

ISO 9001



# TESA-SCOPE PROFILE PROJECTORS

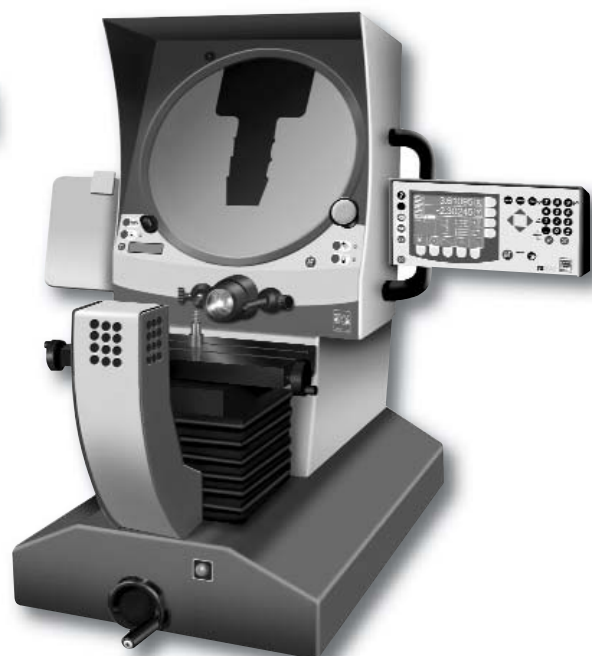


**300V AND 300V PLUS**

## *Reliable and dependable*

*The high quality of the projected image provides the operator with reliability and dependability for accurate measurements.*

*A wide choice of accessories adds to the remarkable flexibility of these optical systems with modular design. The multiple configurations allow any geometric part feature to be easily measured.*



**355 H AND 355H PLUS**



**500V 5x AND 500V 2 OBJ**

info  
PRODUKT  
PRO



## TESA-SCOPE 300V AND 300V PLUS





*Designed for inspecting parts having a flat surface as well as components used in the micromechanics.*

- Profile projectors with vertical light illumination.
- 360° rotary frosted glass screen having a 300 mm diameter. Crossline reticules 30°, 60° and 90°. Also with 4 overlay chart clips.
- Built-in digital protractor to show the screen rotation.
  - Minute degrees or decimal degrees, RAZ ABS/INC
- Profile illumination with green filter included.
  - Enhances image contrast, makes measurement easier and reduces all effects due to the operator.
- Adjustable fiber optic surface illumination for a perfect image projection.
- System «Save Lamp».
  - Automatic shut down of the bulbs when the projector is not used for a few minutes (thus increasing the life of the bulbs by 5).
- Objectives with bayonet mount for quick change.
- Measuring tables moving crosswise, each equipped with an opto-electronic system that uses an incremental scale with a resolution to 0,001 mm.

#### Measuring spans:


- 200 x 100 for the standard model
  - 300 x 150 for the model «Plus»
  - X-axis fitted with a clutch mechanism for fast displacement
  - Control handle for right or left-handed operator allowing easy displacement in the X-axis
  - Workload capacity up to 10 kg with no loss of accuracy
- Papersheet holder, lateral.
  - Provided with serial number, TESA calibration certificate, declaration of conformity, User's manual.
  - Each projector comes entirely mounted. Objectives must be ordered separately.
  - Swiss Made.

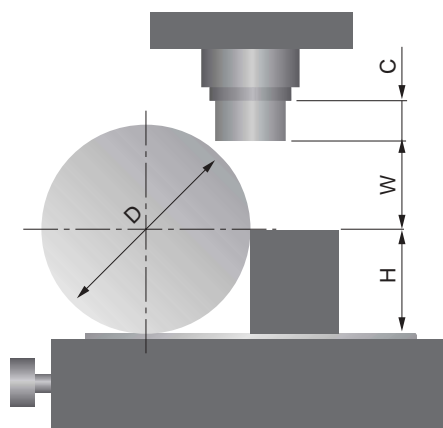
## Delivery Programme

		Main Part	Measuring tables		Digital readouts		
			X=200 mm Y=100 mm	X=300 mm Y=150 mm	TS100	TS200	TS200-E
							
