

PS-Range Stage Calibration Standards

Stage calibration standards differ from the stage micrometers in that they have a unique serial number etched into the surface of the slide mount, so they are fully traceable when supplied with a certificate of calibration. This means that they satisfy the requirements of ISO traceability.

Pyser-SGI Limited Graticules Division can arrange for the calibration of its scales and grids to be carried out by the most appropriate laboratory to suit the customer requirements - the choice of laboratory is normally dependent on the nature of the calibration and the accuracy required.

a) Calibration by NPL

The National Physical Laboratory carries out measurements at selected points on the scales and grids and issues a certificate of calibration.

b) Calibration by UKAS Accredited Laboratory

A UKAS accredited laboratory carries out measurements at selected points on the scales and grids and issues a calibration certificate.

c) Measurement by Graticules

For applications which do not require the accuracy provided by calibrations carried out by NPL or a UKAS accredited laboratory, Graticules can provide a Certificate of comparison. The scale or grid is compared with NPL calibrated in-house standards and a statement is provided on the accuracy of the item with respect to these standards.

When ordering any of the following parts with calibration certificate please add a suffix to the order code

ie:- 05A01040/**NPL** for PSI with NPL certificate
05A01040/**NAM** for PSI with UKAS (NAMAS) certificate
05A01040/**GRA** for PSI with Graticules certificate



Microscope Standards for Calibration of Eyepiece Graticules

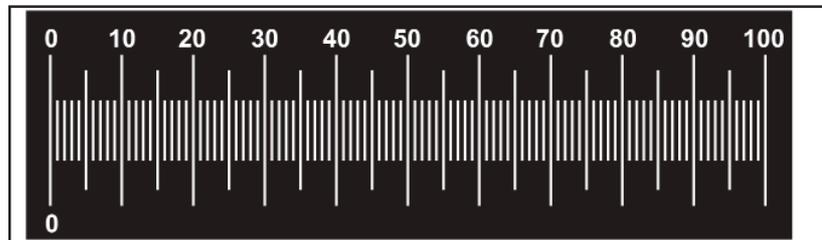
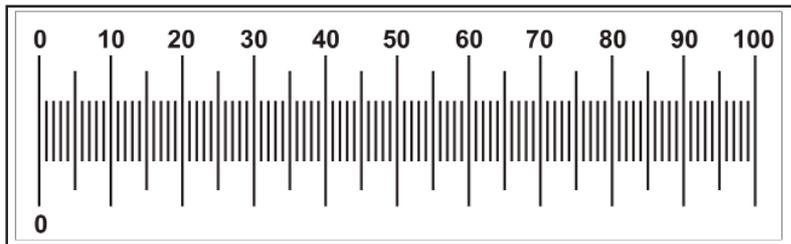
The scale is created as a vacuum deposited chrome image on a glass disc. The glass discs are then mounted in stainless steel slides with engraved serial numbers. Each slide is supplied in a polished wooden presentation and storage box to distinguish it as a traceable standard of high value.

For Transmitted Light

Pattern	Description	Order Code
PS1	Micrometer scale 10mm in 0.1mm divisions.	05A01040
PS4	Micrometer scale 0.1inch in 0.001inch divisions.	05A01041
PS5	Micrometer scale 20mm in 0.01mm divisions.	05B01048
PS8	Micrometer scale 1mm in 0.01mm divisions.	05A01042
PS12	Micrometer scale 0.1mm in 0.002mm divisions.	05A01043
PS16	Crossed micrometer scale 1mm in 0.01mm divisions.	05A01040



For longer scales see page 15



For Reflected (incident) Light

Pattern	Description	Order Code
PS78	Micrometer scale 1mm in 0.01mm divisions.	05B01050
PS1R	Micrometer scale 10mm in 0.1mm divisions.	05A01047
PS4R	Micrometer scale 0.1" in 0.0001" divisions.	05A01049

Accuracy and Line Widths of PS Calibration Standards

Pattern	Line Width	Accuracy (overall)
PS1	0.005mm	Within 0.002mm
PS4	0.002mm	Within 0.0001 inch
PS8	0.002mm	Within 0.001mm
PS12	0.001mm	Within 0.001mm
PS16	0.0015mm	Within 0.001mm
PS78	0.003mm	Within 0.001mm
PS1R	0.005mm	Within 0.002mm
PS4R	0.002mm	Within 0.0001inch

Universal Calibration Slide

Calibration of microscopes and image analysis systems is becoming more sophisticated, with the requirement being for a variety of image patterns to satisfy the numerous parameters. Pyser-SGI has introduced a new multi-function calibration standard specifically for these applications.

