**
Order no. 5312010

| Product | Indication range | | Resolution | Reading | Order no. | List price | Offer price |
|---------|------------------|------------------|------------|---------|-----------|------------|-------------|
| | Digital display | Analog display | | | | | |
| | µm | µm | µm | µm | | **£** | **£** |
| C1200 | ± 5000 | ± 5000 , ± 2000 , ± 1000 , ± 300 , ± 100 , ± 30 , ± 10 , ± 3 | 0.1 | 500, 200 , 100 , 20 , 10 , 2 , 1, 0.2 | **5312010** | ~~851.00~~ | **739.00** |

## Millimar P2004 / 1318 Inductive Probes

Measuring probes for every application

**Offer price from**
**£ 206.00**

Millimar P2004

Millimar 1318

### Millimar P2004
- Measuring pin mounted in ball-bearing guide
- High linearity across the entire measuring range
- Excellent electromagnetic shielding (EMC)
- All probes can be easily converted from axial to radial cable entry by use of a slip-on cap (included in package)

### Millimar 1318
- Dial test indicator inductive probe
- Flexible probe adjustment to contact surface
- Highly robust as the measuring system is offset from the guide and mounting shaft

| Product | Measuring range | Measuring force | Repeatability $f_w$ | Measuring value hysteresis $f_u$ | Order no. | List price | Offer price |
|---------|-----------------|-----------------|---------------------|----------------------------------|-----------|------------|-------------|
| | mm | N | µm | µm | | **£** | **£** |
| P2004 M | ± 2 | 0.75 | 0.1 | 0.5 | 5323010 | ~~240.00~~ | **206.00** |
| 1318 | - 0.3 . . . 1 | 0.25 +/-0.05 | 0.03 | 0.5 | 5313180 | ~~613.00~~ | **527.00** |

# MILLIMAR. SMART AND UNIVERSAL

Carefully matched hardware and software and the convenient connection to Millimar N 1700 modules via USB interface reliably solve any measuring task. The intelligent Millimar Cockpit software, supported by graphical control elements, ensures simple and intuitive operation.

## Millimar C 1700 PC Measuring Computer

The convenient measuring computer for complex measuring tasks in the manufacturing sector

**Offer price**
**£ 2,299.00**
Order no. 5312801

| Product | | C 1700 PC | Cockpit Software |
|---|---|---|---|
| Package contents | | Millimar Cockpit software including 10.1" Touch PC, preinstalled Windows 10 IoT Enterprise, Mahr license key, installation disk, 16 GB recovery stick, operating instructions (online help), AC adapter, VESA 100 standard bracket | Mahr license key, installation disk, operating instructions (online help) |
| Display | | Vertical bar graph, horizontal bar graph, analog display or circular scale, digital display, any combination of display types can be chosen for each feature | |
| Resolution | µm | 0.01 | |
| Tolerance display | | Upper and lower tolerance limit (per feature) Upper and lower warning limit (per feature) | |
| Compatibility | | USB, Integrated Wireless, Millimar N 1700 | |
| Measuring combinations | | Predefined formula templates for standard features Links entered via comprehensive formula editor | |
| Feature types | | Length, angle, dimensionless | |
| Dynamic functions | | MAX, MIN, MAX-MIN, MAX+MIN | |
| Classification | | Max. 20 classes | |
| Number of connectable N 1700 measuring channels | | 32 | |
| Number of connectable wireless receivers for i-stick | | 1 | |
| Number of connectable measuring instruments with Integrated Wireless | | 8 | |
| Number of connectable measuring instruments with USB interface | | 64 | |
| Data export | | qs-STAT, Excel | |
| Hardware interfaces | | 1x USB 3.0, 3x USB 2.0, 2x COM port Full-PIN (RS232/485; 5V/12V), 2x COM 2x COM "Port": 3-PIN (RX, TX, GND; RS232/485 switchable), 2× 10/100/1000Mbit RJ45 Ports; 2x W-LAN connector, VGA, Display-port | – |
| Power supply | | 100–240 V ACDC; 12 V DC Out | – |
| IP protection class | | IP 65 (front panel) | – |
| Languages | | German, English, Chinese, French, Russian, Czech | |
| System requirement | | 2 free USB 2.0 interfaces | – |
| Order no. | | 5312801 | 5312803 |
| List price | £ | ~~2,619.00~~ | ~~899.00~~ |
| Offer price | £ | 2,299.00 | 809.00 |

# MILLIMAR. MODULES FOR YOUR TASKS IN THE MANUFACTURING SECTOR

Smart, flexible combinations of measuring modules and software to tackle customer-specific measuring tasks.

