



Reliable CMM for the Metrology Lab or Production Floor



Your Standard Reference for Dimensional Integrity
Powerful GEOMET and CMM Manager Software
Inspect, Scan, Digitize, Reverse Engineer
3 & 5-Axis Probe Options
Tactile Touch and Scanning
Non-Contact Laser Scanning
Intrinsic Accuracy and Repeatability
Affordable and Economical to own
Easy to learn and use
One company - total responsibility
The Industry's Best Support



made in usa
by America's CMM Builder

Microstar 320-185 High Speed CMM tailored to PH20 5-axis performance.
See special Brochure for this model.



Hemel DNA:

Since 1973, a common genetic thread has run through all Helmel CMMs reflecting a philosophy and culture of sound mechanical designs, properly constructed, and coupled with leading probe systems and software that is powerful, efficient, and simple. Our objective is to provide customers with a durable and long lasting precision CMM that is affordable, economical to operate, easy to learn and use, and delivers decades of value and return on investment. It is an added bonus that Helmel is a stable company who will promptly provide knowledgeable service and support.

All Helmel Coordinate Measuring Machines have mechanical bearing systems characterized by strong bearing ratios, design emphasis on balance, attention to the center of moving mass, and optimized drive locations. Our CMMs are constructed with Intrinsic Mechanical Accuracy – **IMA**: they are physically straight, flat, square, parallel and true, with precision derived mainly from the structure, with an assist from software error mapping. That is our *Credo*.

Turn off error mapping on any competitive machine and you reveal a poor underlying product, for which you pay a dear price. Mapping is done to reduce production costs, but it will cost you more each time you need calibration. Error correction files are hidden behind password protection only the OEM can access, binding you to their higher priced services for years. Where Helmel applies error correction, files can be made open and accessible.

We are a vertically integrated manufacturer with all key processes in-house: concepts, prototyping, mechanical and electrical design, machining, grinding, welding, painting, electronic and controller assembly, motion control and GEOMET metrology software development, system build, calibration and test, installation, training, and ongoing service and support. Helmel takes total responsibility for our products. We are still servicing Helmel products that are more than 40 years old.

Hemel's **GEOMET® CMM Software System** has been an industry leader since the early 1980's. Like our machines, there has been a continuity of concepts, and a fundamental goodness in ease and efficiency, that runs through the decades. A user of early HP Basic Geomet would have little difficulty to walk up and use the later DOS versions, or today's Windows versions, because the operating principles have not changed. The user interface, though vastly updated with graphical and Windows functionality, remains recognizable through our parallel iconic keyboard keylabel interface trademarked "Keystroke Magic™". Users inevitably gravitate to this ultimately efficient interaction with Geomet.

For CAD based applications Helmel has a long-standing relationship with the widely popular **CMM Manager Software** from QxSoft, LLC. Many standard and optional translators are available. Part-Model synchronization, probe and stylus library, auto-calibration, auto-probe path with collision detection, 2D and 3D profiling, full editing control, text and graphical Reporting in multiple formats, and a quick-learn graphical user interface in Windows Ribbons are all included.

Intrinsic Mechanical Accuracy is standard in every Microstar. Performance is delivered with or without 3D error correction software.

The Standard MICROSTAR System includes:

- Dual beam bridge design
- Bearings, ways, drives (DCC systems) and scales are covered or guarded
- Precision bearings on hardened & ground ways
- Non-contact optical steel scales mounted on steel
- Granite base
- 3/8-16 clamping inserts
- Control/PC cabinet (open PC rack for manual systems)
- Rugged 3-axis joystick (DCC only)
- Latest computer hardware
- LCD monitor
- Pull-out keyboard with GEOMET keyboard keylabels
- GEOMET 101+ DCC software
- GEOMET Junior+ (manual systems)
- Training part and manual
- Ø1" calibration sphere
- 1 Year Warranty and Software Service Contract (except Junior)

Model Number	Travels			Overall		
	X	Y	Z	W	L	H
320-185*	20"	30"	18"	41"	57"	91"
	500mm	750mm	450mm	1040mm	1450mm	2310mm
325-202	25"	30"	20"	46"	55"	97"
	625mm	750mm	500mm	1170mm	1400mm	2465mm
430-202	30"	40"	20"	51"	70"	97"
	750mm	1000mm	500mm	1295mm	1780mm	2465mm
430-252	30"	40"	25"	51"	70"	107"
	750mm	1000mm	625mm	1295mm	1780mm	2720mm
630-252	30"	60"	25"	51"	90"	107"
	750mm	1500mm	625mm	1295mm	2290mm	2720mm
640-252	40"	60"	25"	61"	96"	107"
	1000mm	1500mm	625mm	1550mm	2440mm	2720mm
840-252	40"	80"	25"	61"	118"	107"
	1000mm	2000mm	625mm	1550mm	3000mm	2720mm
850-252	50"	80"	25"	71"	118"	108"
	1250mm	2000mm	625mm	1800mm	3000mm	2745mm

SPECIFICATIONS: *See Special 320-185 High Speed Brochure

Resolution: 0.00002" (0.5µm)

Repeatability: 0.00011" (2.8 µm) to 0.00014" (3.6µm)

Volumetric Accuracy: 0.00044" (11.2 µm) to 0.00064" (16.3 µm)

Linear Accuracy:

325-202 / 430-202 0.00011"+0.000007"/in. (2.8+L/143) µm, L=mm

430-252 / 630-252 0.00012"+0.000007"/in. (3.0+L/143) µm, L=mm

640-202 / 840-252 0.00013"+0.000006"/in. (3.3+L/166) µm, L=mm

850-252 / 1050-252 0.00014"+0.000006"/in. (3.6+L/143) µm, L=mm

Performance per ASME B89.4.1a-1998.

Performance is based on dynamic measurements with touch trigger probe and 400mm Ball Bar. Tests are at 68°F and 50% relative humidity.

Utility: 120-230V~, 50-60Hz, 20A grounded main power supply.