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PARTNERS IN PRECISION

# OPTICAL INSTRUMENTS


## PROFILE PROJECTORS

baty Celebrating 90YEARS

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CASE STUDY

# Bowers & Wilkins

Bowers Group has provided world-renowned loudspeaker manufacturers Bowers & Wilkins with a retrofit upgrade solution for its Baty profile projector. Based in Worthing, West Sussex, Bowers & Wilkins is a well-known British firm producing a range of audio equipment, most notably loudspeakers.

Bowers & Wilkins' diamond dome tweeter loudspeakers contain small, exceptionally delicate parts are very hard to handle, and easily distorted with contact. As a leading name in the industry with exceptionally high standards, quality is very important to Bowers & Wilkins. The tolerance of every component made, therefore, must be met with exceptional accuracy. The components had proven difficult to measure with more traditional methods of measurement such as CMM machines or calipers, as these require the parts to be touched, therefore increasing the likelihood of the component becoming distorted, damaged, or out of tolerance.

## Repeatable and Accurate Measurements

As part of the Bowers Group, the team at Baty upgraded Bowers & Wilkins' existing Baty R14-GXL to the R14-FT2E, meaning that the company now benefits from the Fusion 2D touch screen DRO and optical edge detection not offered on the previous model.

**David Naylor, Quality Supervisor at Bowers & Wilkins said:**

> "Highly accurate, perfectly made components are essential for the quality of our products, and the Baty unit enables us to meet those standards by ensuring repeatable and accurate measurements."

## Enhancing the Functionality of the Profile Projector

The company previously had an R14 GXL Shadowgraph for over 25 years, but the DRO on the Baty R14-GXL had developed a small fault after decades of use, prompting Bowers & Wilkins to look into options for replacement.

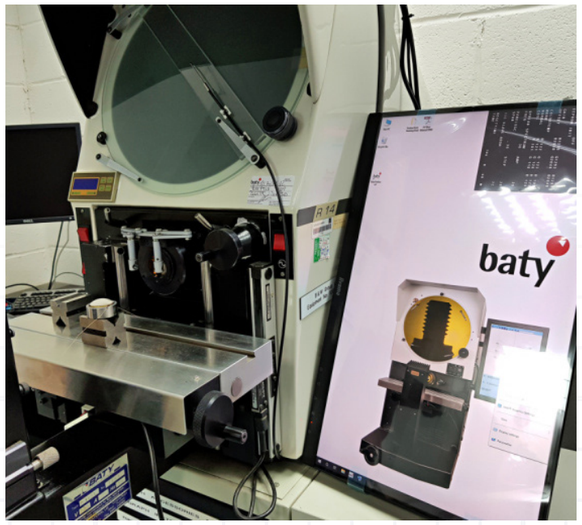
After receiving an email from Bowers Group regarding its retrofit services from the team at Baty, Bowers & Wilkins decided to upgrade its existing machine, dramatically enhancing the functionality, accuracy, and usability of the profile projector without the massive expense of a brand new machine.

> "We're very pleased with the retrofit" said David. "It has completely solved the problems with the old DRO and made the unit function like a new machine. It's still very user friendly, and the operators are able to use it comprehensively with fairly basic training."

## Significantly Increased Speed of Measurement

> "We'd never had the optical edge detection until the upgrade; it has significantly increased the speed of the measurement process, and the touch screen really is easy to use." It is visually very important that Bowers & Wilkins products are well made, and also very important for the sound quality."

**- David Naylor, Quality Supervisor**



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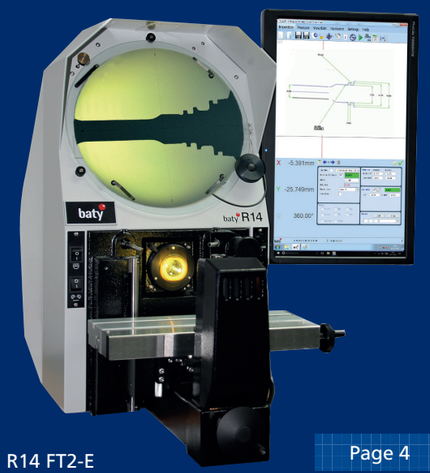


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## PROFILE PROJECTORS


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Bowers Group | sales@bowersgroup.co.uk | www.bowersgroup.co.uk

# Baty R14
## Profile Projector

### Features

- 340mm (14") screen with 90° crosslines and chart clips
- Profile illumination with halogen lamp and green filter
- Lens magnification choice: 10x, 20x, 50x
- Surface illumination (fibre optic)
- Helix adjustment of light source ± 7° for accurate thread form projection
- Cast Iron workstage with with machined slot for holding accessories
- Workstage measuring range of 175mm x 100mm (7" x 4")
- Digital angle measurement to 1 minute
- 0.5 micron resolution

### Available Options

- Internally fitted automatic edge sensor
- Swing over lamphouse to allow access the end face of longer parts to be measured using fibre optic surface illumination
- Various digital readout units are available to suit individual requirements
- Cabinet stand ensures a solid base and provides storage
- Range of workholding options. See page 18

### Visit our Website

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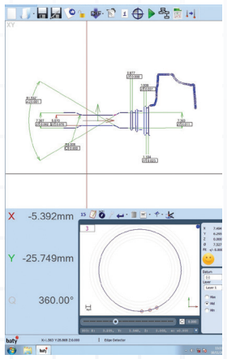
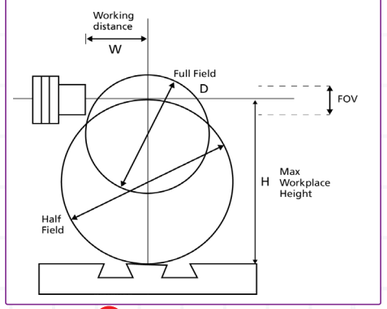
The Baty R14 bench mount profile projector with its 340mm screen combines high accuracy non-contact measurement and inspection with a large 175mm x 100mm measuring range.

Choice of digital readouts and optional automatic profile edge detection ensures that you can have the projector that fits your requirements. The horizontal light path configuration is ideally suited to turned machined parts that can be secured to the workstage using a range of optional accessories from the Baty fixture family. The compact and robust lightweight chassis makes the R14 ideal for workshop environments.