## Millimar N 1700 Modules

Modules for your application

**Offer price**
**£ 289.00**
Order no. 5331120

- Flexibly configure RS485 bus modules
- Powerful interface modules to evaluate measuring sensors
- High speed data retrieval from the connected devices
- Connect N 1700 modules via USB interface to the smart, universal evaluation and configuration software Millimar Cockpit
- Connect all compatible probe types using one module
- Flexible and modular product combinations to tackle customer-specific measuring tasks
- Max. theoretical bus data rate of 4189 values/s (depending on the number of connected channels)
- Package contents: Operating instructions

| N 1702 M | N 1701 USB | N 1701 PS | N 1704 I/O |

| Product | | N 1702 M | N 1701 USB | N 1701 PS | N 1704 I/O |
|---|---|---|---|---|---|
| Product description | | Inductive probe module | USB connection module | Power supply module | I/O control module |
| Resolution | µm | 0.1 | – | – | – |
| Measuring range, inductive probe | µm | ± 2000, ± 5000 | – | – | – |
| Probe inputs | | Mahr 1340, Mahr half bridge, Mahr LVDT, Mahr VLDT | – | – | – |
| Data transmission rate | Values/sec. | 4189 | – | – | – |
| Error limit | | 0.3% (min. 0.2 µm) | – | – | – |
| Data interface | | RS485 | RS485 | RS485 | RS485 |
| Power supply | | – | – | 230 V/115 V; 50/60 Hz | – |
| Power supply | mA | – | 430 | 2000 | – |
| Power consumption | mA | 110 | – | – | 70 |
| Control inputs | | – | – | – | 4 inputs, 10-30 V |
| Control outputs | | – | – | – | 4 outputs, 10-30 V VESD protected, short-circuit proof |
| Order no. | | **5331120** | **5331130** | **5331133** | **5331134** |
| List price | £ | 324.00 | 144.00 | 189.00 | 234.00 |
| **Offer price** | £ | **289.00** | **129.00** | **168.00** | **209.00** |

# MARSURF. MOBILE ROUGHNESS MEASURING INSTRUMENT FOR MORE MEASURING CONVENIENCE

Simple and intuitive to use.

Mahr's entry-level surface metrology instrument is intuitive and simple to use. The 4.3" TFT touch display can be turned in any direction. The removable drive unit makes the MarSurf PS 10 flexible in production and manufacturing. It features an integrated but removable calibration standard. Measuring records can be saved in the instrument itself as PDF files. Alternatively, they can be transferred using MarCom.

## Extremely easy to operate with detailed profile display

The large 4.3" high-resolution and backlit TFT touch display allows intuitive operation (just like a smartphone) and precise representation of the measuring profile.

## Flexible use

The removable drive unit, in conjunction with the optional hand-held support, lends this instrument added versatility where space is limited, e.g. in holes or when measuring small parts.

## Perfect evaluation and documentation

The PS 10 automatically creates a PDF measuring record without the need for any additional software. The measuring record can be easily transferred to a PC via the USB port. Alternatively, measuring data can be evaluated in the MarSurf XR 1 and XR 20 roughness software or the measurements can be sent to Excel or SPC programs using the MarCom software.

## Always at hand

The calibration standard stays in the instrument and can be checked at any time.

# MarSurf PS 10 Set Mobile Roughness Measuring Instrument

With the latest operating concept
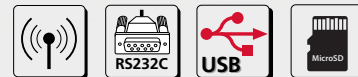
- Simple and intuitive to use: As easy to use as a smart phone
- Large, illuminated 4.3" TFT touch display
- Create complete PDF measuring records directly in the measuring instrument
- Customer-specific comments can be entered directly into the MarSurf PS 10 for the PDF measuring record
- Data backup as TXT, X3P, CSV or PDF file
- Instrument flexibility: Removable drive unit
- 31 surface parameters: Offer the same range of functions as a laboratory instrument

**Package contents:**
- Drive unit (removable)
- 1 standard probe conforming to standards
- Built-in rechargeable battery, charger / 3 adapters, USB cable
- Roughness standard integrated into housing (removable), including Mahr calibration certificate
- Probe protection, carry case with shoulder strap
- Extension cable for drive unit
- Operating instructions