TESA-Scope 300V	06830001	●	●		●		
TESA-Scope 300V	06830002	●	●			●	
TESA-Scope 300V	06830003	●	●				●
							
TESA-Scope 300V Plus	06830004	●		●	●		
TESA-Scope 300V Plus	06830005	●		●		●	
TESA-Scope 300V Plus	06830006	●		●			●

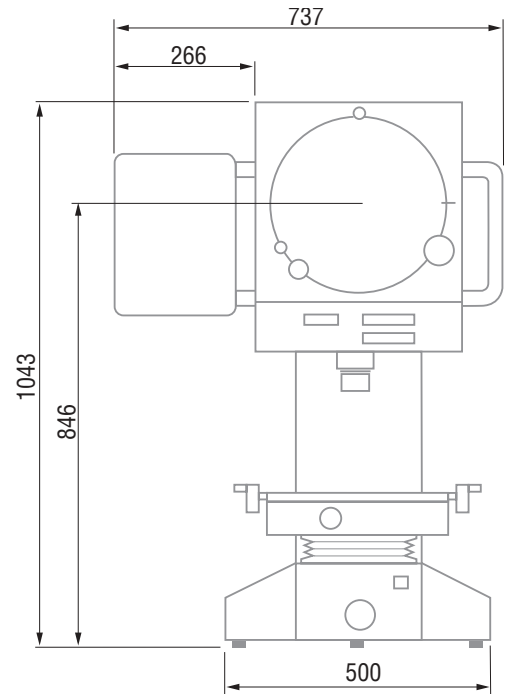
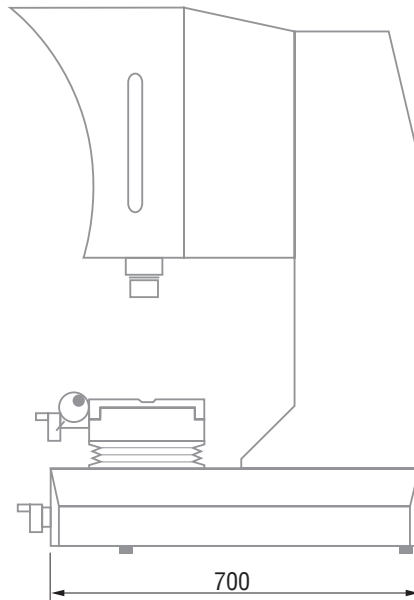
For information on every digital readout, see page 11.

## Telecentric objectives

Magnifications	10x	20x	25x	31,25x	50x	100x
	06860001	06860002	06860003	06860004	06860005	06860006
Measuring span	30 mm	15 mm	12 mm	9,6 mm	6 mm	3 mm
Working distance (W)	80 mm	82 mm	70 mm	56 mm	53 mm	43 mm
Max. height (H)	83 mm	83 mm	83 mm	83 mm	83 mm	83 mm
Max. diameter (D)	166 mm	166 mm	166 mm	166 mm	166 mm	166 mm
Objective length (C)	37 mm	35 mm	47 mm	61 mm	64 mm	74 mm



## Overall dimensions



## TECHNICAL DATA

### Main part

Material  
 Measuring systems  
 Resolution  
 Precision for each coordinate direction  
 Image accuracy  
 Profile illumination  
 Surface illumination with adjustable fiber optic  
 Operating temperature range  
 Working temperature range  
 Max. perm. relative humidity  
 Power supply  
 Mass  
 Degree of protection  
 Electromagnetic compatibility  
 Provided fully mounted with