R14-FT2-E




**Horizontal Stage Systems**

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# Baty R14
## Profile Projector

Horizontal Bench Profile Projector XY DRO with 340mm diameter screen. Slotted cast iron workstage with 175mm lateral & 100mm vertical travel, 0.5 micron resolution as standard. The R14 is available with the following readout options:

### R14-XLS

Two axis digital readout featuring a colour LCD display, Absolute / Incremental modes, Zero reset, mm/inch & Radius/ Diameter conversion.

### R14-GXL

Geometric readout with 7" colour, touch screen, measurement functions for point, line, circle, slot, distance and angle. Automatic feature list and graphical view with program creation and tolerance function. Simple measurement result output through 9-pin RS232 & USB 2.0 ports.

### R14-FT2-E

A complete touch screen DRO with 2D Fusion software using the built-in automatic optical edge sensor. Measured features appear in a graphical view with custom dimensions and geometric tolerances, colour coded to display a pass or fail. This view can be exported as part of a suite of report options including tabulated dimensions, form error and historical SPC data. DXF compatible to create overlays for comparison to measured data or to automatically produce inspections from drawing files. Supplied with screen mounted optical edge sensor. Integrated Mini PC running Windows 11 and built in 22" touch screen monitor.

See page 16 for detailed description of the readouts available.

| Projector Type | R14 | | |
|---|---|---|---|
| Magnification | 10x | 20x | 50x |
| Field Of View FOV | 35mm | 18mm | 7mm |
| Working Distance (W) | 82mm | 38mm | 15mm |
| Maximum Half Field | 103mm | 103mm | 45mm |
| Working Diameter Full Field (D) | 120mm | 109mm | 31mm |

All dimensions in mm, ref diagram on page 4

| Lens Systems | |
|---|---|
| Code No | Description |
| 122-600-X10 | Lens system - magnification 10x |
| 122-601-X20 | Lens system - magnification 20x |
| 122-603-X50 | Lens system - magnification 50x |

| Baty R14 | | |
|---|---|---|
| Code No | Description | Functions |
| R14-XLS | Horizontal projector with Acu-rite DC102 readout | Basic X, Y and rotation measurement |
| R14-GXL | Horizontal projector with Metlogix MX200 touch screen display | Geometric measurement functions and tolerancing |
| R14-FT2-E | Horizontal projector with Fusion 2D touch screen DRO & optical edge detection | Windows 22" touch screen with full reporting and optical edge detection |

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# Baty R400
## Profile Projector

### Features

- 400mm (16") screen with 90° crosslines and chart clips
- Profile illumination is LED with a green filter
- Lens magnification choice: 10x, 20x, 50x and 100x
- Surface illumination (fibre optic)
- Helix adjustment of light source ± 7° for accurate thread form projection
- Cast Iron workstage with 2 machined slots for holding accessories
- Workstage measuring range of 300mm x 150mm (12" x 6")
- Digital angle measurement to 1 minute
- 0.5 micron resolution

### Available Options

- Internally fitted automatic edge sensor
- Swing over lamphouse to allow access the end face of longer parts to be measured using fibre optic surface illumination
- Various display units to suit individual requirements
- Cabinet stand ensures a solid base and provides storage
- Other options include foot switch control
- Range of workholding options. See page 18



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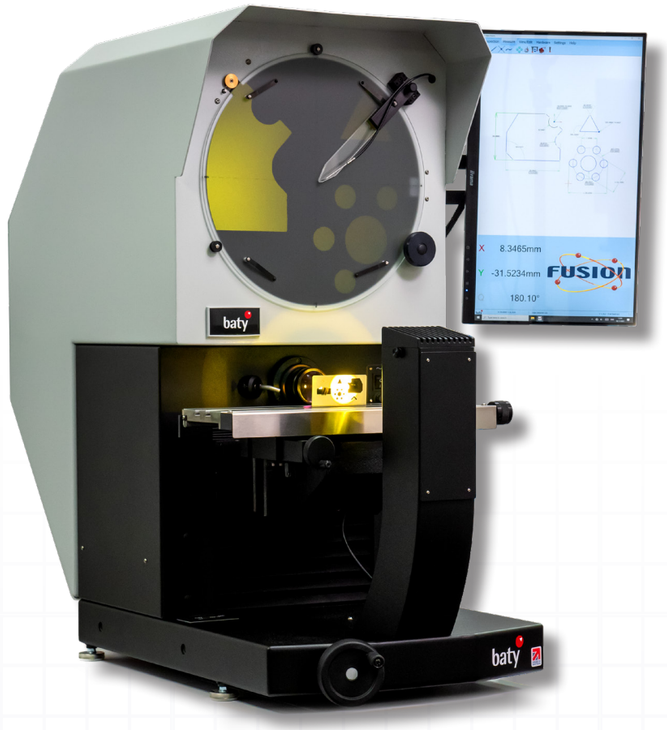
The Baty R400 bench mounted profile projector with its 400mm screen combines high accuracy non-contact measurement and inspection with a large 300mm x 150mm measuring range.

Choice of digital readouts and optional automatic profile edge detection ensures that you can have the projector that fits your requirements. The horizontal light path configuration is ideally suited to turned machined parts that can be secured to the workstage using a range of optional accessories from the Baty fixture family. The robust design of the R400 makes it suitable for both the shop floor and the standards room.




R400-FT2-E

# Baty R400
## Profile Projector

Horizontal Bench Profile Projector XY DRO with 400mm diameter screen. Twin slotted cast iron workstage with 300mm lateral & 150mm vertical travel. The R400 is available with the following readout options:

### R400-XLS

Two axis digital readout featuring a colour LCD display, Absolute / Incremental modes, Zero reset, mm/inch & Radius / Diameter conversion.

### R400-GXL

Geometric readout with 7" colour, touch screen, measurement functions for point, line, circle, slot, distance and angle. Automatic feature list and graphical view with program creation and tolerance function. Simple measurement result output through 9-pin RS232 & USB 2.0 ports.

### R400-FT2-E

A complete touch screen DRO with 2D Fusion software using the built-in automatic optical edge sensor. Measured features appear in a graphical view with custom dimensions and geometric tolerances, colour coded to display a pass or fail. This view can be exported as part of a suite of report options including tabulated dimensions, form error and historical SPC data. DXF compatible to create overlays for comparison to measured data or to automatically produce inspections from drawing files. Supplied with screen mounted optical edge sensor. Integrated Mini PC running Windows 11 and built in 22" touch screen monitor.

