

Delphi-X Observer

Metallurgical

HIGHLIGHTS

- Brightfield and Darkfield EPI illumination
- Nomarski DIC (optional)
- Enhanced infinity corrected IOS optical system
- High contrast objectives with minimal aberrations
- Full Apo, Semi- Apo and Plan IOS objectives
- Super Wide field SWF 10x/25 mm eyepieces
- 100 W halogen illumination
- Sextuple reversed nosepiece with slot for DIC

SPECIFICATIONS

EYEPIECES

- Super Wide field SWF 10x/25 mm, Ø 30 mm tubes
- Extended Wide Field EWF 10x/22 mm, Ø 30 mm tubes (optional)

STANDARD HEAD

Siedentopf trinocular with 30° inclined tubes. Interpupillary distance adjustable between 47 and 78 mm. The trinocular standard head has an optical path selector (100:0 / 80:20 / 0:100). Diopter adjustment on both eyepieces

ERGONOMIC TILTING HEAD

Optional ergonomic 0 to 35° tilting trinocular head supplied with SWF 10x/25 mm eyepieces, interpupillary distance between 47-78 mm and photo tube with standard Ø 23.2 mm tube. The trinocular tilting head has an optical path selector (100:0 / 80:20 / 0:100). Diopter ± 5 adjustments on both eyepieces

NOSEPIECE

Revolving sextuple reversed nosepiece on ball-bearings with 26 mm objectives mounting threads



● DX.2053-PLMRi

DX.2053-PLMRi
DX.2058-PLMRi

510 (h) x 261 (w) x 367 mm (d) | 21.1 kg
582 (h) x 261 (w) x 367 mm (d) | 21.6 kg

INFINITY OPTICAL SYSTEM (IOS)

The infinity optical system (IOS) of the Delphi-X Observer™ consists of Super wide field SWF 10x25 mm eyepieces, high numerical aperture 45 mm parafoal objectives and a 200 mm focal length tube lens. The 200 mm focal length tube lens reduces the angle of the light rays passing through the optics and as a direct result improving significantly the chromatic aberration corrections and contrast. The objectives with larger diameter enable much higher numerical apertures improving the overall resolving power of the optical system

For all these reasons the Delphi-X Observer™ offers superior optical performance for the most demanding applications

- The stage of the Delphi-X Observer metallurgical can be mounted in two positions



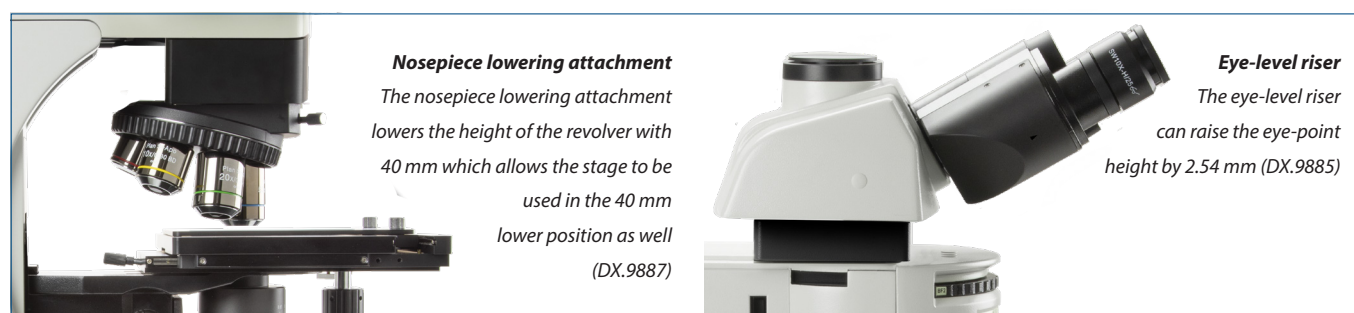
OBJECTIVES

The Delphi-X Observer™ is standardly supplied with Plan Semi-Apochromatic BD 5x/0.15 WD 20 mm, 10x/0.30 WD 11 mm and 20x/0.45 WD 3.1 mm Plan Apochromatic BD 50x/0.80 WD 1 mm, 100x/0.90 WD 1 mm objectives infinity corrected brightfield/darkfield objectives

Plan Semi-Apo (SAMI)	5x/0.15, WD 20 mm	10x/0.30, WD 11 mm	20x/0.45, WD 3.1 mm		
Plan Apo (PLAMi)				50x/0.80, WD 1 mm	100x/0.90, WD 1 mm*
Plan (PLMi)	2x/0.06, WD 7.5 mm*				

