



Optical Comparator

Charts, Fixtures, and Accessories

Introduction

A Complete Source For All Your Optical Inspection Needs

OGP® has been a leading supplier of precision measurement equipment since 1945. Since that time, over 75,000 satisfied customers have relied on the quality of OGP products and the experience of our staff.

Optical Comparator Glass Replacement Screens and Overscreen Charts

OGP replacement screens and overscreen chart gages are produced from CAD generated masters scribed on a high precision plotter. Uniform line weight and accurate location are assured.

Replacement screens are made of glass, while overscreen charts are made of dimensionally stable plastic. Plastic charts are produced with our exclusive Permaline™ sealed image process. The chart lines are actually sealed into the plastic for unmatched durability.

The precision screens and charts described in this catalog are specifically designed for CCP, Bausch & Lomb®, Bendix®, Ex-Cell-O®, Kodak®, and OGP comparators. The following table summarizes the physical dimensions of our standard charts.

Standard Chart Dimensions

Comparator Size/Model	Material	Diameter		Thickness	
		inches	mm	inches	mm
14" with Protractor Ring	Plastic	13.88	352.55	0.05	1.27
	Glass	14.50	368.30	0.12	3.05
TB; FC; CC-14L/CC-14 (Focus)	Glass	16.38	416.05	0.19	4.83
CC-16L/CC-16; FC Advance	Glass	18.00	457.20	0.19	4.83
20" with Protractor Ring	Plastic	19.75	501.65	0.05	1.27
	Glass	20.25	514.35	0.25	6.35
QL-20/CC-20*	Glass	25.25	641.35	0.25	6.35
30" with Protractor Ring (QL-30)	Plastic	29.88	758.95	0.05	1.27
	Glass	30.75	781.05	0.25	6.35

Red text indicates current product offerings.

TB = OGP Top Bench; FC = OGP Basic Bench, Focus, Focus Lite; CC = CCP comparators

*Screen size for comparators without a Metal Protractor Ring



Learn more about
Optical Comparator
Accessories:



Standard Replacement Screens and Overscreen Charts

OGP provides a complete range of standard fixtures for use with optical comparators and video measuring systems. From precision clamps and v-blocks to staging centers and rotary tables, you're sure to find a fast and economical way to stage your part.

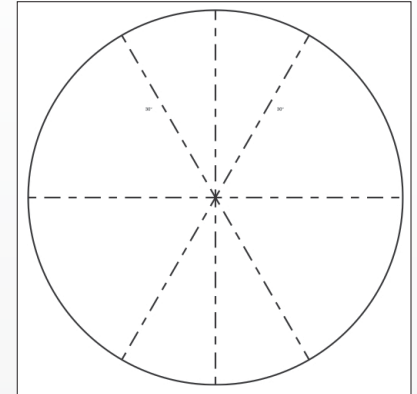
Centerline Screens

OGP centerline screens are offered in two styles:

- For comparators without a metal protractor ring where the screen rides on rollers
- For comparators with a metal protractor ring which can be rotated at any angle

The sizes of these two styles of charts are slightly different. Be sure to note the correct style and part number for your comparator when ordering.

Within those two styles, four designs are offered: C-1 features 90° centerlines only, C-2 adds 30° lines in each quadrant, C-3 adds 30° and 45° lines in one quadrant, and C-4 adds 30° and 45° lines in two adjacent quadrants.



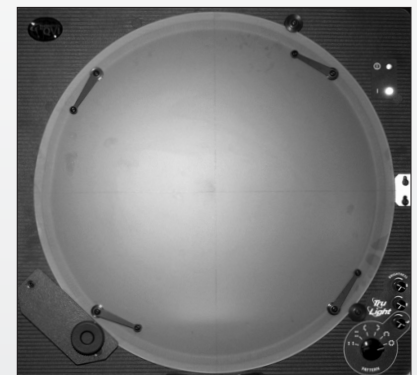
C-2 Style Centerline Screen

Glass Centerline Screens for Comparators without Metal Protractor Rings

Comparator Size/Model	C-1
14" (Focus)	428281
16"	639755
20" (QL-20)	428535

Red text indicates current product offerings.

Glass centerline screens for OGP Top Bench, Basic Bench, Focus Lite, and CCP CC-14/14L, CC-16/16L, & CC-20, include four overlay chart clips attached to glass.

