

**CATALOGUE 39:
MICROSCOPES AND
ACCESSORY APPARATUS**

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Catalogue 39: Microscopes and Accessory Apparatus by Ernst Leits Wetzlar

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ERNST LEITS WETZLAR

**CATALOGUE 39:
MICROSCOPES AND
ACCESSORY APPARATUS**

CATALOGUE No. 39.

MICROSCOPES

AND

ACCESSORY APPARATUS.

ERNST LEITZ

WETZLAR

GERMANY.

— Founding in 1850. —

Branch Offices:

NEW-YORK
411 West 59th Str.

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≡ 1901. ≡

„Highest award“ Worlds Columbian Exhibition Chicago 1893.

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Notice.

All previous editions of this catalogue are superceded by the present one, which should be exclusively used in ordering.

All prices are net, without discount.

Orders will be filled at once after their receipt.

*In ordering care should be taken to give the **number** of each article desired.*

Goods are forwarded at the expense and risk of the purchaser.

*Our instruments for use in **Universities, Colleges, Schools &c.** of the **United States** are by law free of duty and we shall be pleased to make specially low quotations for such orders.*

*A special price list has been issued about our new **Photographic objectives „Periplan“** (D. R. Patent No. 116449).*

ERNST LEITZ.

New constructions.

Since issueing our last catalogue, a number of new apparatus have been added. The following are the more important ones:

1. Dissecting microscope with erect image, after Prof. R. Pfeiffer.
2. Large travelling or folding microscope.
3. Stand III. has been supplied with rack and pinion for coarse adjustment, instead of sliding tube.
4. Drawing apparatus after v. Tubeuf to draw from nature.
5. Attachment for the large projection-apparatus to project opaque object, called the Megascopee.
6. Microscope for the accurat reading of thermometer scales, according to Fridtjof Nansen.

Preface.

Our many patrons may be interested to know that the firm celebrated its 50th anniversary last year, having been founded in the year 1850.

This period has witnessed a gradual development of our business and optical works, until we now occupy the most important position in the world in this branch of business, employing about 300 workmen in the manufacture of the different instruments and accessories that are described in this catalogue.

As the result of long and exhaustive calculations we have constructed a series of **Photographic objectives** (D. R. Pat. No. 116449) the manufacture of which has become a special branch of our business. These objectives are characterized by an excellent definition, very high resolving power and great light transmission.

Photographic objectives of short focal distance find employment in photomicrography.

We take pleasure in calling attention to the fact, that we have now manufactured and sold **80,000 Compound Microscopes** and **25,000 Oil-Immersion Objectives** a large number of which are in the United States especially in the laboratories of Universities, Colleges and other Educational Institutions.

As far as the United States is concerned the establishment of **Branch-Offices** in **New York and Chicago** has been productive of the most gratifying results, materially facilitating the importation of our goods for institutions and enabling us to fill out orders from stock (dutypaid) immediately on receipt. Furthermore we are prepared at New York and Chicago to make any repairs or alterations, which may be desired on our instruments.

The management of our New York house is in the hands of Mr. **WILLIAM KRAFFT** and Mr. **RICHARD GIBSON** has charge of our Chicago office.

As heretofore, microscopes, bacteriological apparatus and all other scientific instruments or preparations expressly imported for use in educational institutions are exempt from duty.

Catalogues may be had on application by addressing:

Ernst Leitz,

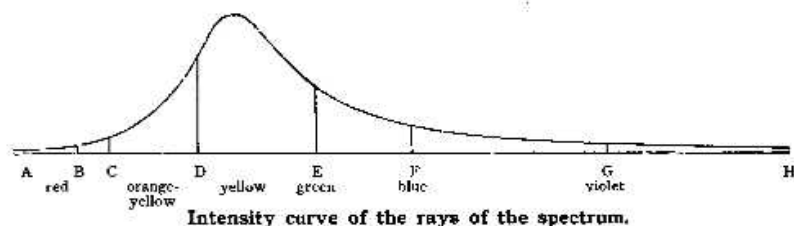
NEW YORK
411 West 59th Street

CHICAGO
659 West Congress-Str.

Objectives and Eye-pieces.

In the manufacture of our objectives only such glass is employed as has been subjected to the most rigid scientific tests. By these the exact index of refraction and the exact degree of dispersion of the glass are determined, and with these data available it is possible to very perfectly correct both spherical and chromatic aberrations while still making use of wide angular apertures in the objectives.

The following curve shows the brightness of the various parts of the spectrum, and it will be noted that the greatest light intensity is in the yellow near the line D.



In the correction of spherical aberration, our objectives are corrected for light coming from the yellow-green portion of the spectrum, thus insuring correction for the light of greatest intensity; and, similarly, in correcting chromatic aberration, three different corrections are made, for light from parts of the spectrum, represented by the lines C, D and F. When these various corrections are combined the resultant is an objective transmitting a maximum of light and still of the most perfect achromatism.

We would also direct attention to the fact that every objective before leaving our hands, is subjected to the most careful test and that only such objectives as are of the highest grade are sent out. We can therefore assure our patrons that our objectives are all of equal and excellent quality.

For the past fifteen years we have used exclusively glass manufactured by Schott & Co. of Jena. This glass has many points to recommend it for the construction of optical instruments, and has

gradually come into very general use for such purposes. The difficulty at first experienced resulting from deterioration of the glass and which for a time prejudiced microscopists against the Jena glass, has been entirely overcome in our objectives by careful selection of the glass, no glass being used which has not been thoroughly tested as to its durability. In consequence we have for many years had no trouble due to clouding of the glass in our objectives. That we have confidence in these representations is shown by the fact that we fully guarantee all our objectives, and will gladly repair any defect in them which may develop at any time, provided only that it has not arisen as the result of abuse.



The three illustrations given above afford an idea of the plan of construction of our achromatic objectives.

The first figure represents the plan of our low power objectives, and it will be noted that they consist of two doublets, each carefully corrected.

The central figure represents the plan of our high power dry objectives. A hemispherical front lens is combined with two doublets. The front lens is the chief magnifier of the combination, while the other lenses serve to correct the various aberrations.

The Oil-immersion, represented by the last figure, consists of a front lens, hemispherical, behind which is a meniscus, which is in turn followed by a doublet and a triplet, these latter acting as the correcting lenses of the combination.

We manufacture both **Achromatic** and **Apochromatic objectives**. They differ in that the glasses made use of in the apochromatics and the manner in which they are combined permit a more perfect correction of chromatic aberration. This advantage is not gained