See page 16 for detailed description of the readouts available.

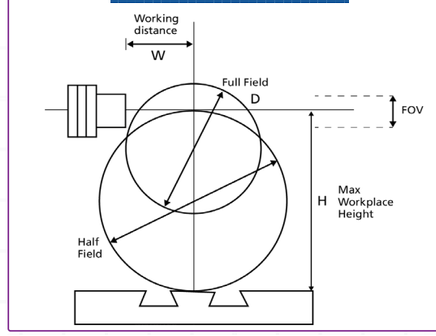
| Projector Type | R400 | | | |
|---|---|---|---|---|
| Magnification | 10x | 20x | 50x | 100x |
| Field Of View FOV | 40mm | 20mm | 8mm | 100mm |
| Working Distance (W) | 80mm | 82mm | 53mm | 43mm |
| Max Workpiece Height (H) | 184mm | 185mm | 185mm | 143mm |
| Working Diameter (D) | 179mm | 176mm | 147mm | 122mm |

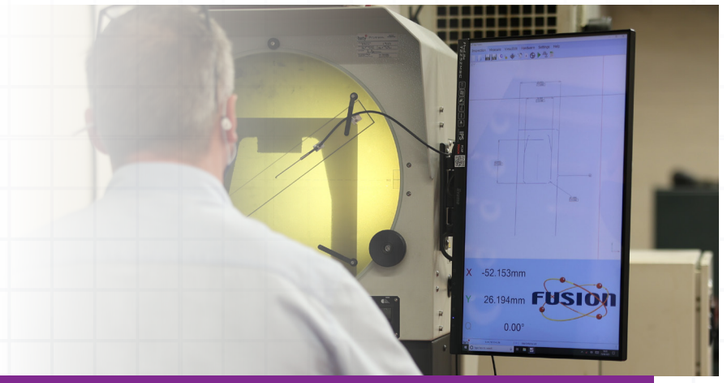
All dimensions in mm

| Lens Systems | |
|---|---|
| Code No | Description |
| R400-030-X10 | Lens system - magnification 10x |
| R400-031-X20 | Lens system - magnification 20x |
| R400-032-X50 | Lens system - magnification 50x |
| R400-033-X100 | Lens system - magnification 100x |



Horizontal Stage Systems




| Baty R400 | | |
|---|---|---|
| Code No | Description | Functions |
| R400-XLS | Horizontal projector with Acu-rite DC102 readout | Basic X, Y and rotation measurement |
| R400-GXL | Horizontal projector with Metlogix MX200 touch screen display | Geometric measurement functions and tolerancing |
| R400-FT2-E | Horizontal projector with Fusion 2D touch screen DRO & optical edge detection | Windows 22" touch screen with full reporting and optical edge detection |

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# Baty R600
## Profile Projector

### Features

- 600mm (24") screen with 90° cross lines and chart clips
- Heavy duty cast iron workstage with 450mm x 200mm (18" x 8") measuring range and 2 machined slots for workpiece holders
- Helix rotation of ± 15° on workstage for measuring threadforms or cutting tools
- Vertical 200mm (8") Y axis power driven with joystick control
- Lens magnification choice -10x, 20x, 50x
- 4 position rotating lens turret for ease of lens changing
- Profile illumination with halogen lamp and green filter
- Screen hood and curtains for use in bright ambient light conditions
- Surface illumination (fibre optic)
- Digital angle measurement to 1 minute
- 0.5 micron resolution

### Available Options

- Internally fitted automatic edge sensor to allow the use of overlay charts on an unobstructed screen
- Motorised X axis with control added to existing joystick
- Various digital readout units are available to suit individual requirements
- Range of workholding options. See page 18

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The Baty R600 with its 600mm (24") screen and high specification presents the capability to make simple comparative non-contact measurement through to complex programmed measuring sequences with SPC capability and automatic edge detection.

The horizontal light beam configuration is ideally suited to large machined or turned workpieces for mounting in vee blocks and centres.


R600-FT2-E

# Baty R600
## Profile Projector

Horizontal light path, floor standing Profile Projector with XY DRO and 600mm diameter screen. Slotted cast iron workstage with 450mm lateral & 200mm vertical travel, as well as 0.5-micron resolution as standard. The R600 is available with the following readout options:

### R600-XLS

Two axis digital readout featuring a colour LCD display, Absolute / Incremental modes, Zero reset, mm/inch & Radius / Diameter conversion.

### R600-GXL

Geometric readout with 7" colour, touch screen, measurement functions for point, line, circle, slot, distance and angle. Automatic feature list and graphical view with program creation and tolerance function. Simple measurement result output through 9-pin RS232 & USB 2.0 ports.

### R600-FT2-E

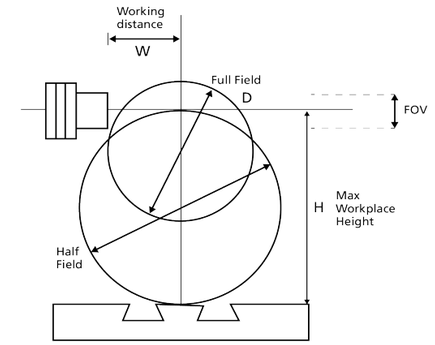
A complete touch screen DRO with 2D Fusion software using the built-in automatic optical edge sensor. Measured features appear in a graphical view with custom dimensions and geometric tolerances, colour coded to display a pass or fail. This view can be exported as part of a suite of report options including tabulated dimensions, form error and historical SPC data. DXF compatible to create overlays for comparison to measured data or to automatically produce inspections from drawing files. Supplied with screen mounted optical edge sensor. Integrated Mini PC running Windows 11 and built in 22" touch screen monitor.