Manufactured in Switzerland

### Small measuring table

Material  
 Surface area  
 Measuring span  
 Max. load capacity

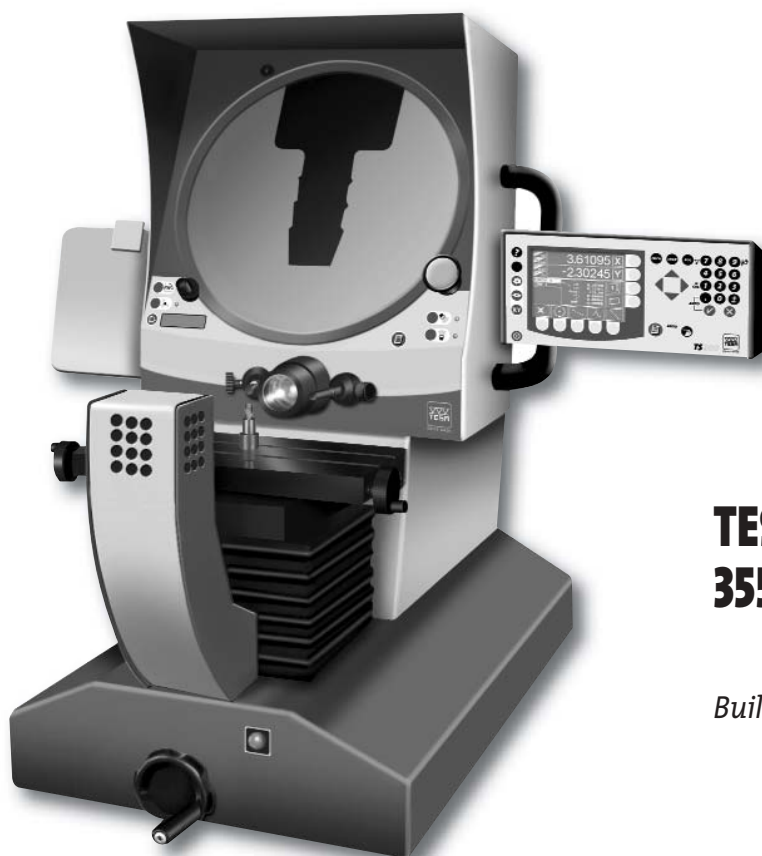
### Large measuring table

Material  
 Surface area  
 Measuring span  
 Max. load capacity

Heavy duty all steel structure  
 Opto-electronic incremental scales.  
 0,001 mm  
 $(4,5 + L/40) \mu\text{m} \leq 8 \mu\text{m}$  (L in mm)  
 $\pm 0,05 \%$  with profile illumination;  
 $\pm 0,10 \%$  with surface illumination  
 24 V – 150 W light source with thermal filter  
 24 V – 200 W light source with thermal filter  
 10°C to 40°C  
 19°C to 21°C (for guaranteeing accuracy)  
 80%, non-condensing  
 115 to 230 Vac  $\pm 10\%$ ; 50 to 60 Hz  
 110 kg  
 IP40  
 CEI 61010 – EN 60204 – EN 61326-1  
 Serial number, declaration of conformity,  
 TESA inspection report

Anodized aluminium  
 350 x 210 mm (X/Y)  
 200 x 100 mm (X/Y)  
 10 kg

Anodized aluminium  
 440 x 282 mm (X/Y)  
 300 x 150 mm (X/Y)  
 10 kg



## TESA-SCOPE 355H AND 355H Plus





*Built for round part inspection*

- Profile projectors with horizontal light illumination
- 360° rotary frosted glass screen having a 355 mm diameter. Crossline reticules 30°, 60° and 90°. Also with 4 overlay clip charts.
- Built-in digital protractor to show the screen rotation.
  - Minute degrees or decimal degrees, RAZ ABS/INC
- Profile illumination with green filter included.
  - Enhances image contrast, makes measurement easier and reduces all effects due to the operator.
- Adjustable fiber optic surface illumination for a perfect image projection.
- System «Save Lamp».
  - Automatic shut down of the bulbs when the projector is not used for a few minutes (thus increasing the life of the bulbs by 5).
- Objectives with bayonet mount for quick change.
- Measuring tables moving crosswise, each equipped with an opto-electronic system that uses an incremental scale with a resolution to 0,001 mm.

