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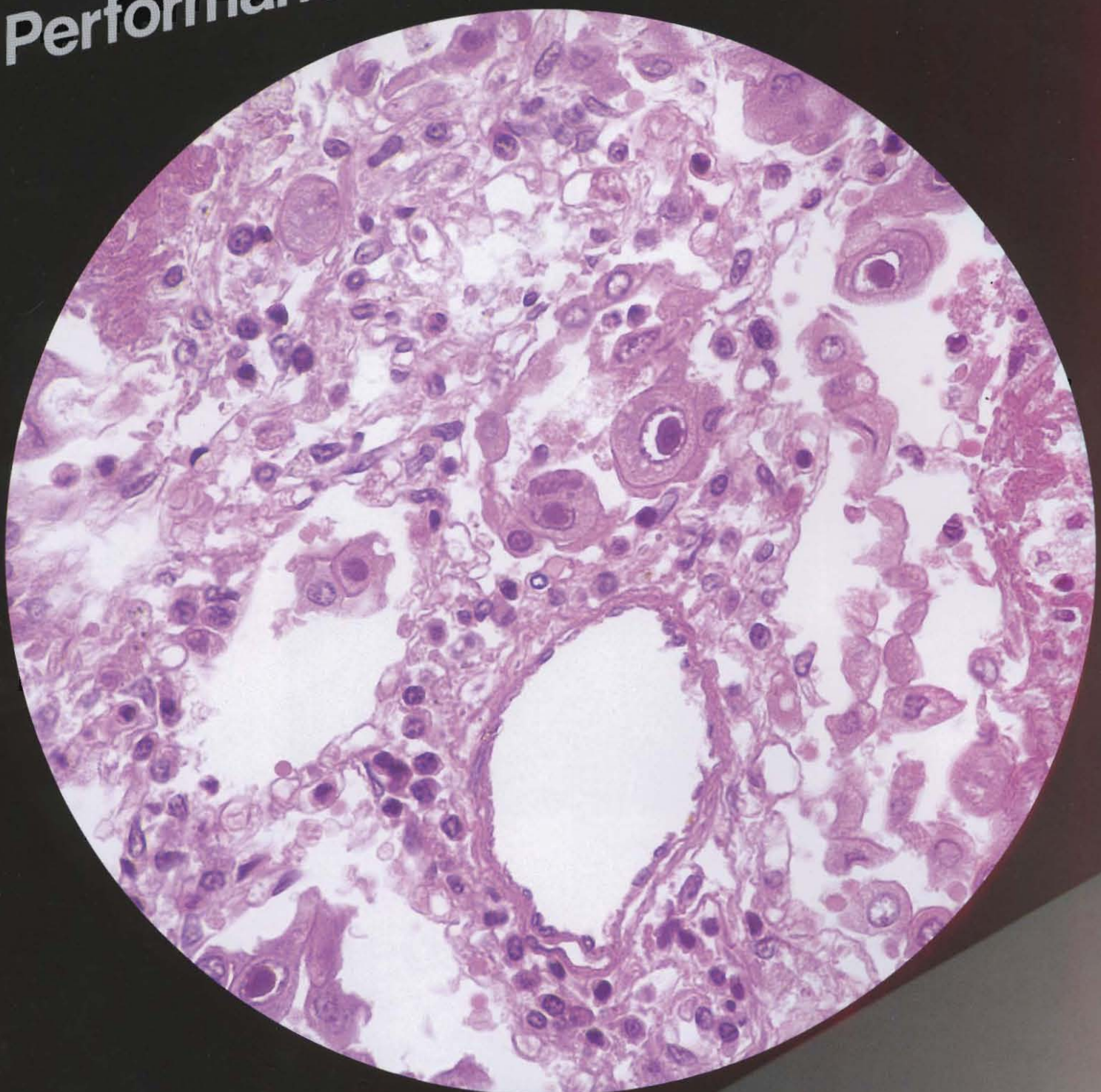
OLYMPUS®

CH2 SERIES

System Microscopes

The Olympus CH2 Series Extends the Capabilities for Education and Routine Research Work through the Performance of our LB Optics.



Unrivaled

A Powerful Second Generation Microscope Based on the Proven Design Philosophy of the Best-Selling CH Series.