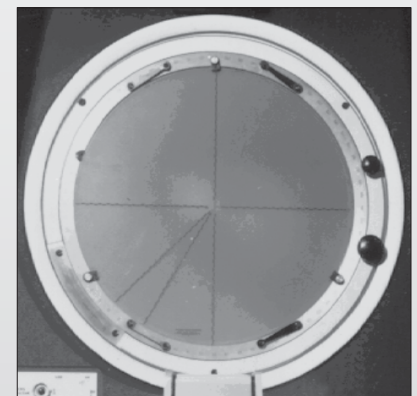


Comparator without Metal Protractor Ring

Glass Centerline Screens for Comparators with Metal Protractor Rings

Comparator Size/Model	C-1	C-2	C-3	C-4
14" (Focus)	125141	Call for details	125143	125144
20" (QL-20)	125201	Call for details	125203	Call for details
30" (QL-30)	125301	125302	125303	125304

Red text indicates current product offerings.



Comparator with Metal Protractor Ring and C-3 Centerline Screen

Notes for Radius, Angle, and Toolroom Charts (Pages 4-5):

- Glass screens for OGP Basic Bench, Focus, and Focus Lite (FC), OGP Top Bench (TB), and CCP CC-14L and CC-14, are designed for use on comparators without a metal protractor ring. All other screens listed are designed for use on comparators with a fixed metal protractor ring.
- Glass screens and plastic charts are generally available in all standard styles and sizes. If no part number is listed for the style and size you wish to order, please call us for a price and delivery quotation.

Radius Screens and Charts

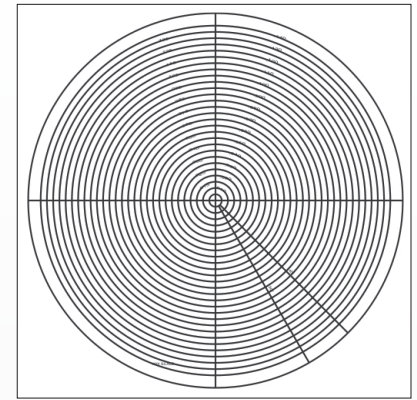
360° radius screens/charts are designed for multi-purpose use. Each screen/chart includes 360° radius lines (with single magnification scale), 90° centerlines, and 30° and 45° lines in one quadrant.

360° Radius Screens/Charts (inch)

For metric, substitute 2 in the last digit of the part number.
(Ex. - p/n for metric 20x/20" plastic chart = 151622)

Comparator Size/Model	Material	10x* .010 ^{***}	20x* .005 ^{***}	50x* .002 ^{***}
14" (Focus)	Plastic	151411	151421	–
20" (QL-20)	Plastic	–	151621	–
	Glass	–	–	151751

*Magnification **Increments
Red text indicates current product offerings.



360° Radius Chart

Grid and Toolroom Screens and Charts

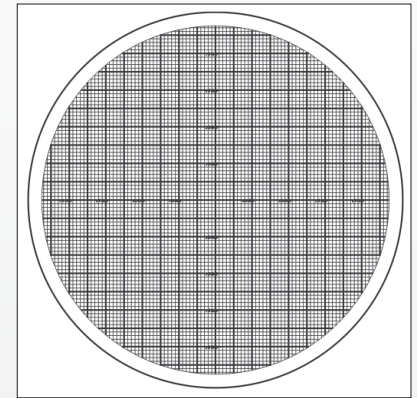
Grid screens/charts turn any comparator into a coordinate measuring instrument. By making simultaneous horizontal and vertical measurements, it's a snap to inspect contours, shoulder lengths, diameters, hole locations, and tapers. For ease of use, every fifth line is bold and identified for direct reading.

Grid Screens/Charts (inch)

For metric, substitute 2 in the last digit of the part number.
(Ex. - p/n for metric 10x/14" plastic chart = 161412)

Comparator Size/Model	Material	10x* .005 ^{***}	20x* .002 ^{***}	50x* .0005 ^{***}
14" (Focus)	Plastic	161411	–	–
	Glass	–	161521	161501
20" (QL-20)	Plastic	–	161621	–

*Magnification **Increments
Red text indicates current product offerings.