### Measuring spans:


- 200 x 100 for the standard model
- 300 x 100 for the model «Plus»
- X-axis fitted with a clutch mechanism for fast displacement.
- Control handle for right- or left-handed operator allowing easy displacement in the X-axis
- Workload capacity up to 10 kg with no loss of accuracy.
- Papersheet holder, lateral.
- Provided with serial number, TESA calibration certificate, declaration of conformity, User's manual.
- Each projector comes entirely mounted. Objectives must be ordered separately.
- Swiss Made.

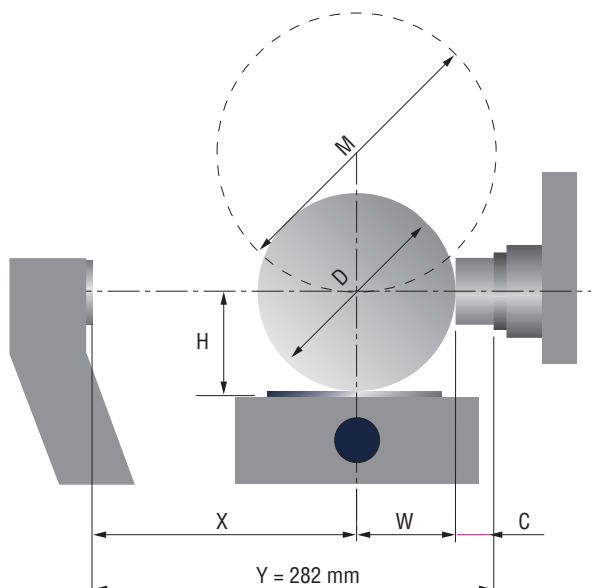
## Delivery Programme

	Main Part	Measuring tables		Digital readouts		
		X=200 mm Y=100 mm	X=300 mm Y=100 mm	TS100	TS200	TS200-E
						
TESA-Scope 355H	06830011	•	•	•		
TESA-Scope 355H	06830012	•	•		•	
TESA-Scope 355H	06830013	•	•			•
						
TESA-Scope 355H Plus	06830014	•		•		
TESA-Scope 355H Plus	06830015	•			•	
TESA-Scope 355H Plus	06830016	•				•

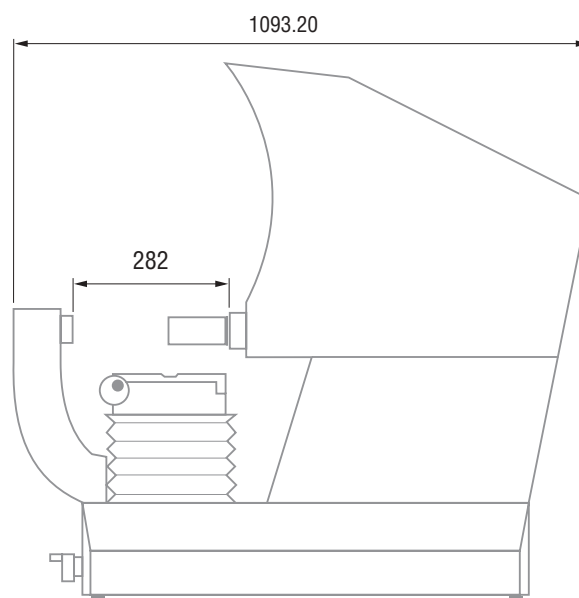
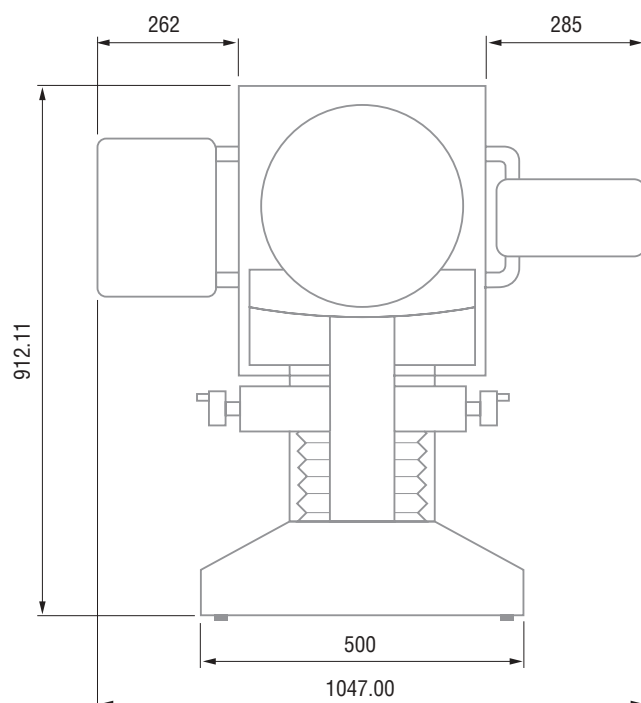
For information on every digital readout, see page 11.