See page 16 for detailed description of the readouts available.

| Projector Type | R600 | | |
|---|---|---|---|
| Magnification | 10x | 20x | 50x |
| Field Of View FOV | 60mm (2.36") | 30mm (1.8") | 12mm (.47") |
| Working Distance (W) | 135mm (5.31") | 132mm (5.19") | 93mm (3.15") |
| Max Workpiece Height (H) | 343mm (13.50") | 343mm (13.50") | 343mm (13.50") |
| Working Diameter | 343mm (13.50") | 343mm (13.50") | 343mm (13.50") |

All dimensions in mm / (inches)

**Horizontal Stage Systems**




**Lens Systems**

| Code No | Description |
|---|---|
| 54-650-X10 | Lens system - magnification 10x |
| 202-1852-X20 | Lens system - magnification 20x |
| 202-1854-X50 | Lens system - magnification 50x |

**Baty R600**

| Code No | Description | Functions |
|---|---|---|
| R600-XLS | Horizontal projector with Acu-rite DC102 readout | Basic X, Y and rotation measurement |
| R600-GXL | Horizontal projector with Metlogix MX200 touch screen display | Geometric measurement functions and tolerancing |
| R600-FT2-E | Horizontal projector with Fusion 2D touch screen DRO & optical edge detection | Windows 22" touch screen with full reporting and optical edge detection |

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# Baty SM300
## Profile Projector

### Features

- Workstage measuring range of 150mm (6") x 50mm (2")
- Highly versatile and easy to operate
- Large travel range as standard
- Linear scale stage with 0.0005mm resolution
- Fine ground glass screen for clear image
- Screen complete with cross hair lines and chart clips
- Built-in profile and surface illumination
- Projection lens 10x with half reflecting mirror
- Projection lens 20x with half reflecting mirror
- Projection lens 50x with half reflecting mirror
- Projection lens 100x with half reflecting mirror
- Display-readout unit GMR included in standard delivery

### Available Options

- Rotary table 360°
- Swivel centre support
- Holder with clamp
- V-block with clamp
- Blue filter



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300mm screen vertical light path projector with multi-function readout unit and printer.

Robust design with full geometric measuring functionality ideal for the shop floor.


SM300-GMR

# Baty SM300
## Profile Projector

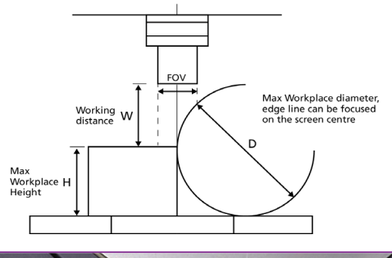
Vertical light path, bench mounted Profile Projector with XY DRO and 300mm (12") diameter screen. Linear scale, glass workstage with 150mm lateral & 50mm (6" x 2") longitudinal travel, as well as 0.5-micron resolution as standard.

### GMR Readout

The Baty GMR readout features geometric measuring functions including skew, cartesian/polar coordinates, mm/inch selection and angle readout, all on an easy-to-read LCD screen.

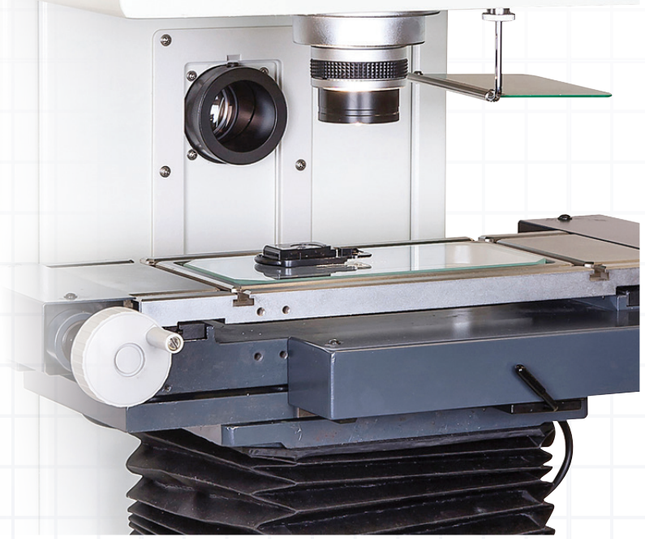

| Projector Type | SM300 | | | |
|---|---|---|---|---|
| Magnification | 10x | 20x | 50x | 100x |
| Field Of View FOV | 30mm | 15mm | 6mm | 3mm |
| Working Distance W | 77.7mm | 44.3mm | 24.5mm | 25.3mm |
| Max Workpiece Height H | 80mm | 80mm | 80mm | 80mm |
| Max Workpiece Diameter D | 160mm | 130mm | 55mm | 60mm |

**Vertical Stage Systems**




| Lens Systems | |
|---|---|
| **Code No** | **Description** |
| W-SM300-50 | Lens system - magnification 10x, with reflecting mirror |
| W-SM300-55 | Lens system - magnification 20x, with reflecting mirror |
| W_SM300-60 | Lens system - magnification 50x, with reflecting mirror |
| w-SM300-65 | Lens system - magnification 100x, with reflecting mirror |

| Baty SM300 | |
|---|---|
| **Code No** | **Description** |
| SM300-GMR | Vertical projector with geometric readout |





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# Baty SM350
## Profile Projector

### Features

- 350mm dia (14") screen
- Digital angle measurement to 1 minute
- Built in helix adjustment
- Sturdy all-steel design
- Heavy duty cross roller bearings
- Backlash free plain rod drives with rapid traverse and fine adjust
- Easy-view vertical screen
- Lens magnification choice: 10x, 20x, 50x
- Large stage travel 250mm x 125mm (10" x 5")
- Rotating chart clips
- Fibre optic illumination for surface measurement
- 0.5 micron resolution

### Available Options

- Automatic screen-mounted edge sensing (FT2-E model only)
- Heavy duty cabinet stand
- 3-position rotating lens turret
- Range of workholding options. See page 18



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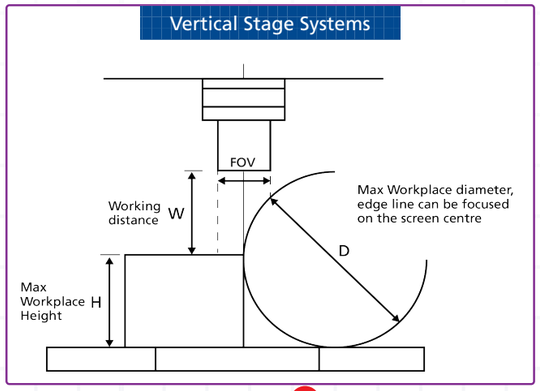
This vertical light path 350mm / 14" diameter screen bench projector features a large, heavy duty high precision workstage with 250mm x 125mm (10" x 5") measuring range and 0.5 micron resolution. Another feature is the option of a three lens turret for instant lens changes.