Grid Chart

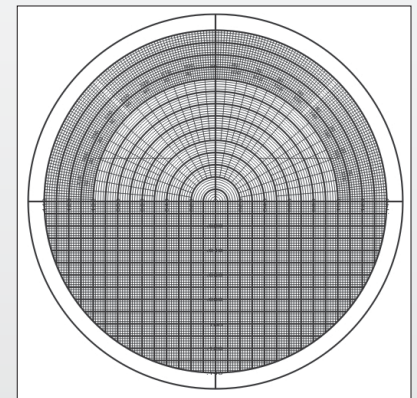
Toolroom screens/charts simplify inspection and save money. This unique tool combines all the features of radius, grid, and angle charts in one convenient arrangement. With a toolroom screen or chart, you'll handle almost any measuring application. Mounting one in the rotary screen ring of your comparator allows you to check parts in any orientation on the screen. For ease of use, every fifth line is bold and identified for direct reading.

Grid Screens/Charts (inch)

For metric, substitute 2 in the last digit of the part number.
(Ex. - p/n for metric 20x/14" plastic chart = 171422)

Comparator Size/Model	Material	10x* .005 ^{***}	20x* .002 ^{***}	31 1/4x* .001 ^{***}	50x* .001 ^{***}	62 1/2x* .001 ^{***}	100x* .0005 ^{***}
14"	Plastic	171411	171421	171431	171451	–	–
	Glass	171511	171521	171531	171551	–	–
TB/CC-14L/CC-14/FC BB (Focus)	Glass	171111	171121	–	–	–	–
	Glass	171211	171221	–	–	–	–
20" (QL-20)	Plastic	171611	171621	–	–	–	–
	Glass	171711	171721	–	171751	171761	–
30" (QL-30)	Plastic	171811	171821	171831	171851	–	–
	Glass	171911	171921	–	171951	–	171901

*Magnification **Increments Red text indicates current product offerings.



Toolroom Chart

See note on previous page.

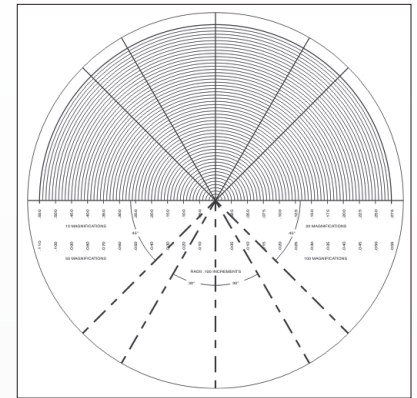
Radius and angle screens/charts combine 180° radius lines (multiple magnification), 90° centerlines, and 30° and 45° lines in each quadrant. Every fifth line is bold and identified for direct reading.

Radius and Angle Screens/Charts (inch)

For metric, substitute 2 in the last digit of the part number.
(Ex. - p/n for metric 10x-100x/14" plastic chart = 152492)

Comparator Size/Model	Material	10x-20x-50x-100x* .01"-.005"-.002"-.001"***	31¼"-62½"*** .004"-.002"***
14"	Plastic	152491	152481
	Glass	152591	-
TB/CC-14L/CC-14/FC BB (Focus)	Glass	152191	-
	Glass	152291	-
20" (QL-20)	Plastic	152691	-
	Glass	152791	152781
30" (QL-30)	Plastic	152891	-
	Glass	152991	-

*Magnification **Increments **Red text** indicates current product offerings.



Radius and Angle Chart

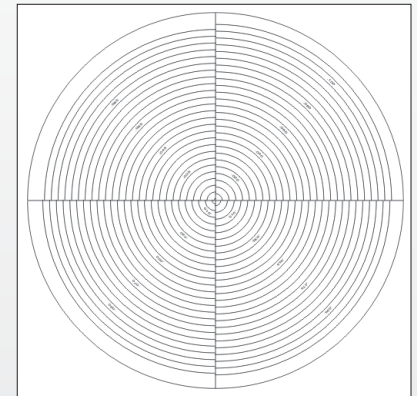
0.001" radius screens/charts allow easy checking of radii. Each chart has 90° centerlines and 90° radius lines (with single magnification scale) in 0.001" increments in adjacent quadrants.

0.0001" Radius Screens/Charts (inch)

For metric, substitute 2 in the last digit of the part number.
(Ex. - p/n for metric 20x/14" plastic chart = 153422)

Comparator Size/Model	Material	10x*	20x*	31¼x*	50x*
14"	Plastic	153411	153421	-	153451
	Glass	153511	153521	-	-
FC (Focus)	Glass	-	-	153231	-
20" (QL-20)	Plastic	153611	153621	-	153651
30" (QL-30)	Plastic	153811	153821	-	-
	Glass	-	153921	-	-

*Magnification **Red text** indicates current product offerings.