**Offer price**
**£ 1,595.00**
Order no. 6910230

| Product | | PS 10 |
|---|---|---|
| Measuring range | µm | 350 |
| Parameters | | Ra, Rq, Rz (Ry (JIS) equivalent to Rz), Rz (JIS), Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, RPc, Rmr (tp (JIS, ASME) equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx, R3z |
| Stylus tip | µm | 2 |
| Calibration function | | dynamic; Ra, Rz, Rsm |
| Memory | | min. 3900 profiles, min. 500,000 results, min. 1500 PDF measuring records, expandable to 32 GB with microSD card (320x memory capacity) |
| Data interface | | USB, MarConnect (RS232), microSD slot for SD / SDHC cards up to 32 GB |
| Battery | | Lithium-ion battery, 3.7 V, nominal capacity 11.6 Wh, min. 1200 measurements |
| Measuring principle | | Stylus method |
| Probe | | Inductive skidded probe |
| Measuring force | N | 0.75 mN |
| Order no. | | 6910230 |
| List price | £ | 1,850.00 |
| Offer price | £ | 1,595.00 |

All illustrations and technical data are without guarantee. All prices shown are recommended retail prices.
The net prices are shown in £, they exclude sales tax and are valid from April 8th, 2019 until May 31st, 2019

Mahrlights | Spring 2019          Mahr          27

# ROUGHNESS WITH PRECISION

Careful testing is paramount wherever surface structures affect the functioning, processing or appearance of components or products. **MarSurf brings Mahr expertise and know how** as the top-quality solution for all your surface metrology requirements.

## MarSurf M 300 C SET / M 300 SET Mobile Roughness Measuring Instrument

Perfect for accurate measurements in the production environment

**USB**

**M 300 C SET**

**Note:** An additional separate
MarSurf RD 18 C2 drive unit for transverse tracking for M 300 C
is also available!

**Offer price
£ 3,149.00**

**M 300 SET**

- Automatic profile detection and corresponding selection of filters and traversing length conforming to standards
- Individual sampling lengths and short cutoff can be selected
- Printing of R-profile (ISO/ASME/JIS), P-profile (MOTIF), material ratio curve, measuring record
- Measuring units (µm/µinch) and standards (ISO/JIS/ASME/MOTIF) are selectable

**M 300 C SET contents:**
- M 300 C evaluation instrument
- Cylindrical drive unit RD 18 C
- PHT 6-350 / 2 µm default probe (conforming to standards)
- Roughness standard PRN 10 with Mahr calibration certificate
- Height adjustment, probe protection, **1x USB cable** (for connection to a PC), carrying case, etc.

**Additional feature of the M 300 SET:**
- Mobile roughness measuring instrument with the option of wireless (Bluetooth) connection to the drive unit

**M 300 SET contents:**
- M 300 evaluation instrument
- RD 18 drive unit with integrated standard
- PHT 6-350 / 2 µm default probe (conforming to standards)
- Height adjustment, probe protection, **2x USB cable** (for connection to a PC and for use with cable), carrying case, etc.

| Product | | M 300 C | M 300 |
|---|---|---|---|
| Measuring range | µm | 350 | |
| Parameters | | Ra, Rz (Ry (JIS) equivalent to Rz), Rz (JIS), Rq, Rmax, Rp, RpA (ASME), Rpm (ASME), Rpk, Rk, Rvk, Mr1, Mr2, A1, A2, Vo, Rt, R3z, RPc, Rmr (tp (JIS, ASME) equivalent to Rmr), RSm, RSk, S, CR, CF, CL, R, Ar, Rx, Rv | |
| Stylus tip | µm | 2 | |
| Calibration function | | Dynamic | |
| Memory | | Store up to 40,000 results and up to 30 profiles | |
| Dimensions (L x W x H) of the drive unit | mm | 139 x ø26 | 130 x 70 x 50 |
| Dimensions (L x W x H) of the evaluation instrument | mm | 190 x 140 x 75 | |
| Weight of the drive unit | g | approx. 300 | |
| Weight of the evaluation unit | kg | approx. 1 | |
| Measuring principle | | Stylus method | |
| Probe | | Inductive skidded probe | |
| Measuring force | N | 0.75 mN | |
| Order no. | | 6910431 | 6910401 |
| List price | £ | 4,023.00 | 4,023.00 |
| Offer price | £ | 3,149.00 | 3,149.00 |

Both in the measuring room and increasingly also in the production area, there is a need for surface evaluations requiring skidless tracing. This generally requires more highly skilled operators, more time and more adjustment work.