SM350-FT2-E

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# Baty SM350
## Profile Projector

Vertical Bench Profile Projector XY DRO with 350mm diameter screen. Complete with 250mm x 125mm (10" x 5") work stage with ultra smooth plain rod drives & rapid traverse on BOTH axis, 0.5 micron resolution as standard. Digital Angle Protractor & 2 'XLS' AXIS DIGITAL DISPLAY. Surface illumination included. The SM350 is available with the following readout options:

### SM350-XLS

The XLS is a simple two axis digital readout featuring a colour LCD display, Absolute / Incremental modes, Zero reset, Mm/inch & Radius / Diameter conversion.

### SM350-GXL

Vertical Bench Profile Projector 2D DRO with 340mm diameter screen. Complete with SA-2510-05, 250mm x 125mm workstage with ultra smooth plain rod drives & rapid traverse on BOTH axis, 0.5 micron resolution as standard. Digital Angle Protractor & 2 axis 'GXL' digital display with GEOMETRIC FUNCTIONS. Surface illumination.

### SM350-FT2-E

A complete touch screen DRO with 2D Fusion software using the built-in automatic optical edge sensor. Measured features appear in a graphical view with custom dimensions and geometric tolerances, colour coded to display a pass or fail. This view can be exported as part of a suite of report options including tabulated dimensions, form error and historical SPC data. DXF compatible to create overlays for comparison to measured data or to automatically produce inspections from drawing files. Supplied with screen mounted optical edge sensor. Integrated Mini PC running Windows 11 and built in 22" touch screen monitor.

See page 16 for detailed description of the readouts available.



| Projector Type | SM350 | | |
|---|---|---|---|
| Magnification | 10x | 20x | 50x |
| Field Of View FOV | 35mm | 17mm | 7mm |
| Working Distance | 84mm | 37mm | 17mm |
| Max. Half Field | 220mm | 162mm | 51mm |
| Working Diameter Full Field | 171mm | 130mm | 37mm |
| Max. Height Object | 114mm | 113mm | 111mm |

Ref diagram on page 12

| Lens Systems | |
|---|---|
| Code No | Description |
| 122-600-X10 | Lens system - magnification 10x |
| 122-601-X20 | Lens system - magnification 20x |
| 122-603-X50 | Lens system - magnification 50x |

| Baty SM350 | | |
|---|---|---|
| Code No | Description | Functions |
| SM350-XLS | Vertical projector with Acu-rite DC102 readout | Basic X, Y and rotation measurement |
| SM350-GXL | Vertical projector with Metlogix MX200 touch screen readout | Geometric measurement functions and tolerancing |
| SM350-FT2-E | Vertical projector with Fusion 2D touch screen DRO & optical edge detection | Windows 11 22" touch screen with full reporting and optical edge detection |

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# Baty SM20
## Profile Projector

### Features

- 500mm (20") screen with 90 degree crosslines and chart clips
- Angled screen for easy viewing
- Profile illumination with halogen lamp and green filter
- Surface illumination through twin fibre optics for bright full colour surface inspection
- Single lens mounting
- Lens magnification choice: 10x, 20x, 50x
- Helix adjustment of light source for accurate thread form projection
- Large stage travel 250mm x 125mm (10" x 5")
- Digital angle measurement
- 0.5 micron resolution

### Available Options

- Screen hood and curtains with generous proportions for use in bright ambient light conditions
- 3 position lens turret for easy lens changing
- Range of workholding options



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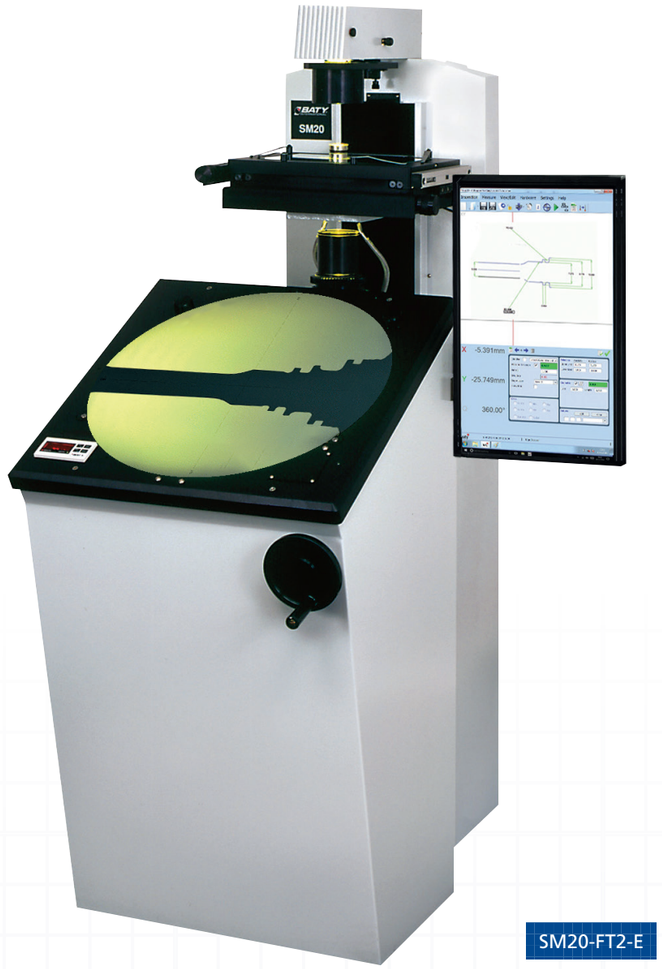
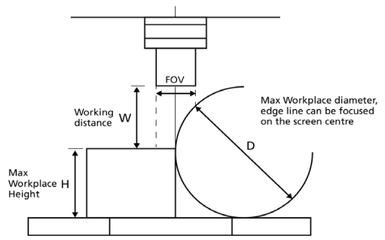
The Baty SM20 is a vertical light path floor standing profile projector with a 500mm / 20" screen which features a large heavy duty high precision workstage with 250mm x 125mm measuring range and a 0.5 micron resolution.