0.001" Radius Chart

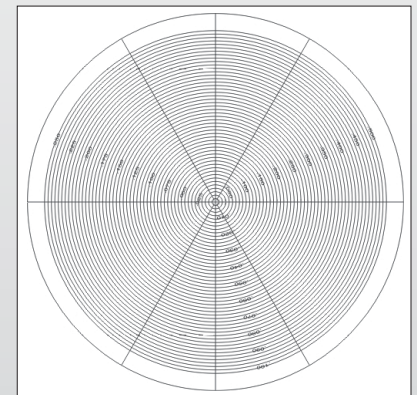
360° multiple magnification radius screens/charts include 360° radius (multi-mag), 90° centerlines, and 30° and 45° lines in each quadrant. Every fifth line is bold and identified for direct reading.

360° Multi-Mag Radius Screens/Charts (inch)

For metric, substitute 2 in the last digit of the part number.
(Ex. - p/n for metric 10x-50x/14" plastic chart = 158472)

Comparator Size/Model	Material	10x-20x-50x* .01"-.005"-.002"***
14" (Focus)	Plastic	158471
	Glass	158571
20" (QL-20)	Plastic	158671
	Glass	158771
30" (QL-30)	Plastic	158871
	Glass	158971

*Magnification **Increments **Red text** indicates current product offerings.



360° Multiple Magnification Radius Chart

Certification Accessories

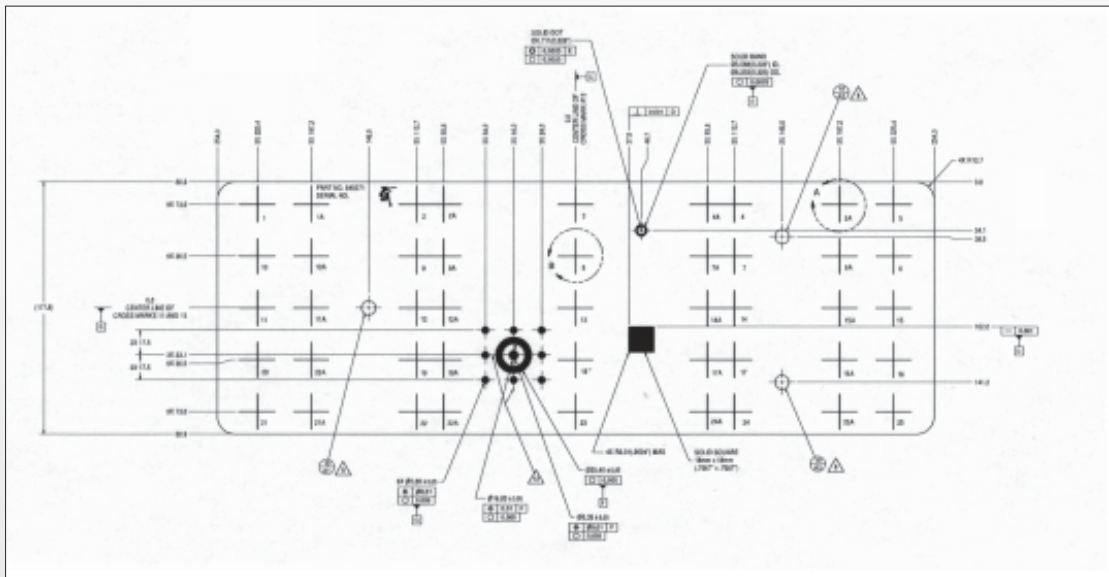
Certification Reticles

The OGP Magnification Checker Kit allows fast, easy checking of comparator magnifications. This chrome-on-glass reticle has four sizes of precision circles and one line for checking the screen image at any magnification. Just stage the reticle and compare the image to the accompanying reference scale.

The OGP Video and Comparator Reticle Kit is used to certify the measurement accuracy of optical comparators and video measuring systems. Each reticle includes 12" and 300 mm linear scales, six-position 5" x 11.5" grid array, magnification checking circles, three calibrated squares, three sets of perpendicular lines for checking squareness, calibration certificate (traceable to NIST, two leveling fixtures, and a storage case.