## Telecentric objectives

Magnifications	10x	20x	25x	31,25x	50x	100x
	06860001	06860002	06860003	06860004	06860005	06860006
Measuring span	35 mm	17,5 mm	14 mm	11,2 mm	7 mm	3,5 mm
Working distance (W)	80 mm	82 mm	70 mm	56 mm	53 mm	43 mm
Max. height (H)	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Max. diameter (D)	200 mm	200 mm	200 mm <td 200 mm	200 mm	200 mm	
Objective length (C)	37 mm	35 mm	47 mm	61 mm	64 mm	74 mm
Max. width of the part to be measured X=Y-(W+C)	165 mm	165 mm	165 mm	165 mm	165 mm	165 mm



## Overall dimensions



## TECHNICAL DATA

### Main part

Material  
Measuring systems with opto-electronic  
incremental scales. Resolution  
Precision for each coordinate direction  
Image accuracy

Profile illumination  
Surface illumination with adjustable fiber optic  
Operating temperature range  
Working temperature range  
Max. perm. relative humidity  
Power supply

Mass  
Degree of protection  
Electromagnetic compatibility  
Provided fully mounted with

Manufactured in Switzerland

Heavy duty overall steel structure

0,001 mm  
(4,5 + L/40)  $\mu\text{m} \leq 8 \mu\text{m}$  (L in mm)  
 $\pm 0,05 \%$  with profile illumination;  
 $\pm 0,10 \%$  with surface illumination  
24 V – 150 W light source with thermal filter.  
24 V – 200 W light source with thermal filter.  
10°C to 40°C  
19°C to 21°C (for guaranteeing accuracy)  
80%, non-condensing  
115 to 230 Vac  $\pm 10\%$ ; 50 to 60 Hz  
110 kg  
IP40  
CEI 61010 – EN 60204 – EN 61326-1  
Serial number, declaration of conformity,  
TESA inspection report

### Small measuring table

Material  
Surface area  
Measuring span  
Max. load capacity

Anodized aluminium  
350 x 100 mm (X/Y)  
200 x 100 mm (X/Y)  
10 kg

### Large measuring table

Material  
Surface area  
Measuring span  
Max. load capacity

Anodized aluminium  
440 x 100 mm (X/Y)  
300 x 100 mm (X/Y)  
10 kg



## TESA-SCOPE 500V

*Specially suited for use with overlay chip charts.*

*May equally be equipped with a single objective for a 5x magnification or two objectives for magnifications from 10x up to 100x.*