SM20-FT2-E

Vertical Stage Systems

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# Baty SM20
## Profile Projector

Vertical light path, floor standing Profile Projector with XY DRO and 500mm diameter screen Linear scale, glass workstage with 250mm lateral & 125mm longitudinal travel, as well as 0.5-micron resolution as standard. The SM20 is available with the following readout options:

### SM20-XLS

Two axis digital readout featuring a colour LCD display, Absolute / Incremental modes, Zero reset, mm/inch & Radius / Diameter conversion.

### SM20-GXL

Geometric readout with 7" colour, touch screen, measurement functions for point, line, circle, slot, distance and angle. Automatic feature list and graphical view with program creation and tolerance function. Simple measurement result output through 9-pin RS232 & USB 2.0 ports.

### SM20-FT2-E

A complete touch screen DRO with 2D Fusion software using the built-in automatic optical edge sensor. Measured features appear in a graphical view with custom dimensions and geometric tolerances, colour coded to display a pass or fail. This view can be exported as part of a suite of report options including tabulated dimensions, form error and historical SPC data. DXF compatible to create overlays for comparison to measured data or to automatically produce inspections from drawing files. Supplied with screen mounted optical edge sensor. Integrated Mini PC running Windows 11 and built in 22" touch screen monitor.

See page 16 for detailed description of the readouts available.

| Projector Type | SM20 | | |
|---|---|---|---|
| Magnification | 10x | 20x | 50x |
| Condenser | L | L | S |
| Field of view | 50mm | 25mm | 10mm |
| Max. Diameter D | 200mm | 200mm | 180mm |
| Max. Focal Plane Height (Profile lighting) | 205mm | 203mm | 240mm |
| Max. End Mill Height (surface lighting) | 150mm | 153mm | 150mm |

Ref diagram on page 14

| Lens Systems | |
|---|---|
| Code No | Description |
| 54-650-X10 | Lens system - magnification 10x |
| 202-1852-X20 | Lens system - magnification 20x |
| 202-1854-X50 | Lens system - magnification 50x |

| Baty SM20 | | |
|---|---|---|
| Code No | Description | Functions |
| SM20-XLS | Vertical projector with Acu-rite DC102 readout | Basic X, Y and rotation measurement |
| SM20-GXL | Vertical projector with Metlogix MX200 touch screen readout | Geometric measurement functions and tolerancing |
| SM20-FT2-E | Vertical projector with Fusion 2D touch screen DRO & optical edge detection | Windows 22" touch screen with full reporting and optical edge detection |



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# Baty Readout Options



All units are fully compatible with our full range of profile projectors, allowing for upgrades as required, excluding the SM300 that is only available with the GMR readout.

## XLS Readout

The new Acu-rite DRO-100 Series LCD display unit. A simple two axis digital readout for point to point X,Y or R,A measurements with absolute/incremental readings. Functions also include a zero reset, an instant inch/mm conversion and an instant radius/diameter conversion.


XLS Readout

## GXL Readout

As XLS with geometric functions for skew alignment, angle, radius, point, line, circle. Automatic feature list and graphical view. Macro programming facility guides the operator through the measurement process. Feature tolerancing and standard report printout. Footswitch compatible.

- Graphical display of measured feature
- Radius, angle, line, point, skew
- Inch, metric, polar, cart
- Data output to PC/printer
- Store inspection routines to prompt operator
- Tolerancing
- Multi-language menu
- On-screen help


GXL Readout

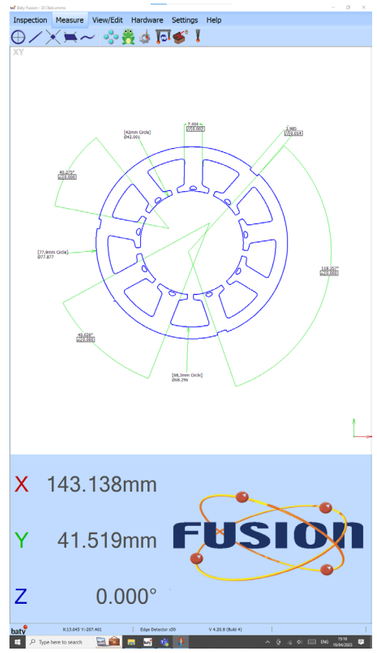
## Fusion Touch Screen Readout

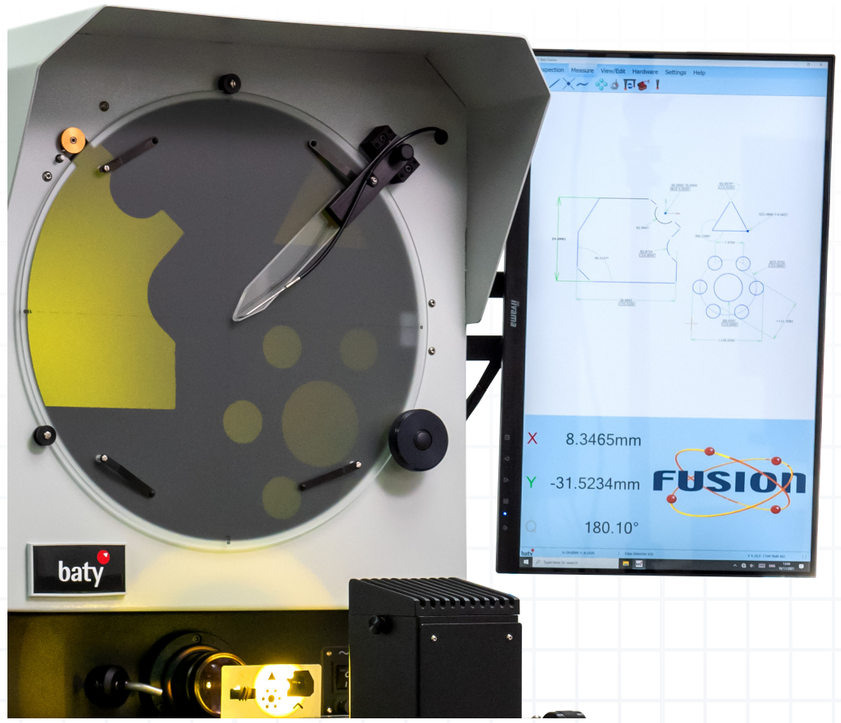
The **FT2-E** is our comprehensive touch screen DRO running 2D Fusion software, using a built-in optical edge detector to automatically take data points on the fly. A datapoint will automatically be taken whenever an edge on the projected image is passed under the screen-mounted fibre optic sensor, or the optional internally mounted edge sensor on the R400. Points can also be taken manually via the touchscreen, or the optional footswitch.