When Olympus unveiled the CH Series Microscopes,
it changed the way classroom students and research scientists viewed the microcosm,
broadening their vision with a marriage of outstanding optics, precision focusing and a highly economical design.
Now Olympus raises these standards even higher with our CH2 Series Microscopes.
As a powerful design enhancement of the popular durable CH Series,
this versatile series combines the unprecedented performance of the advanced
Olympus LB Series Objectives with an optional field iris diaphragm and a brighter light source.
No other system meets a wider range of applications
from classroom training to laboratory and hospital work.

CHS **System Microscope,**
closing the gap to perfection in the classroom and in routine research work.
Our built-in 6V 20W halogen light source ensures brighter, sharper image observation. The emphasis on superior optics is particularly evident in darkfield, simple polarizing, and phase-contrast microscopy.

CHT **System Microscope,**
a powerful educational and routine research tool streamlined for universal application.
This enduring standard microscope combines a 30W tungsten light source with a high-performance reflector to satisfy an even broader range of educational and research requirements than before.

CHD **System Microscope,**
setting the performance standard in the field of education.
With a mirror illuminating the image, this precise yet simple, economical microscope is designed to meet or surpass the most demanding educational applications.

Olympus LB Series Objectives. Outstanding Brightness and Superb Resolution Expand Your Powers of Observation to the Periphery of the Viewing Field.

The true value of a microscope is inherently dependent on the quality of its optics. The CH2 Series features the renowned performance of the Olympus LB Series objectives, which are widely acclaimed for superior resolution and image contrast throughout the viewing field. Extended working distances optimize ease of operation and a brighter light source assures unimpeded observation.

Model CHS-213E
with field iris diaphram
model CH2-FS (optional)

A wide variety of LB Series Objectives include the ED Ach for performance plus economy.

The ED Ach objectives, specially developed for the CH2 Series microscopes, feature superior performance, yet are designed with economy in mind. The CH2 Series is also available with D Ach and D Plan Objectives, objectives for uncovered specimens, and others to suit many applications.

Newly-equipped LB Series Objectives bring the latest advances in optical technology clearly into view.

1. Higher Resolution
Resolving power, the reciprocal of resolution, refers to the minimum distance at which two small particles under the lens can be distinguished from each other. This distance is shorter using LB Series objectives than for most available lenses. The result is a much sharper image with more clearly defined specimen details.

2. Sharper Contrast
High resolution alone doesn't necessarily guarantee a clear image; contrast must also be high in order for the image to be crisp. The LB Series objectives optimize contrast by eliminating flare and other factors that can effect clarity, giving you a consistently superior image.

3. Improved Field Flatness
With some microscopes, aberrations in field curvature can adversely influence the quality of the image. But the LB Series objectives, including the Achromatic, compensate for curvature and ensure a maximally clear image.

4. Brighter Viewing Field
To make the most of the LB Series potential, both the collector and the condenser use highly efficient aspherical lenses. This ensures uniformly bright illumination to the perimeter of the viewing field.

5. Wider View Field
The Olympus CWHK10X eyepieces considerably widen the viewing field, to an impressive field number of 18, increasing observation efficiency. And by using the optional WHK10X eyepieces, the viewing field can be further extended to a field number 20.

Performance of Objectives

		Numerical Aperture	Working Distance
ED Achromat	4×	0.10	29.00mm
	10×	0.25	6.30
	40× (spring)	0.65	0.53
	100× oil (spring)	1.25	0.20
D Achromat (optional)	4×	0.10	18.23
	10×	0.25	7.18
	40× (spring)	0.65	0.63
	100× oil (spring)	1.30	0.20
D Plan Achromat (optional)	4×	0.10	7.03
	10×	0.25	7.40
	20× (spring)	0.40	0.83
	40× (spring)	0.65	0.47
	50× oil (spring, iris diaphragm)	0.90	0.23
	100× oil (spring)	1.25	0.17

Performance of Eyepieces

	Field Number
CWHK10×	18
WHK10× (optional)	20

The H5×LB (F.N.19), the P10×LB (F.N.13), and the P15×LB (F.N.10) eyepieces are optionally available for use with monocular observation tubes.

Down to the Most Minute Details, Olympus Pays Special Attention to User Needs, for Unparalleled Ease of Operation.