- Profile projectors with vertical light illumination.
- 360° rotary frosted glass screen having a 500 mm diameter. Crossline reticules 30°, 60° and 90°. Also with 4 overlay clip charts.
- Built-in digital protractor to show the screen rotation.
  - Minute degrees or decimal degrees, RAZ ABS/INC
- Profile illumination with green filter included.
  - Enhances image contrast, makes measurement easier and reduces all effects due to the operator.
- Adjustable fiber optic surface illumination for a perfect image projection.
- System «Save Lamp».
  - Automatic shut down of the bulbs when the projector is not used for a few minutes (thus increasing the life of the bulbs by 5).
- Track fixture for mounting 2 objectives (10x up to 100x magnifications). Indexing linear displacement.
  - Removable objectives – Quarter turn system.
  - Single objective with a 5x magnification.
- Measuring table moving crosswise, equipped with an opto-electronic system that uses an incremental scale with a resolution to 0,001 mm.

#### Measuring span:

- 200 x 100 mm.
- X-axis fitted with a clutch mechanism for fast displacement
- Control handle for right- or left-handed operator allowing easy displacement in the X-axis
- Workload capacity up to 10 kg with no loss of accuracy.
- Papersheet holder, lateral.
- Protective hood and curtain normally supplied.
- Provided with serial number, TESA calibration certificate, declaration of conformity, User's manual.
- Each projector comes entirely mounted. Objectives must be ordered separately.
- Swiss Made.



## Delivery programme


		Main Part	Measuring table X=200 mm/Y=100 mm	Digital readouts		
				TS100	TS200	TS200-E
						
TESA-Scope 500V 5x*	06830021	●	●	●		
TESA-Scope 500V 5x*	06830022	●	●		●	
TESA-Scope 500V 5x*	06830023	●	●			●
						
TESA-Scope 500V 2 OBJ**	06830024	●	●	●		
TESA-Scope 500V 2 OBJ**	06830025	●	●		●	
TESA-Scope 500V 2 OBJ**	06830026	●	●			●

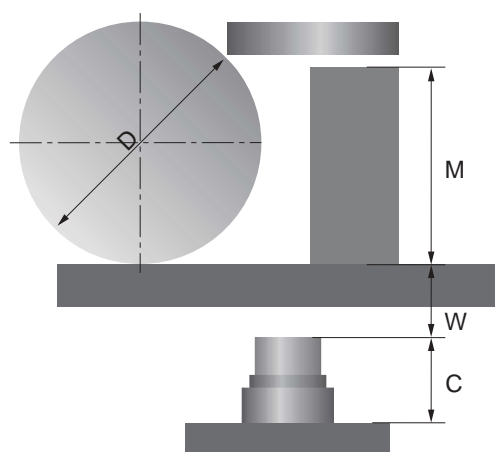
\* Provided with a single objective (5x).

\*\* Provided with a track for mounting 2 objectives with 10x up to 100 x magnifications (not included).

