

Certified Particle Size Standards

The Duke Scientific particle size standards are certified for mean diameter and are traceable to National Institute of Standards and Technology (NIST). The highly uniform polystyrene spheres are calibrated by NIST traceable methods which include photon correlation spectroscopy, TEM and LM. The range of diameters from 1µm to 1000µm is ideal for calibration of electron and optical microscopes and particle sizing instrumentation. A certificate of calibration and traceability is provided with each standard. Detailed physical and chemical properties are also shown.

Monosized Microsphere Size Standards

These are some of the most uniform spheres available in this size range. Products from 1 - 160µm are packaged as 15ml aqueous suspensions in dropper topped bottles. Diameters of 200µm and larger are packaged as dry spheres. The spheres have a density of 1.05g/cm³ and a refractive index of 1.59 @ 589nm wavelength.

Cat. No.	Nominal Diameter	Certified Mean Diameter	Size d'buton/Std Dev/CV	Solids Content
D191	1.0µm	0.993µm ± 0.021µm	0.010µm (1.0%)	1.0%
D192	2.0µm	2.013µm ± 0.025µm	0.022µm (1.1%)	0.5%
D208	5.0µm	4.988µm ± 0.035µm	0.05µm (1.2%)	0.3%
D209	7.0µm	6.992µm ± 0.050µm	0.07µm (1.0%)	0.3%
D193	10µm	9.975µm ± 0.061µm	0.09µm (0.9%)	0.2%
D194	15µm	15.02µm ± 0.08µm	0.15µm (1.0%)	0.3%
D210	20µm	20.00µm ± 0.10µm	0.20µm (1.0%)	0.3%

Other sizes available up to 1000µm

Please ask for Data Sheet

Diffraction Standards

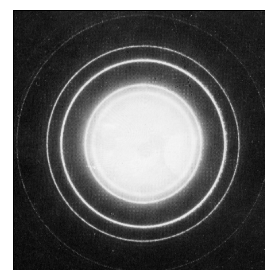
Evaporated Aluminium Film

Camera Length

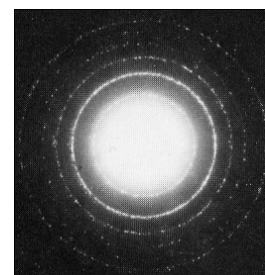
The nominal value of the effective camera length of an electron microscope operating in the selected area mode is not sufficiently accurate for any calculations of lattice spacing. The actual value of camera length must be calibrated at the same accelerating voltage and objective lens setting by reference to a known substance with well defined diffraction spacings. The normal specimens are evaporated films of *aluminium* or *thallous chloride*. The very small crystallite size yields ring patterns suitable for calibration purposes. Each specimen is supplied with a list of the principle lattice spacings.

D133	Evaporated aluminium film on 3mm grid	each
D072	Evaporated thallous chloride on 3mm grid	each

D133



D072



Molybdenum Oxide

Image Rotation

When changing from a selected area image of a specimen to a diffraction pattern, the strength of the intermediate lens is changed producing an image rotation between the image and the diffraction pattern. The amount of this rotation can be measured by photographing a crystal whose shape gives a clear indication of orientation. A molybdenum oxide crystal is very suitable for this purpose.

D073	Molybdenum oxide standard on 3mm grid	each
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D073