Keeping in mind various types of microscope methodology and user convenience, Olympus designers planned the CH2 Series to be both simpler and safer to use, so that even beginners can make optimum use of its multiple advantages.

CH-BI45-W Binocular Observation Tube
This tube has a diopter ring on one side to facilitate compensation for eye acuity. Graduated interpupillary-distance adjustment from 53 to 72mm. This feature is particularly convenient during group observation for educational purposes, since each user can memorize his individual optimum distance for more rapid interpupillary-distance setting. Moreover, a special Olympus coating process reduces light loss, delivering clear, bright images. The CH2 Series is also available with a monocular observation tube model CH-MO45-W.
The tube section is dust protected.

CH-MVR Attachable Mechanical Stage
The coaxial controls on this stage are positioned low for easy maneuverability. Moreover, it is equipped with ball bearings for smoother operation. Model CH-MVL (left-handed controls) is also availble.

Eyepiece
F.N. 18
Micrometer reticles (model OC-M) attachable

Revolving nosepiece (quadruple)
Like all high-grade Olympus microscopes, the CH2 Series quadruple revolving nosepiece is equipped with ball bearings for higher precision, improved durability, and operational ease.

Plain Stage
Wide stage size:
124(W) × 153(L)mm

Abbe Condenser
N.A. 1.25
w/Aperture diaphragm

Model CHS-213E

Binocular Tube
Interpupillary-distance adjustment range: 53-72mm
Eye acuity compensation

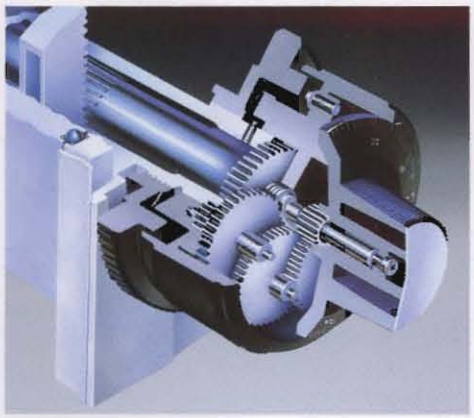
LB Objective

Mechanical Stage
Coaxial low drive controls
Stroke: 76(X) × 50(Y)mm

Coarse Adjustment Knob
Coarse/fine adjustment w/focusing limit control

Power Cord
Detachable power cord for extra convenience when storing.

Variable light Control
This rotating control permits continual adjustment of brightness. The built-in scale provides repeatability for extra convenience during photomicrography.



Coaxial Focusing Knobs
The coarse-adjustment knob has a built-in control to increase or decrease the tension of the focusing knob simply by rotating the adjustment ring. The fine-adjustment works over the entire coarse-focusing range, allowing quick, accurate focusing at any position.

Focusing Limit Control
In order to prevent collisions between objective and specimen due to accidental stage movement, the CH2 Series microscopes have a lever that prevents the stage from moving beyond a safe limit once the specimen is focused. Moreover, when replacing specimens, only fine focus adjustments are necessary with the stage at its upper limit.

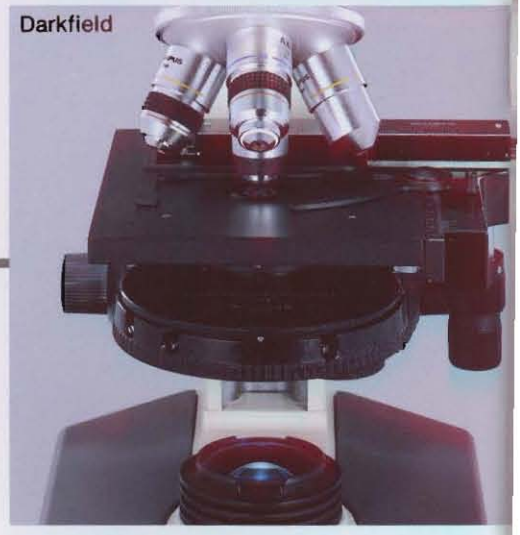
CH2-CD Abbe Condenser
The CH2-CD makes efficient use of the existing light to create the best illumination, depending on the objective in use. The result is unfailingly clear, sharp images. The N.A. 1.25 immersion-type condenser with an iris diaphragm takes the filter holder model CH2-FH.