The software allows easy dimensioning between features, for quick and accurate measurement of distances, angles, and other geometric relationships. Fusion can also generate comprehensive reports with the measured data, including tabulated dimensions, graphic details and SPC. These reports can be viewed in the software, opened it Excel or data can be exported as a CSV file.

Importing DXF overlays allows operators to compare live measurements on parts to drawings or golden samples to easily verify their accuracy. Using Leapfrog allows users to measure parts larger than the stage, by stitching together smaller sections of the part to view or dimension the full part in one inspection.

The FT2-E offers our most comprehensive suite of features to maximise the capability of our profile projectors, making it a powerful tool for precision and inspection tasks in any industry.




### Technical info

For more information please go to our website using the QR code.

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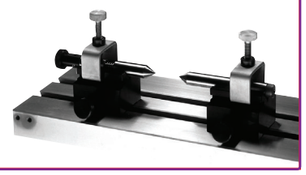
# Options & Accessories
## Profile Projectors

SA-527

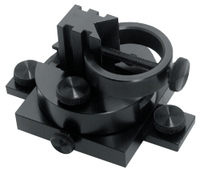
SA-250

52-602

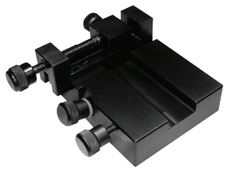
SA-256 / SA-258



52-701 / 52-604

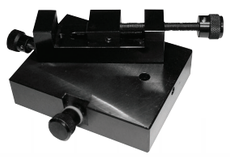


SA-152

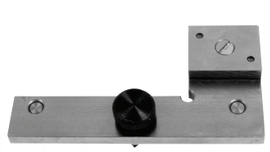


52-600 / 52-603

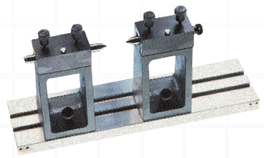
SA-260



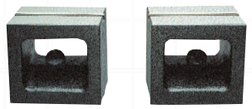
52-605



SA-542 Large V Blocks and Centres



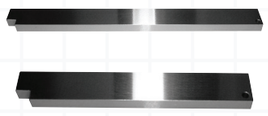
SA-543 Riser Blocks



R600 only

Rotary Glass Stage SA-245-2

SA-370 Back Stop



SA-371 Side Stop

FM-2510 Open Frame Fixturing

SM350 & SM20 stages only







# Options & Accessories
## Profile Projector

| R14 / R400 Accessories | |
|---|---|
| **Code No** | **Description** |
| SA-328-KIT | Cabinet stand |
| SA-250 | Iris diaphragm |
| SA-256 | V blocks |
| SA-258 | Spring loaded centres |
| SA-259 | Riser blocks 38mm ( 1 1/2") for SA-256 |
| SA-152 | Vice stage and vice |
| SA-260 | Swivel vice |
| SA-276 | Single vee and clamp (Vee parallel to optic axis) |
| SA-153 | Fixture base |
| SA-527 | Glass plate work holder |

| R600 Accessories | |
|---|---|
| **Code No** | **Description** |
| SA-551 | Iris diaphragm for SM350, R600 and SM20 |
| SA-542 | Large vee blocks and centres |
| SA-543 | Riser blocks |
| SA-527 | Glass plate work holder |
| SA-606 | Screen chart rest bar |

| Fixture Family Accessories | |
|---|---|
| **Code No** | **Description** |
| 52-600 | Self centering vice |
| 52-601 | Dual axis vee block and clamp to Ø 15mm |
| 52-602 | Dual axis V block and clamp to Ø 30mm |
| 52-603 | Precision rotary base |
| 52-604 | Universal base |
| 52-605 | Precision ground steel alignment feature |
| 52-701 | Dual axis vee block fitted with side base |

| SM350 / SM20 Accessories | |
|---|---|
| **Code No** | **Description** |
| SA-245-2 | Rotary glass stage |
| SA-370 | Back stop |
| SA-371 | Side stop |
| FM-2510 | Open frame fixturing for 2510 stage |
| SA-551 | Iris diaphragm for SM350, R600 & SM20 |

baty

# Reprorubber Metrology Grade Casting Material

## Why choose Reprorubber?

- Advantages over other hard-copy replicating materials include:
- Quick casting – zero shrinkage
- No release agent required – will not stick to part
- Surface finish replication is exact with excellent optical properties easily checked on an optical comparator or video inspection machine
- Copies can be re-copied from original mould
- Replicas are permanent – will not leach out, ooze out, or gas out
- No more 16 hour cure time as with RTV silicones
- More accurate than all other RTV compounds



## Applications

You can take impressions of:

- All metals
- Non metals
- Paper or cardboard items
- Wood, marble etc
- All plastics
- Rubber
- Ceramic and glass items

## Other Uses Include

- Prototypes of rubber type components such as gaskets, washers, etc
- Making joints where flexibility is required
- As a mask for high temperature plasma spray of metallic coatings
- Fixturing where semi-rigid structure is desired

## Visit our Website

For more information please go to our website using the QR code.

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## Original Reprorubber® Thin Pour Final Colour: Light Green

For internal-shape applications where a thin pour will completely fill the cavity without voids. A complete replica casting is quickly formed.

- Pour equal parts of the catalyst and base into the mixing cups and stir for 30 seconds until combined. This is now active and must be poured within 4-4.5 minutes
- Pour the mixture into the cavity and wait for 8-10 minutes for it to cure
- Kits include graduated mixing cups, wooden spatulas and instructions

## Original Reprorubber® Quick Setting Putty Final Colour: Light Blue

Excellent for moulding over external shapes, and can also be used for internal cavities where pressure can be applied or a weighted object can be placed on top.

