

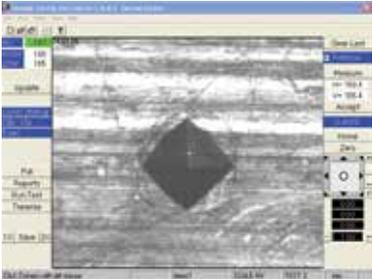
# C.A.M.S.

Computer Assisted  
Microhardness System  
for HMV-G Series



# Save Time, Save Money

## Modular, flexible and upgradable



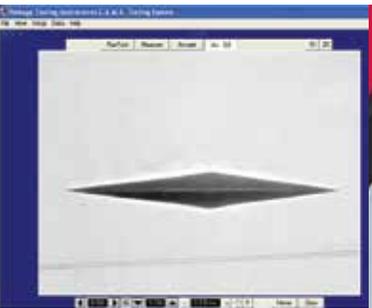
Is your company looking to reduce the cost in a variety of microhardness applications? Then the Newage C.A.M.S., Computer Assisted Microhardness System, is your best answer. The system combines a microhardness tester with a computer, software options, and manual test sample positioning in 2 axes.

Compared to other systems, C.A.M.S. is the one system that has the accuracy in all types of applications, usability for any level of operator skill, and the range of features and options to fit into your current operations and handle most contingencies. It is the one system that has been built from the ground up solely for microhardness testing.

C.A.M.S. is modular, flexible and upgradable. Your company can start with a basic system and upgrade later, if requirements change. Whatever requirements your company has, Newage can provide a system that will maximize the testing capability for a range of budgets.



## Accurate, consistent and repeatable



Achieving good accuracy and repeatability are more complex than simply obtaining good results on perfectly produced test blocks using a technician at a heightened level of attention. The C.A.M.S. system can operate exceptionally well on a variety of test surface conditions, and with the range of surface leveling and rounding at the edge of a sample, that is typically encountered on mounted test samples.

One significant advantage of the C.A.M.S. systems is its lack of contrast dependence. Shading correction and other techniques for edge detection in different surface and lighting conditions are not required by C.A.M.S. Successfully test darker and rougher surfaces every time, all the time.

## You can depend on Newage

- Newage has delivered more automatic traverse systems than other hardness testing suppliers
- Newage has more models in traverse testing
- Newage C.A.M.S. software is owned by Newage and completely written in-house - for better support and customization
- The C.A.M.S. system is built to last with heavy-duty materials and quality components characteristic of all Newage testers
- C.A.M.S. conforms to ASTM requirements for Microhardness Vickers Testing (ASTM E384 and E-92)

# C.A.M.S. software

Provides on-screen viewing and measuring of conventional Microhardness test impressions. On-screen zoom feature can be used to further enlarge the image for easy viewing and measuring. To measure, you simply “click” on each corner of the impression, or use the **Automatic Measurement Function**. The resulting diagonal measurement(s) as well as primary microhardness value and secondary converted hardness value (i.e.: HRC) are automatically calculated and displayed directly on the screen. Video image, operational text and test result data appear on the monitor simultaneously. User defined test parameters include load used and measuring objective used. Test result data parameters include file into which test result data can be stored, adjustable HI, HI-Warn, LO and LO-Warn tolerances. Basic statistics, including average, auto-average and range, can be viewed on screen. User definable field labels allow for custom reports and headings.

**Manual Effective Case Depth Software** function provides for the automatic calculation of effective case depths when used with systems having manual X/Y stages. The software provides operator prompts for properly moving the X/Y stage based upon user programmed traverse sequences. It then enters test results, which are achieved through the software, directly into the effective case formula.

**C.A.M.S. Image Save Function** allows the operator with an option to save the impression image, traverse image (depending on magnification used) or other on screen image, as seen on the screen, to a user named file.



C.A.M.S. can be used for on-screen measurements of other than hardness impressions. Providing the ability to simply click on any two points as viewed on the screen and providing a precise measurement between those two points. Provides measurement resolution to .00001” or .0001 mm. Ideal for manual **measurement of grain size, parts size or case depth** as viewed on etched samples.