Within the "mobile surface metrology" range, MarSurf M 400 provides the necessary range of functions, while at the same time being quick and easy to use.

## **MarSurf** M 400 Mobile Roughness Measuring Instrument

Magnetic probe holder system

- Mobile and stationary measuring instrument
- Roughness and waviness measurements
- Traversing lengths up to 26 mm
- Over 50 R , W and P surface parameters
- Automatic choice of cut-off and traversing length in accordance with standard
- Dynamic calibration function
- Cable and Bluetooth connection between drive unit and evaluation instrument (4 m)
- Magnetic probe holder (breakaway probe) BFW 250
- Motorized probe zero setting (max. 7.5 mm)

Package contents:
- MarSurf M 400 evaluation instrument
- MarSurf SD 26 drive unit including BFW 250 probe system
- Standard probe arm (6852403)
- 1 roll of thermal paper
- Wide-range power supply unit with 3 adapters
- 2 x USB cables (for connecting to the PC and for use with cable)
- Operating instructions
- Supplied in a handy transport case

**Offer price**
**£ 7,155.00**
Order no. 6910404

BFW probe system with magnetic probe arm holder

| Product | | M 400 |
|---|---|---|
| **Measuring principle** | | Stylus method |
| **Probe** | | BFW skidless system |
| **Measuring range** | µm | +/- 250 µm (up to +/- 750 µm with 3x probe arm length) |
| **Profile resolution** | | Measuring range +/- 250 µm: 8 nm<br>Measuring range +/- 25 µm: 0.8 nm |
| **Filter (ISO/JIS)** | | Gaussian filter as per 16610–21 (formerly ISO 11562), filter as per ISO 13565 |
| **Cutoff lc (ISO/JIS)** | mm | 0.25 mm, 0.8 mm, 2.5 mm, automatic, variable |
| **Number n of sampling lengths (ISO/JIS)** | | 1–5 |
| **Contacting speed** | mm/s | 0.2 mm/s; 1.0 mm/s |
| **Measuring force** | N | 0.75 mN |
| **Surface parameters** | | Over 50 surface parameters for R-, P- and W-profiles according to current ISO/JIS or Motif standards (ISO 12085) |
| **Order no.** | | 6910404 |
| **List price** | £ | 8,235.00 |
| **Offer price** | £ | 7,155.00 |

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Mahrlights | Spring 2019

Mahr

29

# MarSurf CM - OPTICAL 3D MICROSCOPY

The MarSurf CM *explorer* is a compact, easy-to-use package for the precision measurement and analysis of surfaces. The MarSurf CM explorer generation combines tried-and-tested features with the innovation of MarSurf CM technology. The measuring system comes with HDR function, automatic objective lens recognition and collision detection in all spatial directions. The MarSurf CM *explorer* has long proved its worth both for cost-effective laboratory use and for quality assurance in the production environment. It returns reliable 3D measurements in just a few quick and straight-forward function steps.

## **MarSurf** CM *explorer* Precision 3D Measurement
Flexible, all-round measurement solutions

**1** Optimum performance
**Combination of high measuring point density and measurements in seconds**

**2** High precision with 16-bit HDR technology
**The latest image sensors, high performance lenses and accurate path length measuring systems for measurements in compliance with standards**

**3** True 3D measurements
**Physical data recording with patented confocal multi-pinhole technology**

**4** Intuitive operation
**Sophisticated operating concept and ergonomic workplace solutions**

**5** Simple automation
**User-independent series measurements meeting industry requirements**

**6** Robust construction
**Excellent repeatability, with features designed with industry in mind**

**7** Superb flexibility
**Modular hardware component design, powerful software solutions and standardized interfaces**

# PERSPECTIVE IN METROLOGY

With MarVision optical measuring instruments, Mahr offers you a quick and reliable solution to many different measurement tasks. From precision products for the manufacturing industry to medical technology and miniaturized electronic components, precise measuring instruments and efficient operating and evaluation units meet the highest demands.