CH2-FS Field Iris Diaphragm (optional)
This attachment is designed to offer Koehler illumination and consists of a diaphragm frame and an auxiliary lens. The CH2-FS reduces superfluous light to deliver images with sharper contrast.

CH2-FH Filter Holder
The CH2-FH accepts a 32.5mm diameter filter Olympus offers a wide variety of filters for different conditions: daylight; color-temperature conversion; heat absorption; color correction; sharp cut-off; light dispersion; and others. Moreover, a 45mm diameter filter can be inserted into the receptacle in the microscope base.

A Single Universal Condenser Uncovers the Mysteries of Brightfield, Darkfield, and Phase-Contrast Microscopy.

The CH2 Series system microscopes are designed to satisfy the broadest range of requirements. Olympus's newly developed universal condenser makes brightfield, darkfield, and phase-contrast microscopy possible with a single condenser. A number of other attachments are available including a simple polarizing accessory, extras which can be easily attached to the stand.

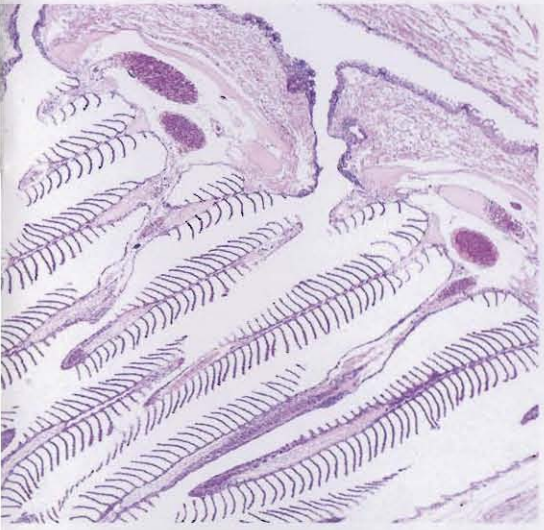


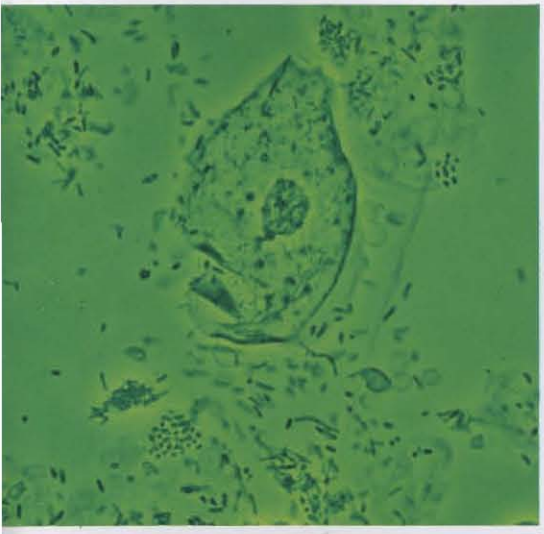
CH2-PCD Universal Condenser
This useful condenser can be set for three different types of microscopy simply by rotating the turret. Brightfield, darkfield, and phase-contrast microscopy with 10× and 40× phase objectives are easily accessible, dispensing with the need to replace condensers in order to change modes. For phase-contrast microscopy, Olympus offers the PC D Ach Series of LB objectives.

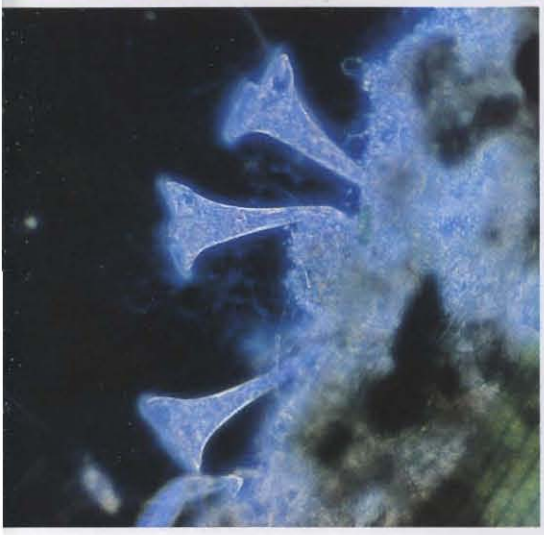
CH2-PCD-PL
Phase-Contrast/Darkfield Attachmeht
Combinations

