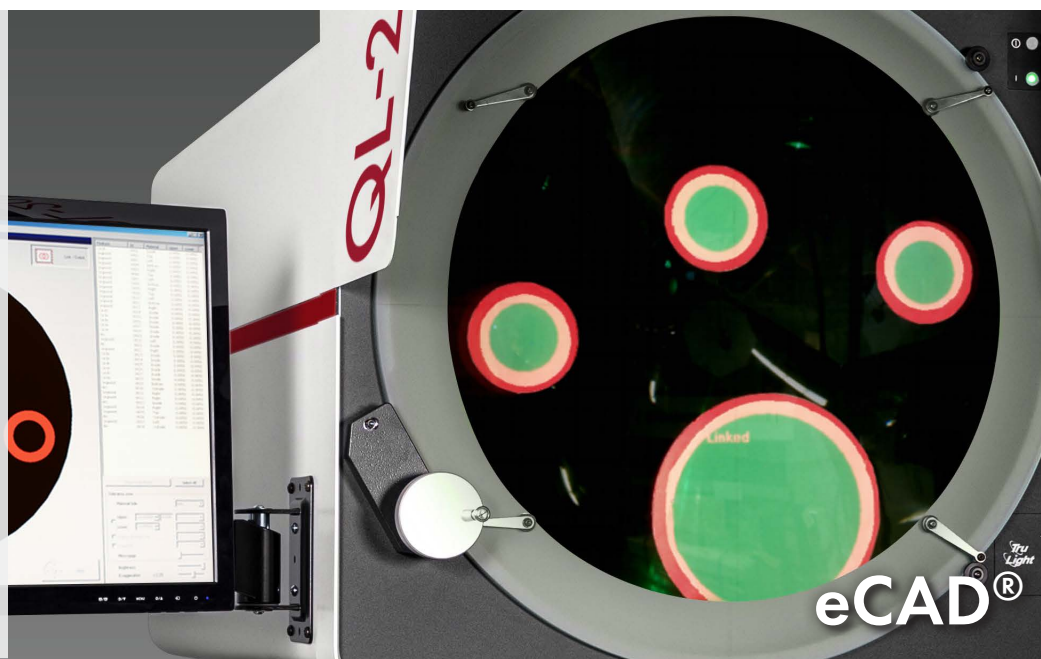




eCAD – A Patented[†] electronic overlay chart package consisting of software and internal comparator hardware that allows a digital CAD model to be used to project a profile tolerance band directly onto the comparator glass screen. eCAD also provides:

- **New Optical Comparator Standard** – Easily see all critical areas of the part at any magnification as eCAD allows the digital CAD file on the screen to follow the movements of the measuring stage. Move the worktable and eCAD will project multiple color bands to show if the part is in or out of tolerance.
- **Ease-of-Use** – With eCAD, virtual charts can be instantly updated from CAD files and automatically rescale with magnification changes.
- **Elimination of Overlay Charts** – There is no longer a need to produce, maintain or invest in an inventory of specialized chart overlays, reducing inspection time and costs in the quality control process. Easily share stored electronic overlays in a networked manufacturing environment.

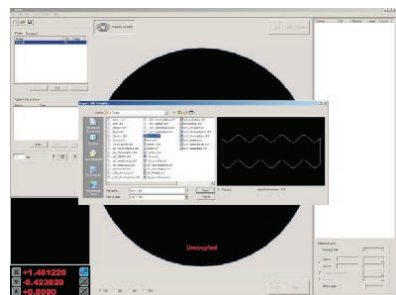
[†]eCAD is covered by the following patents:
US 8,269,970 and US 8,400,633

Virtual Chart Gages Direct from CAD Files

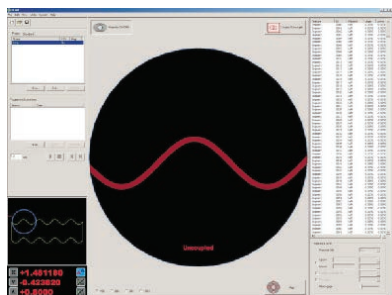


Available on QL-20™ and QL-30™ comparators.

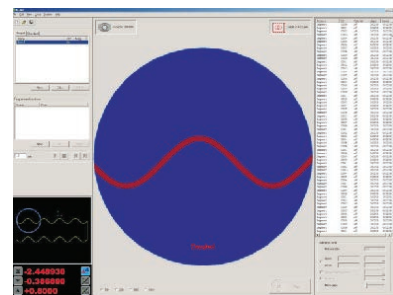
The eCAD process is easy as 1-2-3:



1. Import (open) DXF CAD template

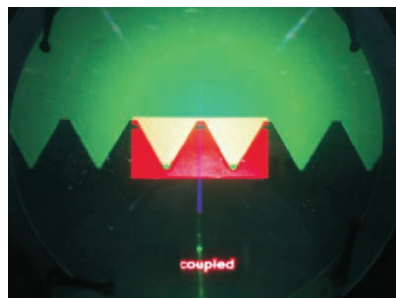


2. Mount the part and focus on feature of interest

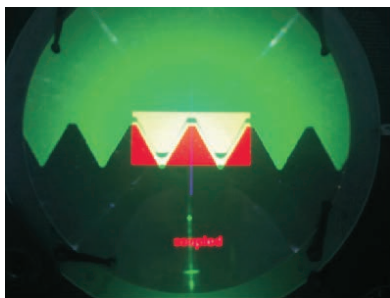


3. Line up image with chart gage, and measure

Using eCAD is as easy as 1-2-3:



Too big (part oversized)



Too small (part undersized)



Just right (part in tolerance)

	Standard
Supported CAD File Formats	DXF, Gerber, Excellon, HPGL, PRT, EPS, DWG
Standard Electronic Charts	C-1 90° cross lines only; C-2 90° cross lines with 30° line in all four quadrants; MG-2 micro-gage cross lines with 30° micro-gage line in all four quadrants; 360° Radius Chart-Multi-Mag; Tool Room Chart
Units	English or metric
CAD File Orientation	Rotational; mirror image horizontal; mirror image vertical; delete entities; material side identification
Tolerance Views	Translucent, color-coded; silhouette; micro-gage
Viewing Tools	Nominal; nominal with profile tolerances; unilateral or bilateral tolerances; tolerance per entity
Inspection Modes	Manual moves; automated moves with manual step-by-step indexing; automated moves with programmed pauses; recall programmed inspection projects; chart gage rotation using motion
Calibration Modes	Field of view; parcentrality; keystone
CAD Alignment Methods	1. Visual Comparison – manual alignment of general part characteristics 2. Manual Orientation Features – manual alignment using a datum structure or skew alignment feature for a more precise relationship 3. Automatic Orientation Features (Automatic Edge Detection) – using the power of Projectron™ (if equipped) to precisely align specific features
Hardware	Includes trackball, lamp house mount for rapid positioning of computer pointing device at the comparator viewing screen; optional 3-Axis Rotary Indexer. Optional Fresnel lens required.
Digital Readouts Supported	Q-Check® DRO
Optional Offline Software Module	eCAD offline – available for remote programming without use of comparator. Offers the ability to define tolerancing, import CAD files, create alignment methods, and program critical inspection areas from a remote location.