

## Optical Flats and Parallels

Optical Flats and Parallels are perfect for repair departments and Quality Control labs for inspection of micrometers and other measuring tools.

Optical Parallels are available in individual sets — four parallels to a set. For greater savings, purchase the complete set of 16 optical parallels, range .610" — 3.582" in thickness. You can also purchase individual optical flats are sold individually.

- Sizes are etched on each individual gage.
- A Certificate of Traceability and Accuracy to the National Institute of Standards and
- Price includes fitted case.
- Material: Optical Glass, which is similar to Germany Grade BK7

**Quartz parallels and flats can also be supplied.**



**Optical Flats**



**Optical Parallel**

| Description      | STC No. | No of Set | Dia                          | Thickness       | Flatness                | Parallelism            | Fowler #   |            |
|------------------|---------|-----------|------------------------------|-----------------|-------------------------|------------------------|------------|------------|
| Optical Flats    |         | 4pcs      | 2.4"                         | 0.787"          | 0.000004"<br>/0.0001mm  | //                     | 53-682-824 |            |
| Optical Flats    |         | 4pcs      | 3.2"                         | 0.984"          | 0.000004"<br>/0.0001mm  | //                     | 53-682-832 |            |
| Optical Flats    |         | 4pcs      | 3.9"                         | 0.984"          | 0.000004"<br>/0.0001mm  | //                     | 53-682-839 |            |
| Optical Flats    |         | 4pcs      | 4.7"                         | 1.181"          | 0.000004"<br>/0.0001mm  | //                     | 53-682-847 |            |
| Optical Parallel |         | 4pcs      | 1.2"                         | 0.610" - 0.625" | 0.000003"<br>/0.00007mm | 0.000020"<br>/0.0005mm | 53-682-101 |            |
| Optical Parallel |         | 4pcs      | 1.2"                         | 1.590" – 1.605" | 0.000003"<br>/0.00007mm | 0.000020"<br>/0.0005mm | 53-682-202 |            |
| Optical Parallel |         | 4pcs      | 1.5"                         | 2.578" – 2.593" | 0.000003"<br>/0.00007mm | 0.000040"<br>/0.001mm  | 53-682-303 |            |
| Optical Parallel |         | 4pcs      | 2.0"                         | 3.567" – 3.582" | 0.000003"<br>/0.00007mm | 0.000020"<br>/0.001mm  | 53-682-404 |            |
| Optical Parallel |         | 16pcs     | Complete set of 16 parallels |                 |                         |                        |            | 53-682-777 |

# Optical Parallels

Optical Parallels are designed to inspect parallelism and flatness of measuring faces of micrometers.

The No. 157-901 shown is frequently used for 1" Micrometers, and consists of 4 thickness:  
**.5000" .5062" .5125" .5187"**



**.5000" thick optical parallel** detects parallelism between the anvil and spindle at the 12 o'clock position.

**.5062" thick optical parallel** indicates parallelism of two measuring faces at the 9 o'clock position or 90 degree turned spindle position in relation to the anvil face.

**.5125" and .5187" thick parallels** check the relationship between the measuring faces at 180 degree and 270 degree turned position, respectively.



It is a rarity to find a new Micrometer with 4 bands parallelism. Most High Quality Micrometers have a maximum of 3 bands.

## Features

- Flatness: 4 micro-inch.
- Parallelism: 8 micro-inch.
- Diameter of optical parallel 1.190".
- Each parallel is marked with a thickness measurement.
- Supplied with fitted carrying case. (Set only)
- Only optical parallels let the inspector see one of the most critical points of the micrometer—flatness and parallelism
- Material: Optical Glass, which is similar to Germany Grade BK7



**We can also supply Quartz Parallel.**

| Description         | STC No. | Size                            | Flatness  | Parallelism | Mitutoyo No. |
|---------------------|---------|---------------------------------|-----------|-------------|--------------|
| Individual Parallel |         | 0.5000"                         | 0.000004" | 0.000008"   | 157-109      |
| Individual Parallel |         | 0.5062"                         | 0.000004" | 0.000008"   | 157-110      |
| Individual Parallel |         | 0.5125"                         | 0.000004" | 0.000008"   | 157-111      |
| Individual Parallel |         | 0.5187"                         | 0.000004" | 0.000008"   | 157-112      |
| Set of Parallel     |         | Including above 4pcs parallels. |           |             | 157-901      |