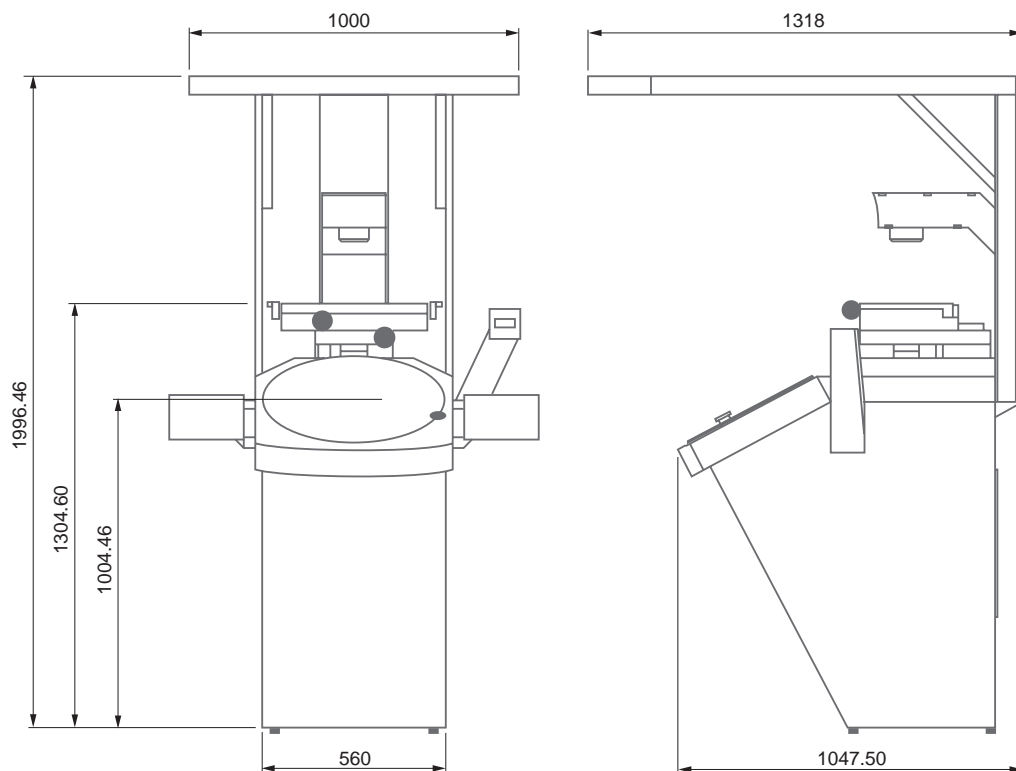
For information on every digital readout, see page 11.

## Telecentric objectives

Magnifications	5x	10x	20x	25x	31,25x	50x	62,5x	100x
		06860008	06860009	06860010	06860011	06860012	06860013	06860014
Measuring span	100 mm	50 mm	25 mm	20 mm	15,9 mm	10 mm	8 mm	5 mm
Working distance (W)	220 mm	138 mm	138 mm	118 mm	90 mm	100 mm	76 mm	48 mm
Max. height (M)	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm	100 mm
Max. diameter (D)	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
Objective length (C)	45 mm	87 mm	82 mm	105 mm	133 mm	61 mm	85 mm	111 mm



## Overall dimensions



## TECHNICAL DATA

### Main part

#### Material

Measuring systems with opto-electronic incremental scales. Resolution  
 Precision for each coordinate direction  
 Image accuracy

#### Profile illumination

Surface illumination with adjustable fiber optic

Operating temperature range

Working temperature range

Max. perm. relative humidity

Power supply

Mass

Degree of protection

Electromagnetic compatibility

Provided fully mounted with

500V 5x

500V 2 OBJ

Manufactured in Switzerland

Heavy duty all steel structure

0,001 mm

$(4,5 + L/40) \mu\text{m} \leq 8 \mu\text{m}$  (L in mm)

$\pm 0,05 \%$  with profile illumination;

$\pm 0,10 \%$  with surface illumination

24 V – 150 W light source with thermal filter

24 V – 200 W light source with thermal filter

10°C to 40°C

19°C to 21°C (for guaranteeing accuracy)

80%, non-condensing

115 to 230 Vac  $\pm 10\%$ ; 50 to 60 Hz

200 kg

IP40

CEI 61010 – EN 60204 – EN 61326-1

Serial number, declaration of conformity,

TESA inspection report

Including one single objective (5x)

Objectives must be ordered separately

### Measuring table

#### Material

Surface area

Measuring span

Max. load capacity

Anodized aluminium

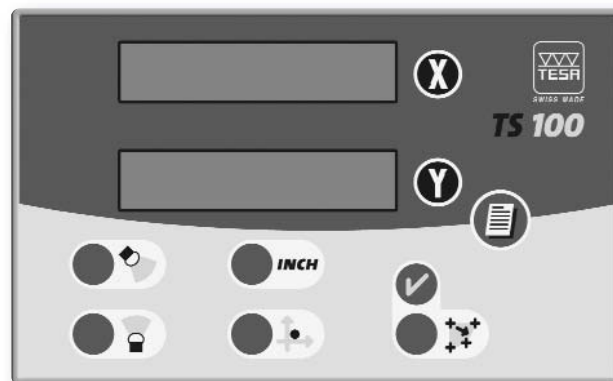
440 x 282 mm (X/Y)