- Roll two equal-sized balls of catalyst putty and base putty and simply knead them together like dough for 30 seconds.
- You can manipulate the putty for 1-2 minutes. Spread over the master, pushing down with fingers and wait for 8-10 minutes for it to cure

## New Reprorubber® Orange – Medium Body Pre-filled Cartridges - Final Colour: Orange

New Medium Body (Medium Viscosity – Medium Durometer) casting material ideal for both internal and external applications. Disposable pre-filled dual barrel 50ml cartridges can quickly dispense casting material utilising the REPRO-MIX II Gun System.

- The catalyst and base are extruded from the double-barrelled cartridge in a uniform mixture
- Cover the part with the mixture, the paste can be manuplulated for 1-2 minutes
- Cure time is 5-6 minutes

baty



# Reprorubber Metrology Grade Casting Material

## Quick Dispense Cartridge System Kit

Contains everything you need to easily create highly accurate, zero shrinkage replicas.

Each kit includes 1 each:

- Repro-Mix II reusable dispensing gun
- 6 each 50ml pre-filled Reprorubber disposable cartridges
- 15 disposable mixing nozzles
- 2 micro injector snap-on nozzles
- Deluxe fitted carrying case

## Physical advantages over the hard-copy replicas

- Replica is easy to remove – even if they are in under cuts or grooves
- Cross-sectioning of replica is easily accomplished with a knife or razor
- It can then be checked on an optical comparator or microscope
- Surface finish replication is exact with excellent optical properties
- Reprorubber copies can be re-copied (copy from a 'female mould' yields a male-shaped replica)
- Replicas are permanent – will not leach or ooze out nor gas out
- No more 16 hour cure time as with RTV silicones
- More accurate than all other RTV compounds
- Reprorubber putty will withstand up to 600°F (or more)




16305

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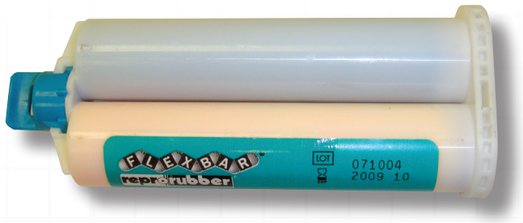
Bowers Group | sales@bowersgroup.co.uk | www.bowersgroup.co.uk

# **Reprorubber** Metrology Grade Casting Material

| Projector Type | Reprorubber Thin Pour | Reprorubber Medium Body Orange | Reprorubber Quick Setting Putty |
|---|---|---|---|
| Mixing Time | 30 seconds | | 30-60 seconds |
| Manipulation Time | 4-4.5 minutes | 2.5 minutes | 2.5-3 minutes |
| Setting Time (at room temperature) | 8-9 minutes | 5-6 minutes | 5-6.5 minutes |
| Permanent Deformation | 0.2% | 0.3% | 0.3% |
| Dimensional Stability | less than 0.50% | less than 0.40% | less than 0.25% |
| Tear Strength | 44 pounds per sq inch | 300 pounds per sq inch | 105 pounds |
| Elongation | 60% at break | 70% at break | 6.3% at break |
| Durometer (Shore A-2) | 30 (at 15 minutes) | 40 (at 10 minutes) | 50 (at 7 minutes) |
| Temperature Stability | 1 week @ 23°C (72°F) | 1 week @ 23°C (72°F) | 1 week @ 23°C (72°F) |
| Detail Reproduction | Excellent | Excellent | Excellent |




16301




16306

# **Reprorubber** Metrology Grade Casting Material

| Reprorubber | |
|---|---|
| **Ordering Complete Kits:** | |
| **Code No** | **Description** |
| 16300 | Reprorubber Thin Pour (Green) Quick Dispense Cartridge System Kit Complete |
| 16305 | Reprorubber Orange (Medium Body) Quick Dispense Cartridge System Kit Complete |
| 16309 | Reprorubber Combo Kit Quick Dispense Cartridge System Kit, Includes 3 each Thin Pour & 3 each Orange |
| **Ordering Original Mix Your Own Kits: Original Reprorubber® Thin Pour - Final Colour: LIGHT GREEN** | |
| 16116 | Thin Pour 130ml Mix Your Own Trial Kit - Final Colour: Light Green |
| 16135 | Thin Pour 380ml Mix Your Own Kit - Final Colour: Light Green |
| **Ordering Original Mix Your Own Kits: Original Reprorubber® Quick Setting Putty - Final Colour: LIGHT BLUE** | |
| 16129 | 220ml Trial Quick Setting Putty Mix Your Own Kit - Final Colour: Light Blue |
| 16130 | 1 3/4 lb (520ml) Introductory Mix Your Own Kit - Final Colour: Light Blue |
| 16131 | 7lb (2150ml) Economy Mix Your Own Kit - Final Colour: Light Blue |
| **System Refills** | |
| 16301 | Reprorubber Thin Pour (Green) 50ml Cartridge, 1 each |
| 16302 | Reprorubber Thin Pour (Green) 50ml Cartridges, 6 pack |
| 16306 | Reprorubber Orange (Medium Body) 50ml Cartridge, 1 each |
| 16307 | Reprorubber Orange (Medium Body) 50ml Cartridges, 6 pack |
| 16311 | Repro-Mix II Dispensing Gun (reusable) |
| 16313 | Repro-Mix II Helix Mixing Nozzles, 15 Pack |
| 16316 | Repro-Mix II Helix Mixing Nozzles, 100 Pack |
| 16315 | Quick Dispense Cartridge System Fitted Case (without contents) |
| 16314 | Micro Injector Snap-On Nozzle, Pack of 15 |

# Made in Britain

Baty has been in business since 1932 manufacturing optical profile projectors and latterly, camera based vision and multi-sensor systems with CNC control. In 2017, Baty unveiled the FT2-E readout system designed specifically for profile projectors. The FT2-E quickly became Baty's best selling readout option and is now available in a range of retrofit kits for other popular projector brands.

2018 unveiled the Venture XT, the latest update to their range of bench top high precision multi-sensor measuring machines. **New for 2023 is the Venture Plus XT** machine. A large format bridge style multi-sensor machine using the latest 'driveless' linear motor technology and with a first term accuracy of 1.9 microns.

Baty's range of optical profile projectors, vision and multi-sensor systems are still manufactured in England in accordance with ISO 9001:2008 and backed by their team of factory trained service Engineers.



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