C.A.M.S. provides automatic and semi-automatic measurement of the conventional **Microhardness impression, in accordance with ASTM E384 and E92**, without operator involvement. Using unique gray scale imaging technology, the computer automatically scans the impression as viewed on the screen, locates each measurement point and measures the diagonal distance between each point.

C.A.M.S. provides **real time SPC**, including XBar-R chart, chronological test result history with date and time “stamp”, histogram, average, standard deviation and Cpk.

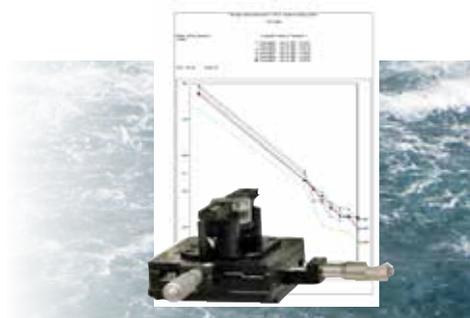
Provides an easy to use manual grain size measurement function in order to **size grains according to ASTM E112 and E1382**. When in use, the software features a unique split screen image with a typical grain size grid overlapping one half of the live image of the area to be sized. To carry out a measurement, the operator simply increases or decreases the overlapping grid on the live image, until the grid grain size most closely emulates the grain size as seen in the live image. The software automatically assigns a micron value and an ASTM grain size value to the grains being measured.

# Flexibility



## Start with a standard microhardness tester

Add options to create the optimum tester for your application and your budget.



## Manual positioning traverse system

Provides set up options to prompt operators for test positions. Includes data storage and automatic graphing.



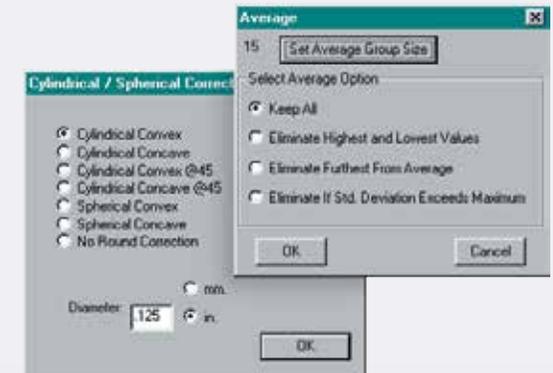
## Basic on-screen measurement system

Software directs tester to make tests, then allows manual or automatic reading of the impression.



## Upgrade competitive microhardness testers

Example of a standard Leco microhardness tester upgraded for manual measurement capabilities.



Many standard and optional functions (such as round correction, averaging, scale conversion of the test results) are designed specifically for microhardness testing by hardness testing specialists.



Operator prompts assist operators during traverse operation. Each step in the process of creating or performing a traverse is prompted. Additionally, the operating instructions are available through the help menu.

# Safe & Reliable

Newage Testing Instrument's sales and service staff and our associates have the capability to support hardness testing needs anywhere in the world.

Newage C.A.M.S. Computer Assisted Microhardness System conforms to ASTM E384 and E-92 for Microhardness and Vickers testing.

Newage Testing Instruments also offers calibration service which is accredited to A2LA.



© 2016 AMETEK Inc.

Pub code: SS-CAMS-HVM-G Issue: 1601

Information in this documents is subject to change without notice. No part of this document may be reproduced or modified in any form or by any means, electronic or mechanical, without express written permission from AMETEK Sensors, Test & Calibration.

USA, Pennsylvania  
Tel +1 (215) 355 6900  
[newage.info@ametek.com](mailto:newage.info@ametek.com)

**Newage**<sup>®</sup>  
hardness testing 

[www.hardnesstesters.com](http://www.hardnesstesters.com)

**AMETEK**<sup>®</sup>  
SENSORS, TEST & CALIBRATION