Video and Comparator Certification Reticle Kit



25-Point Grid Calibration Reticle

Certification Accessories

Magnification Checker Kit (includes reticle, scale, and case)	113200
Magnification Checker (reticle only)	424780
Magnification Checker (scale only)	133900
Video and Comparator Certification Reticle Kit	425404
Video and Comparator Certification Reticle Kit (ISO 17025 Certified)	427488
Support Blocks	425402
25-Point Grid Calibration Reticle, 18" x 6"	640271
25-Point Grid Calibration Reticle, 15" x 5"	640298
Vertical Stage Calibration Reticle Kit, 18" x 6"	428877
Vertical Stage Calibration Reticle Kit, 15" x 5"	428877

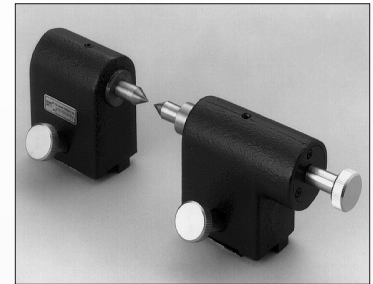
Standard Fixtures

Staging Centers

Staging Centers are sold in pairs and are available in two sizes. The 5" centers hold parts up to 5" (125 mm) diameter on carbide tipped centers. The right-hand center is spring loaded and retractable to permit easy part loading. A thumbscrew clamps each center to any comparator worktable fixturing slot. Replacement centers, sold separately, have a #1 Morse taper shank.

The 8" heavy duty staging centers accept parts up to 8" (200 mm) diameter, and both centers are adjustable for locating the workpiece. Double clamps assure positive locking to the worktable. Carbide tipped replacement centers, sold separately, have a 1" diameter straight shank.

5" staging centers, matched pair, carbide tipped	421913
5" replacement center, tapered shank, carbide tipped, left or right	421923
8" heavy duty staging centers, matched pair, carbide tipped	421914
8" heavy duty replacement center, straight shank, carbide tipped, left or right	421935



5" Staging Centers

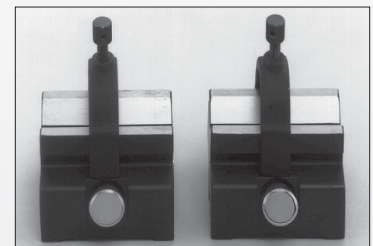


8" Staging Centers

V-Blocks

V-Blocks are available in three sizes. 1", 2", and 3" v-blocks stage parts from 3/32" to 1" (2-25 mm) diameter, 7/32" to 2" (5-50 mm) diameter, and 1/2" to 3" (12-75 mm) diameter, respectively.

1" horizontal v-blocks, matched pair	421900
1" horizontal v-blocks, single	421901
2" horizontal v-blocks, matched pair	421902
2" horizontal v-block, single	421903
3" horizontal v-blocks, matched pair	426791
3" horizontal v-block, single	426790

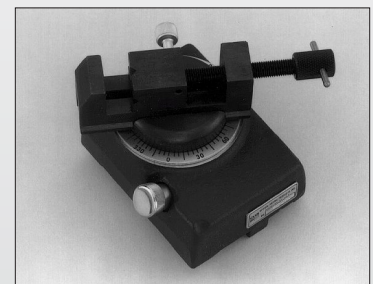


1" V-Blocks

Rotary Staging Vise

The Rotary Staging Vise provides quick, convenient staging for a variety of parts. It rotates 360° and includes a protractor ring with 5° graduations. Jaws open to 1-3/8" (35 mm).

Rotary staging vise	421909
Replacement vise (only)	421952



Rotary Staging Vise

Other Specialized Fixtures

Riser Blocks are approximately 2.5" wide x 2.5" deep, and are available in 1", 2", and 3" heights. Constructed from hardened, ground steel, QVI Riser Blocks are sold in pairs only.