200 x 100 mm (X/Y)

10 kg

## TS-100 DIGITAL READOUT

- Digital display for both X/Y axes
- 0,001 mm resolution
- Inch/metric conversion
- Separate resetting to zero of the two axes X/Y
- Absolute/Incremental measuring modii
- X/Y Linear compensation
- Profile and surface Illumination control
- RS232 digital output (SPC Printer)
- Swiss made



*Model 300V: with built-in readout*

### Measuring functions

- Diameter (3 to 10 measured points)
- Radius (3 to 10 measured points)
- Centre distance of two actual radii or diameters
- Auto Enter (automatic input of the measured points)



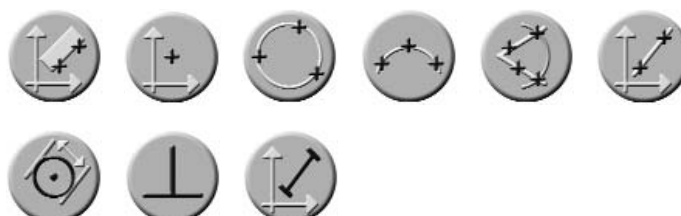
## TS-200 AND TS-200E DIGITAL READOUTS

- Large LC Display
- Inch/metric conversion
- Cartesian and polar coordinates
- Programming function
- X/Y Linear compensation
- On-screen part drawing
- Scale error detection
- Possible configuration of display
- Parallel and RS232 digital outputs
- Edge detector (TS-200-E)



### Measuring functions

- Skew
- Point
- Radius
- Diameter
- Arc
- Angle
- Line
- Distance
- Slot
- Perpendicularity
- Parallelism
- Theoretical point
- Theoretical diameter
- Auto Enter function



## Accessories for Profile Projectors



06860015	200 x 100 mm glass plate
06860016	300 x 150 mm glass plate
06860017	300 mm diameter viewing screen with 4 overlay chart clips
06860018	355 mm diameter viewing screen with 4 overlay chart clips
06860019	500 mm diameter viewing screen with 4 overlay chart clips
06860020	Profile light source, 24 Volts – 150 Watts
06860021	Surface light source, 24 Volts – 200 Watts
06860022	Rotary table with a 150 mm dia. for standard model (200 x 100 mm)
06860029	Rotary table with a 150 mm dia. for model 300 x 150 mm
06860024	V-blocks and centres
06860025	Vise stage
06860026	Vise stage + Main part
06860027	TESA practice piece
06860035	Calibration, distance and magnification plate
06860036	Square holder for calibration plate (model 355H)

## Measuring Films



06869055	Model 300V: type RA for measuring radius, circle, bending radius, concentricity
06869056	Model 300V: type PO for measuring radius and angle
06869057	Model 300V: type M2 ISO for thread measurement, thread pitch from 0,075 to 6 mm

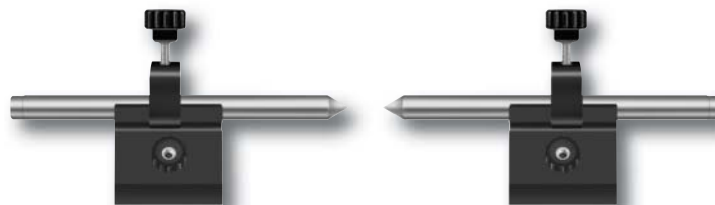
*Other types and sizes for models 355H and 500 V available on request.*



06860022/29



06860026  
(base + vise 06860025)



06860024



06860025

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 6812.019.0410