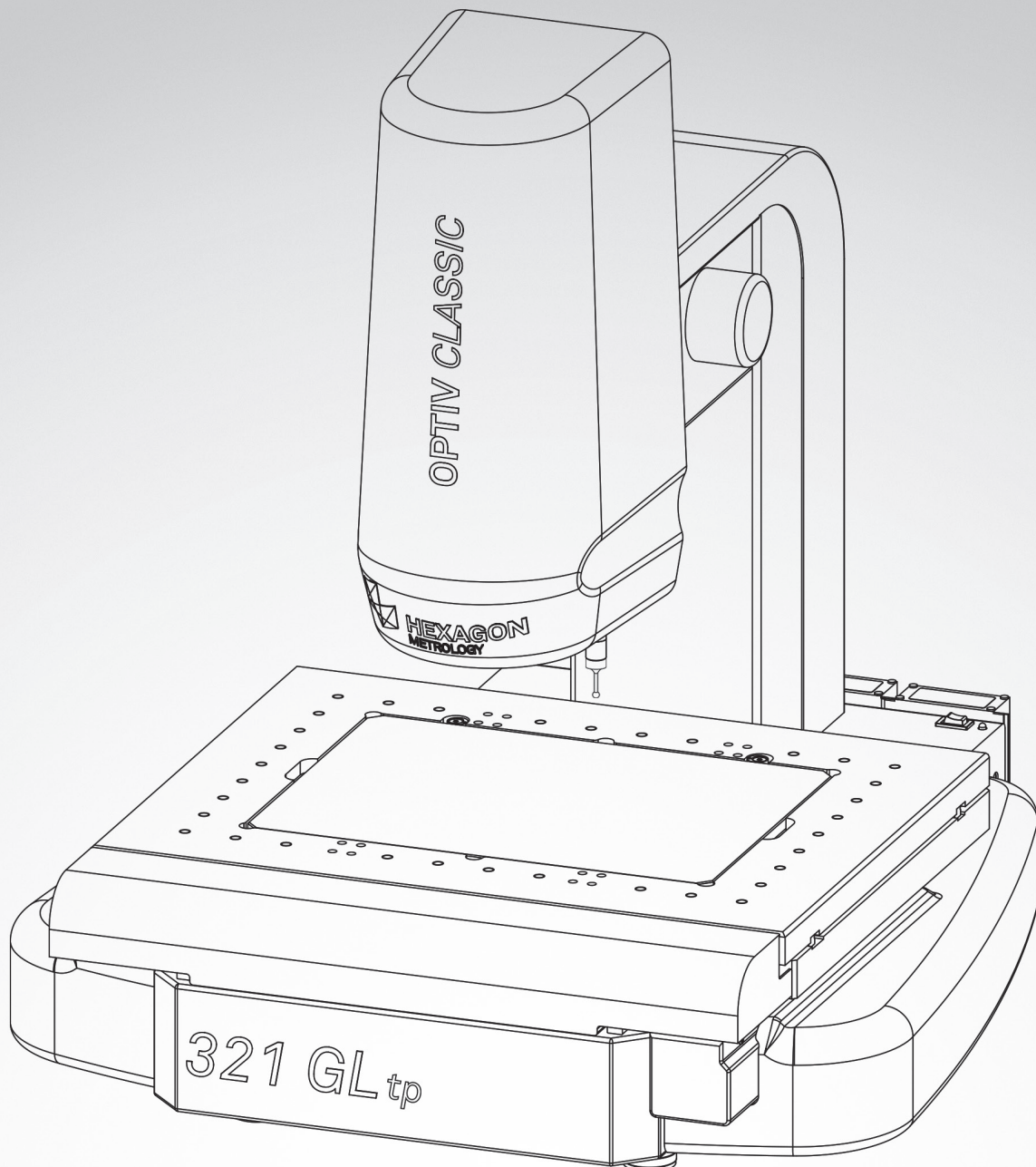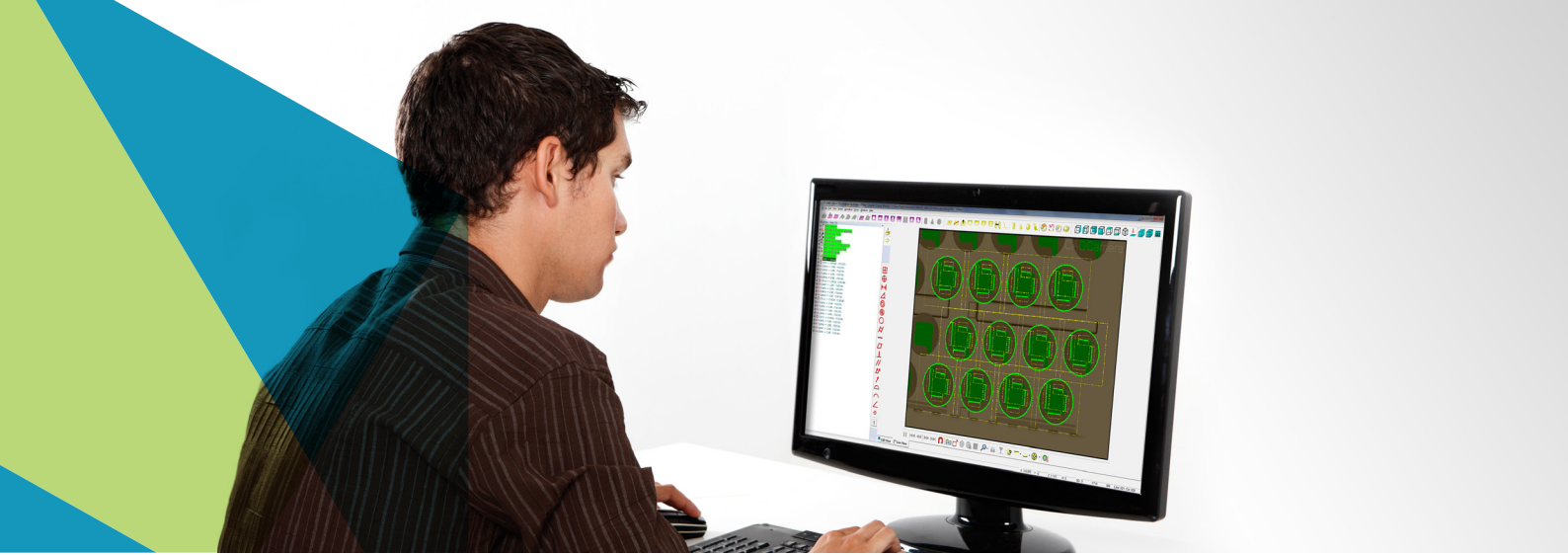HEXAGON
METROLOGY