Universal Condenser*	CH2-PCD
Centering Telescope	CT-5
Phase-Contrast Objective	PCD10×PL
	PCD40×PL

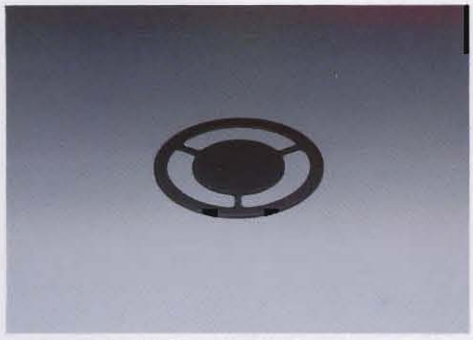
*45C-3 cobalt filter, 45G533 green-filter included.







CH2-PC-PL Simple Phase-Contrast Attachment
Attachment of a phase annular ring (model CH2-RS10/RS40) to the standard Abbe condenser enables easy, economical phase-contrast microscopy. The CH2-PC-PL comes with the phase-contrast objectives (PCD10×PL/40×PL), CT-5 centering telescope and 45G533 green-filter.



CH2-DS Darkfield Central Stop
For simple and efficient observation of specimens in darkfield, the CH2-DS is a valu able accessory. It works well with both low and medium-power objectives.

BH-DCD Dry Darkfield Condenser
The BH-DCD dry condenser delivers clear darkfield images without the need for time-consuming and troublesome immersion in oil. It functions well with objectives 10× to 40×.

BH2-PC Phase-Contrast Attachment
The BH2-PC is indispensable for observation of transparent specimens such as living cells and platelets and specimens with of low contrast. It can be used with 10× to 100× objectives, and there is a choice of four contrasts: PL (positive low), PLL (positive low low), NH (negative high), and NM (negative medium).

Combinations

Components	Module	BH2-PC-3	BH2-PC-4	BH2-PC-5	BH2-PC-6
Condenser	Phase-Contrast Turret Condenser, Centering Telescope, Green Filter	○	○	○	○
Phase-Contrast Objectives	PCD10×PL/ 20×PL/40×PL/ 100×PL oil	○			
	PCD10×PLL/ 20×PLL/40×PLL/ 100×PLL oil		○		
	PCD10×NH/ 20×NH/40×NH/ 100×NH oil			○	
	PCD10×NM/ 20×NM/40×NM/ 100×NM oil				○

CH2-POL Simple Polarizing Attachment
The CH2-POL is a simple polarizing attachment and consists of an Abbe condenser and a polarizing filter set.

Olympus Microscopy Is a World of Expanding Vision. Complete with Accessories that Add Power and Reach.

CH2-DO Dual Observation Attachment
This attachment helps students and researchers by enabling observation by two people simultaneously at the same direction, level of magnification, and brightness. An illuminated pointer, in either orange or green, can indicate specific sections of the specimen, and the observers can control the brightness of the pointer.

Combinations

Dual viewing body	BH2-DO-B
Binocular tube	BH-BI45-W
Transformer for Pointer Illumination	T-DO
Eyepieces (2 pcs.)	CWHK10×

BH2-DA Drawing Attachment
This attachment enables students and researchers to easily and accurately sketch the image under observation, as the tip of the drawing utensil is visible through the observation tube. Magnifications from 6.5× to 1,500× are possible.

BH2-CA Magnification Changer
This attachment changes the magnification power in three different steps by the rotation of a turret. The turret also carries a Bertrand Lens for accurate alignment of phase annuli.
- Magnifications: 1×, 1.25×, 1.5×
- Equipped with Bertrand Lens

LSD-W Table Stand Illuminator
This illuminator can be used with the model CHD microscopes. It offers a choice between parallel or convergent luminous flux.
- Comes with a 6V 30W tungsten lamp, an ND filter, and two replacement bulbs.
- This illuminator is used with the transformer TGHM and powercord UYCP.

LSK-3 Sub-Stage Illuminator
This illuminator is ideal for use with the model CHD microscopes, and is normally used when illumination via the microscope mirror is inadequate.

BH2-KMA Vertical Illuminator
The vertical illuminator is designed for the observation of metallic and other opaque specimens.
- This illuminator is also used with the LBM objectives, transformer, and a lamp housing.