## MarVision SM 150 / SM 151 / 160 Stereo Zoom Microscope

Inspection of workpieces on the shop floor or in the quality control laboratory



**Offer price
£ 707.00**
Order no. 4245001

- High quality optics for light intensive and sharp 3D images
- Continuously variable magnification due to the adjustable zoom lens
- Focusing with an ergonomic handwheel, mounted either side, ideal for either a left or right handed operator
- Vee-block head tilted to 45° and rotatable through 360° with dioptric adjustment (54 – 76 mm)
- Illumination 12 V /15 W, integrated incident and transmitted light, continuously variable (SM 150 only)
- Trinocular stereo zoom microscope including CamSet (SM 151 only)



**Offer price
£ 1,017.00**
Order no. 4245003



**Offer price
£ 1,413.00**
Order no. 9104848

| Product | Magnification | Field of view diameter | Observation tube angle | Optical tube | Working distance | Max. height of test piece | Order no. | List price | Offer price |
|---------|---------------|------------------------|------------------------|--------------|------------------|---------------------------|-----------|------------|-------------|
| | | mm | µm | | mm | mm | | £ | £ |
| SM 150 | variable 7x – 45x | 28 – 5 | 45° | Binocular | 105 | 75 | 4245001 | ~~832.00~~ | 707.00 |
| SM 160 | | | | | | | 4245003 | ~~1,184.00~~ | 1,017.00 |
| SM 151 | | | | Trinocular | | | 9104848 | ~~1,652.00~~ | 1,413.00 |
| **Accessories** | | | | | | | | | |
| 150 lr | LED ring light | | | | | | 4245030 | ~~207.00~~ | 176.00 |
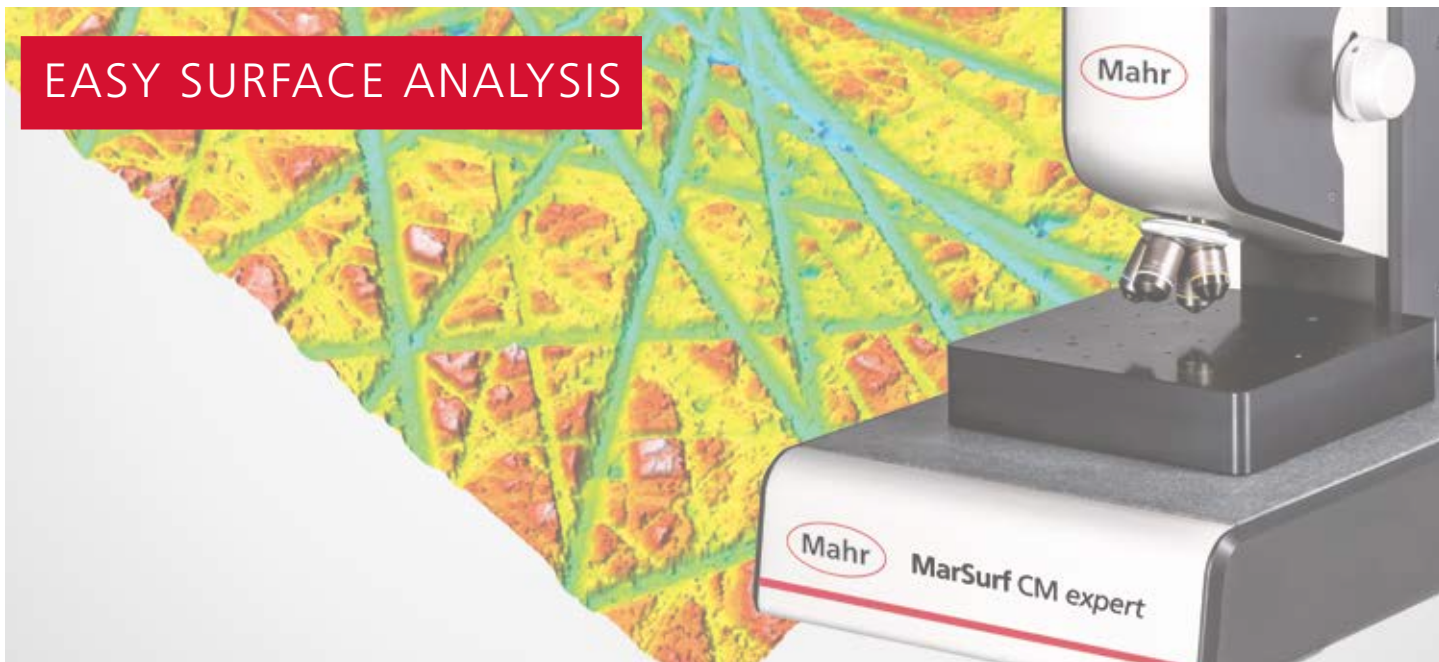
# Partner to production plants worldwide.
# Close to our customers.

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