OPTIV CLASSIC 321 GL/tp

The Facts:

The benchtop video-based measuring machine Optiv Classic 321 GL is equipped with a digital CCD color camera and a motorised CNC zoom as standard. Optiv Classic 321 GL tp combines optical and tactile measurement in one system and supports multi-sensor measurements using the Vision sensor and touch-trigger probes. Both models provide easy pallet station integration with good accessibility to the table from all sides. Measurement software is PC-DMIS Vision.

The Technology:

Design principle	Benchtop unit of proven cross-table design
Guides	Mechanical linear guides on all axes
Drives	DC servo motors
Length measuring system	- Incremental, optoelectronic length measuring system - Resolution of the scales 0.05 µm
CNC controller	3 axes microprocessor CNC with vector path control
Vision sensor	- Sensor for non-contact measurement of smallest and closely toleranced features - CCD color camera and 6.5x motorised CNC zoom - Field of view with standard lens: 1.13 x 0.85 mm bis 6.4 x 4.8 mm
Variable illumination	- Coaxial LED top light (white LED) - LED back light (green LED + diffusing plate) - Multi-segment LED ring light

Measuring accuracy
L = measuring length in mm

with optical sensor

X,Y measuring accuracy	$E_x, E_y = (1.6 + L/250)$ µm
XY measuring accuracy	$E_{xy} = (2.0 + L/250)$ µm

with touch-trigger probe

X,Y measuring accuracy	$E_x, E_y = (2.0 + L/250)$ µm
XY measuring accuracy	$E_{xy} = (2.5 + L/250)$ µm
Z measuring accuracy	$E_z = (2.9 + L/200)$ µm

Measuring range (X x Y x Z)
[1] Vision sensor <—> touch-trigger probe (X offset = 70 mm)