Multiple images on a single slide provide the most cost-effective solution to calibration and resolution checking of microscopes and image analysis systems. The combination of scales, dots, circles, squares, rulings, grids and angles can be supplied with an internationally traceable certificate of calibration for those who require ISO conformity.



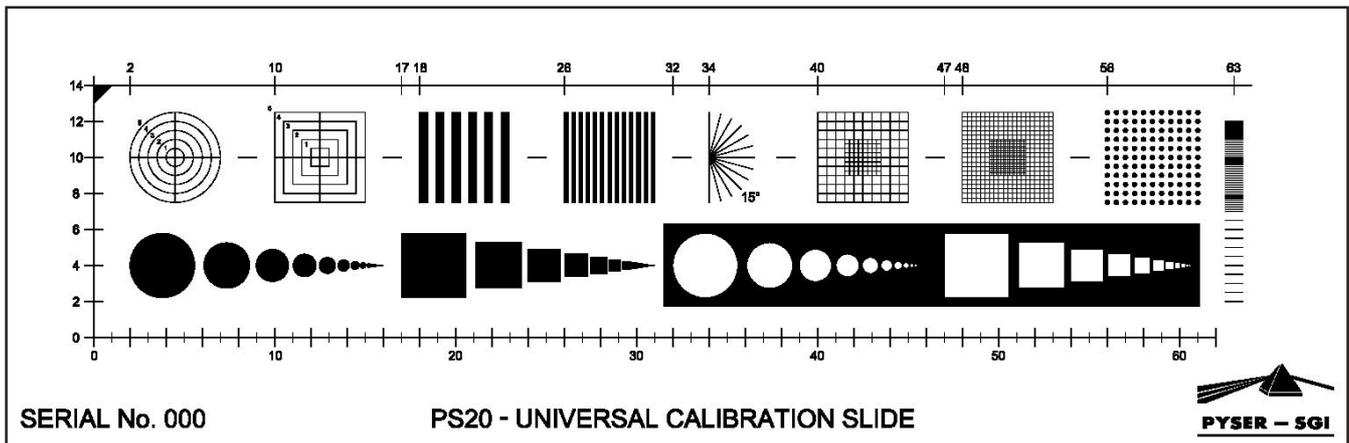
Each glass slide has a unique permanent serial number and can be supplied with full or partial UKAS certificate of accuracy.

Starting from a fixed 'Datum point' mark, each individual pattern or array can be located using X, Y coordinates. See table (over).

Pattern	Description	Order Code
PS20	Universal calibration slide	05B01095

General Specification

General tolerance (microns)	Feature size	Tolerance
	≤ 10	0.5
	10-50	1.0
	50-127	1.3
	127-250	1.9
	> 250	2.54
Coating	Enduring evaporated chrome image	
Optical density	>2.5	
Substrate	Soda lime glass	
Size	76mm x 25mm x 1.5mm	
Package	Polished wooden case	