BH2-KMA: 6V 15W tungsten lamp or 12V 50W halogen lamp.

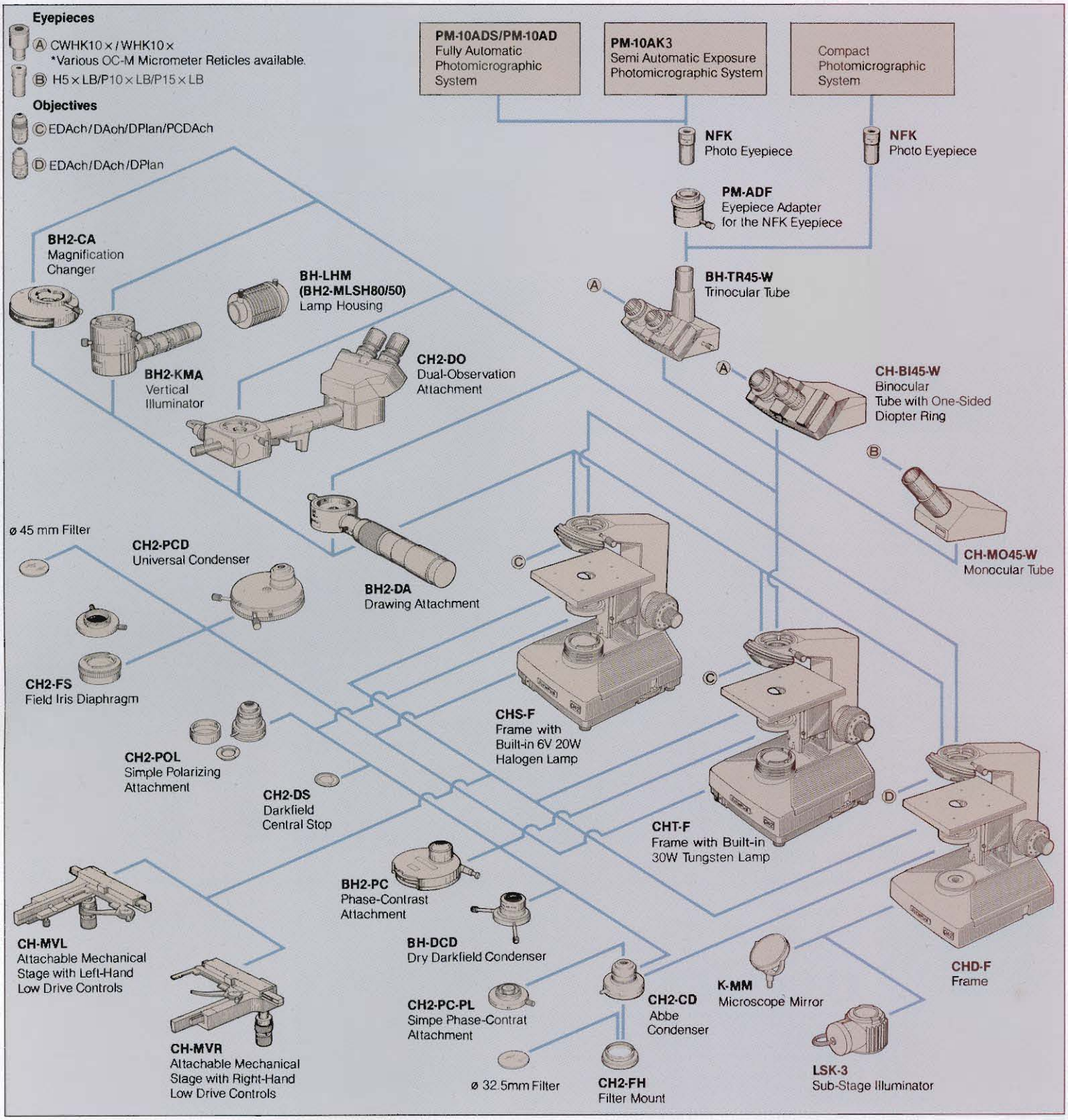
BH-TR45-W Trinocular Observation Tube
In order to facilitate full and accurate viewing in combination with a photomicrographic system, Olympus offers the BH-TR45-W, a trinocular tube for binocular viewing and a photo tube for simultaneous use of a camera system.