	Measuring Range Single Sensor	Mutual Measuring Range [1]
	Model 321 GL/321 GL tp	Model 321 GL tp
X	300 mm (11.81 in.)	230 mm (9.06 in.)
Y	200 mm (7.87 in.)	200 mm (7.87 in.)
Z	150 mm (5.91 in.)	150 mm (5.91 in.)
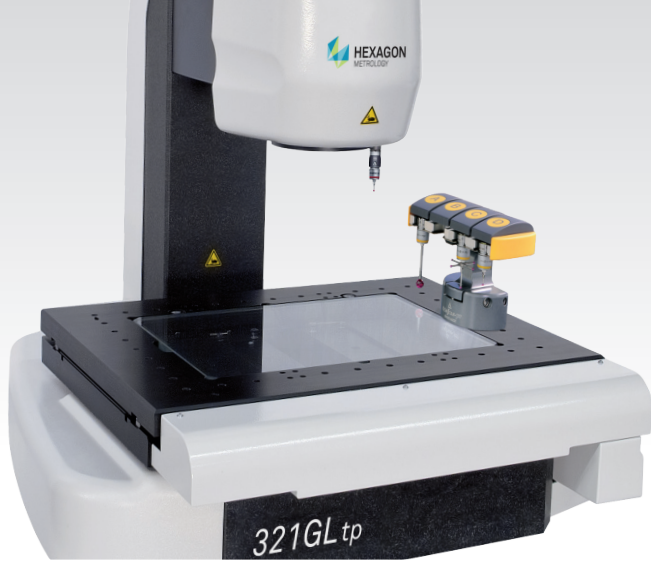
PC-DMIS Vision measurement software	- Feature-based measurements
	- Functions for fast editing of measurement programs
	- Powerful image processing:
	- Video autofocus
	- Automatic geometry recognition
	- Contour scanning mode: Automatic adjustment to the measuring situation for easy contour determination
	- AutoTune: Transferring measuring programs from one multisensor machine to the other
	- MultiCapture: Increases inspection speed by capturing all features within a field of view simultaneously
	- RGB Sensitivity Adjustment: Improves image contrast to support edge detection
	- Automatic speckle filters
	- Extensive analysis and reporting functions
	- CAD-based measurement programming (option)
	- Offline-programming (option)

Throughput	Max. traversing speed	X, Y, Z = 160 mm/s

Environmental requirements	Environmental temperature	20 °C ± 1 °C
	Permissible temperature gradient	0.8 °C/h, 1.0 °C/d, 0.6 °C/m

Supply data	Input voltage power supply	110 - 240 V ± 10 %
	Frequency	50-60 Hz

Dimensions (in mm / inch)		
	Height	890 / 35.04 max.
	Width	705 / 27.76
	Depth	986 / 38.82 max.

Weights (kg)	Machine weight	170 kg
	Load-bearing capacity of the table	20 kg

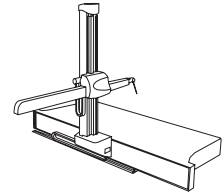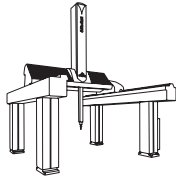| **Options**	- Optiv Classic 321 GL tp: touch-trigger probes TESASTAR-mp or TP200
	- Stylus module changing rack
	- Indexable rotary table
	- Periphery:
	- Desk
	- Printer
	- Monitors
	- Uninterruptible power supply (UPS)
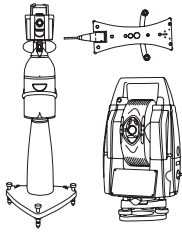
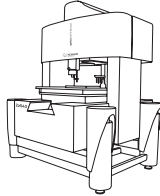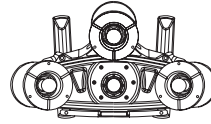LASER TRACKERS
& STATIONS

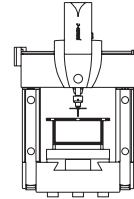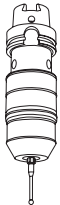PORTABLE MEASURING ARMS
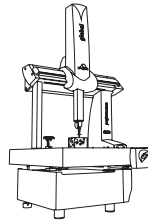
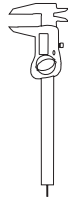BRIDGE CMMS

HORIZONTAL ARM CMMS
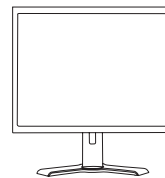
GANTRY CMMS

MULTISENSOR & OPTICAL SYSTEMS

WHITE LIGHT SCANNERS

ULTRA HIGH ACCURACY CMMS

SENSORS

PRECISION MEASURING
INSTRUMENTS

SOFTWARE SOLUTIONS

HEXAGON
METROLOGY

Hexagon Metrology offers a comprehensive range of products and services for all industrial metrology applications in sectors such as automotive, aerospace, energy and medical. We support our customers with actionable measurement information along the complete life cycle of a product – from development and design to production, assembly and final inspection.

With more than 20 production facilities and 70 Precision Centers for service and demonstrations, and a network of over 100 distribution partners on five continents, we empower our customers to fully control their manufacturing processes, enhancing the quality of products and increasing efficiency in manufacturing plants around the world.

For more information, visit **www.hexagonmetrology.com**

Hexagon Metrology is part of Hexagon (Nordic exchange: HEXA B). Hexagon is a leading global provider of design, measurement and visualisation technologies that enable customers to design, measure and position objects, and process and present data.

Learn more at **www.hexagon.com**