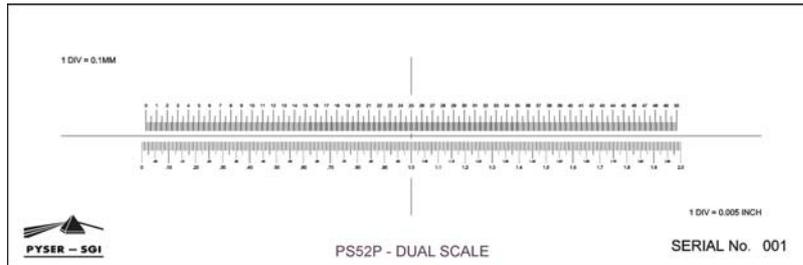


PS20 Universal Calibration Slide Image Details

ID	Pattern Name	Location	Description
A	Concentric Circles	X=2 Y=10	1, 2, 3, 4, 5mm Circles with Cross Line and circle identifier. Line width 20µm
B	Concentric Squares	X=10 Y=10	1, 2, 3, 4, 5mm Squares with Cross Line and circle identifier. Line width 20µm
C	Line Grating 25 lines /mm	X=18 Y=10	12.5 Line Pairs per mm (40µ line 40µ space)
D	Line Grating 100 lines /mm	X=26 Y=10	50 line pairs per mm (10µ line 10µ space)
E	Half Protractor	X=34 Y=10	15° Spacing Line width 20µ
F	Grid Array Coarse	X=40 Y=10	5mm square array with 0.5mm divisions and central 2mm square with 0.25mm divisions. Line width 20µ
G	Grid Array Fine	X=48 Y=10	5mm square array with 0.1mm divisions and central 2mm square with 0.05mm divisions. Line width 8µ
H	Dot Array	X=56 Y=10	Dot diameter 0.25mm, dot centre to centre spacing 0.50mm — 11x11 grid=121 dots
I	Geometric progression of Opaque Dots	X=2 Y=4	<p>Line array of dot or square shapes, of either clear or opaque. Reducing in size in a Root 2 progression for the purposes of edge threshold detection to enable an image analyser to measure the size correctly, or general shape size comparison.</p> <p>Root 2 progression of 21 dots or square shapes, from 3.5µm to 3.5mm</p> <p>Nominal size in mm Dot/square size — Large to small in mm 3.5833; 2.5338; 1.7917; 1.2669; 0.8959; 0.6335; 0.4479; 0.3167; 0.2240 0.1584; 0.1120; 0.0792; 0.0560; 0.0396; 0.0280; 0.0198; 0.0140; 0.0099; 0.0070; 0.0049; 0.0035</p>
J	Geometric progression of Opaque Squares	X=17 Y=4	
K	Geometric progression of Clear Dots	X=32 Y=4	
L	Geometric progression of Clear Squares	X=47 Y=4	
M	Vertical Scale Fine Variable	X=63 Y=2	Overall Scale length 10mm. 5mm in 0.5mm divisions. Line width 20µ 4mm in 0.1mm divisions. Line width 10µ 1mm in 0.01mm divisions. Line width 3µ
N	Horizontal Scale Coarse	X=0 Y=0	Scale length 62mm long in 2mm divisions, subdivided in 1mm divisions with a 20µ line width

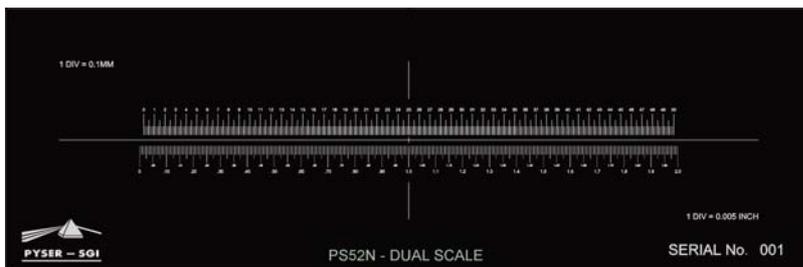
New Dual Scale Calibration Slides

Pyser-SGI has introduced two new calibration slides that have the benefit of dual imperial/metric scales. The PS52P is for transmitted light applications and has a bright chrome positive image. The PS52N has a negative pattern, formed in low reflective chrome for incident light applications to give excellent contrast. Both are ideal for calibrating optical products with a large field of view, such as stereo microscopes or imaging systems.



Highlights

- New Dual-Scale Calibration Slides
- 2" Imperial (English) and 50mm Metric Scales on a Single Slide
- Positive and Negative Versions
- Unique Serial Number for Traceability
- Available with Internationally Traceable Certificates of Calibration



General Specification

Metric scale	50mm in 0.1mm divisions
Imperial (English) scale	2inch in 0.005inch divisions
Line thickness	12 microns
Glass size/type	76mm x 25mm x 1.5mm, B270
Serial number	Unique serial number on slide surface
Case	Supplied in polished wooden box
Calibration certificate	Can be supplied with UKAS certificate of calibration which is internationally traceable and acceptable in all world markets

Pattern	Description	Order Code
PS52P	Dual calibration scale for transmitted light (positive image), 50mm in 0.1mm, 2" in 0.005", serial numbered, supplied in wooden case	05B01052P
PS52P/UKA	As above but with UKAS certificate of calibration, 20 point check	05B01052P/UKA
PS52N	Dual calibration scale for incidental light (negative image), 50mm in 0.1mm, 2" in 0.005", serial numbered, supplied in wooden case	05B01052N
PS52N/UKA	As above but with UKAS certificate of calibration, 20 point check	05B01052N/UKA