PM-10AK3 Semi-automatic Exposure Photomicrographic System
A wide variety of cameras, ranging from 35mm to large-format can be used to record observation findings. Equipped with a convenient mechanism that advances the film automatically, it ensures accurate photomicrographs.

PM-10M3 Compact Photomicrographic System
This lightweight, easy-to-handle system, complete with viewfinder, provides a very cost-efficient method of photomicrography, and it is specially designed for a 35mm format.

NFK Photo Eyepieces
Specially designed for use in photomicrography, the NFK eyepieces, when combined with the Olympus trinocular tube, make optimum use of the LB Series objectives in recording specimen data.

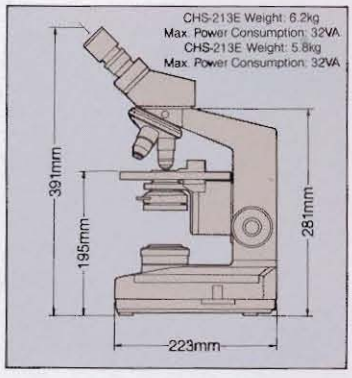
Diagram of CH2 Series System Microscopes

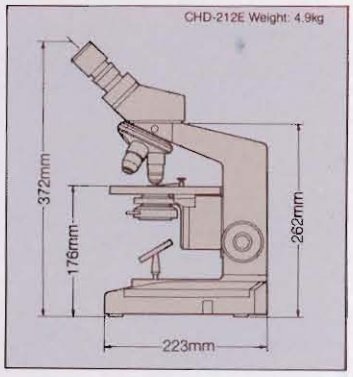


Specifications/Standard Outfits

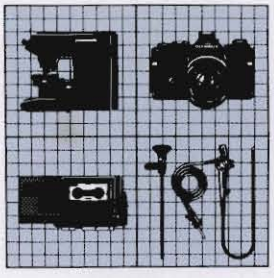
Module			Model	Educational/Laboratory Microscopes		Educational Microscopes		
				CHS	CHT	CHD		
				213E	213E	212E	012E	001E
Microscope Frame	●Coaxial coarse and fine focusing knobs, coarse adjustment range 25mm with focusing limit control lever and tension adjustment ring. Fine focusing knob graduated in increments of 2.5 microns. ●Plain stage 124 × 153mm. ●Quadruple revolving nosepiece. ●Including ø32.5mm blue filter, 8cc immersion oil and dust cover.	6V 20W halogen light source Built-in transformer variable light control	CHS-F	○				
		30W tungsten light source variable light control	CHT-F		○			
		ø50mm double-sided reflecting mirror (plano-concave lens)	CHD-F			○	○	○
Observation Tube	Monocular tube (45°)		CH-MO45-W				○	○
	Binocular tube (45°) Interpupillary distance adjustment range: 53 — 72mm Dioptric adjustment ring on the left		CH-BI45-W	○	○	○		
Stage	Attachable mechanical stage with coaxial low drive controls on the right, Traversing area 50mm × 76mm		CH-MVR	○	○	○	○	
	Stage clip (1 pair)		CH-SCB1					○
Condenser	Abbe type, N.A. 1.25 with aperture diaphragm		CH2-CD	○	○	○	○	○
Filter Holder	ø32.5mm filter mountable		CH2-FH	○	○	○	○	○
Power Cord			UYCP	○	○			
Bulb	6V 20W halogen bulb (2 pcs.)		6V20WHAL	○				
	30W tungsten bulb (2 pcs.)		30WSB		○			
Mirror	Plano-concave mirror		MM			○	○	○
Objective (long barrel)	ED Achromat 4X			○	○			○
	ED Achromat 10X			○	○	○	○	○
	ED Achromat 40X (spring)			○	○	○	○	○
	ED Achromat 100X oil (spring)			○	○	○	○	
Eyepiece	LB eyepiece 10X, F.N. 18, widefield, high eyepoint		CWHK10X	○ (2 pcs.)	○ (2 pcs.)	○ (2 pcs.)	○	○

Wooden case
(equipped with an easy-to-carry handle)
External dimensions:
264(W) × 305(D) × 449(H)mm + 25mm
(length of rubber legs and handle)





Specifications are subject to change without notice.



Photographic,
Medical,
Microscopic,
Industrial & Business Equipment

OLYMPUS

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