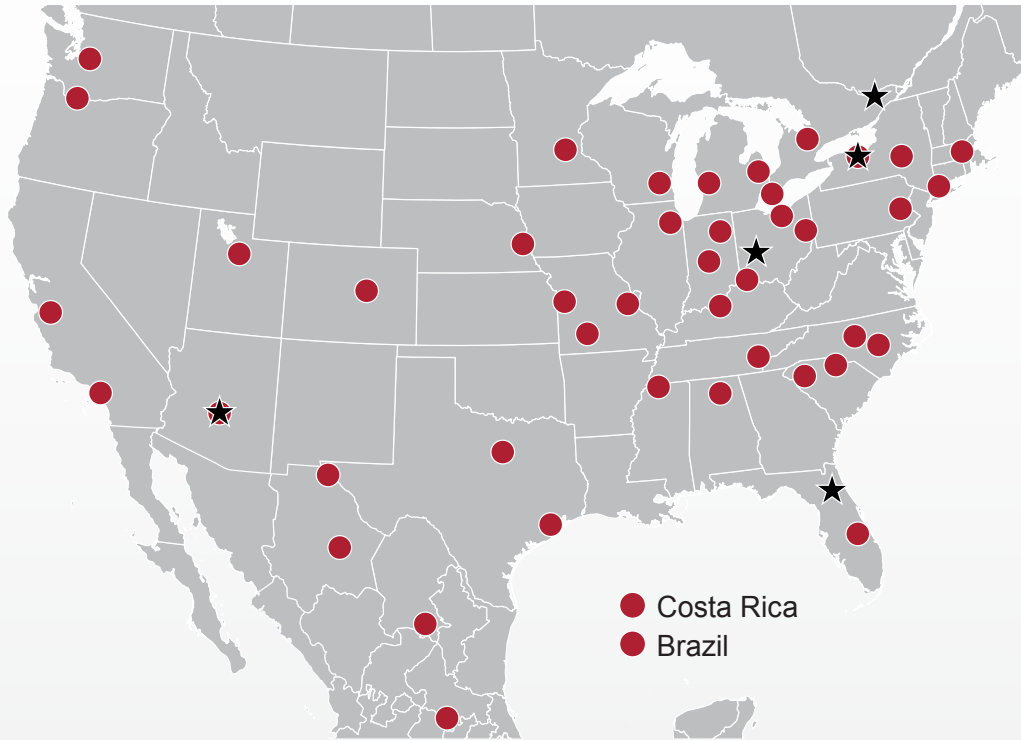
1" high riser blocks, pair	X-1299
2" high riser blocks, pair	X-1300
3" high riser blocks, pair	X-1301



Riser Block

Global Sales & Support Offices

The Americas



Support Office Locations: Americas

- Rochester, NY, USA
- Dayton, OH, USA
- Gainesville, FL, USA
- Tempe, AZ, USA
- Ottawa, Canada

Europe

- Budapest, Hungary
- Hofheim-Wallau, Germany
- Turin, Italy

Asia

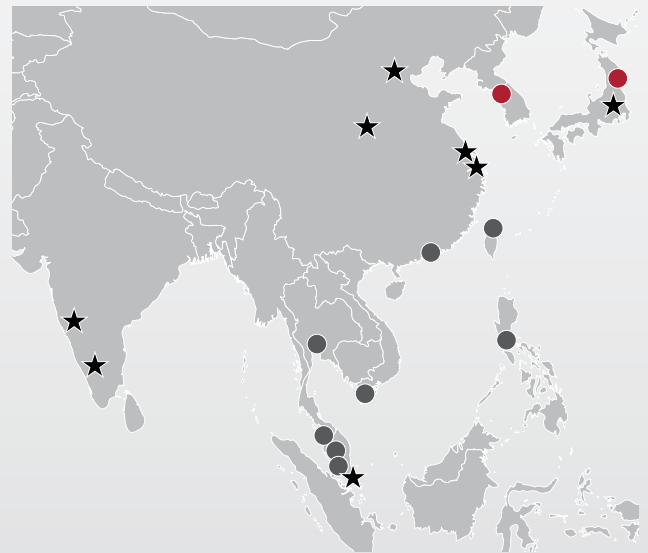
- Beijing, Shanghai, Suzhou, Xi'an, China
- Bengaluru & Pune, India
- Singapore
- Tokyo, Japan

- ★ Support Offices
- Sales Representatives
- Agents

Europe, Middle East and Africa



Asia



Scan to Find a Rep

- Israel
- South Africa

- Australia
- Indonesia



World Headquarters: Rochester, NY, USA • 585.544.0400 • www.ogpnet.com

OGP Shanghai Co, Ltd: Shanghai, China
86.21.5045.8383/8989 • www.smartscope.com.cn

OGP Messtechnik GmbH: Hofheim-Wallau, Germany
49.6122.9968.0 • www.ogpmesstechnik.de

Optical Gaging (S) Pte Ltd: Singapore • 65.6741.8880 • www.smartscope.com.sg