* Optional

All objectives are 45 mm parafoal and have a M26 mm mounting thread. All optics are anti-fungus treated and anti-reflection coated for maximum light throughput



STAGE

- Large 215 x 170 mm stage with 105 x 105 mm integrated right-handed mechanical stage, with glass and metal insert
- Stage height can be lowered for large samples (1 to 28 mm standard sample size, lowered to 55 mm sample size)

For user ergonomics the stage height can be lowered by one inch while maintaining standard sample height, using the optional nose piece lowering attachment (DX.9887)

FOCUSING

Coaxial coarse and fine adjustment, 100 graduations, 1 µm precision, 100 µm per rotation, total travel range is approximately 35 mm. Supplied with an adjustable rack stop to prevent damage to sample and objectives. The coarse adjustments are equipped with friction control. The focusing knobs can be switched from left to right according to the user's preference

LONG W.D. CONDENSER

In height adjustable long working distance N.A. 0.65 condenser (10.2 mm) with numerical aperture identification marks allows easy setting

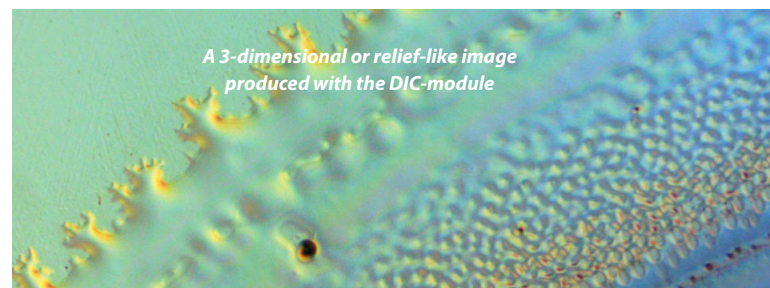
ILLUMINATION

The Delphi-X Observer materials science microscope is equipped with Epi and Diascopic intensity adjustable 100 W halogen illumination with internal 100-240 Vac power supply. The diascope halogen illumination comes with two push-in/push-out neutral density filters for attenuation of the light intensity for all kinds of samples and one Light Balancing Daylight filter (LBD)

The microscope comes standard with a analyzer and a polarizer which can easily be inserted into the free slots into the Epi-Illuminator for high quality polarized images. Further a rotating cassette is implemented for quick changing between darkfield, brightfield and dimmed brightfield

NOMARSKI DIC (OPTIONAL)

With the redesign of the DIC-module visualization of height differences which normally cannot be displayed using brightfield techniques has greatly improved. These relief-like images are ideal for surface inspections of wafers, LCD screens etc



CARRYING GRIP

The carrying grip at the back of the microscope ensures safe transportation of the microscope and the integrated tool and holder makes sure the right tool is always available

PACKAGE CONTENT

Supplied with power cord, dust cover, a spare fuse, user manual and universal tool. All packed in a polystyrene box

MODELS	Fixed 30 degree Siedentopf head	Ergonomic tilting head	SWF 10x/25 mm eyepieces	Plan BD 2x/0.06 objective*	Plan Semi-Apochromatic BD 5x/0.15, 10x/0.30 and 20x/0.45 objectives*	Plan Apochromatic BD 50x/0.80 objective*	Plan Apochromatic BD 100x/0.90 objective*	100 W 12 V transmitted halogen Köhler illumination	100 W 12 V reflected halogen Köhler illumination	Differential interference Contrast (DIC)
DX.2053-PLMRI	•		•	o	•	•	o	•	•	o
DX.2058-PLMRI		•	•	o	•	•	o	•	•	o
DX.2053-PLMi	•		•	o	•	•	o		•	o
DX.2058-PLMi		•	•	o	•	•	o		•	o

* Infinity corrected

o = optional



● Revolver with slot for Nomarski DIC slider



● DX.2058-PLMRI

ACCESSORIES AND SPARE PARTS

EYEPIECES

DX.6010	Super wide field SWF 10x/25 mm eyepiece for Ø 30 mm tube
DX.6010-CM	Super wide field SWF 10x/25 mm eyepiece with 10/100 micrometer and crosshairs for Ø 30 mm tube
DX.6210	Super wide field SWF 10x/22 mm eyepiece for Ø 30 mm tube
DX.6210-CM	Super wide field SWF 10x/22 mm eyepiece with micrometer and crosshairs for Ø 30 mm tube
DX.6012	Wide field WF 12.5x/17.5 mm eyepiece for Ø 30 mm tube
DX.6015	Wide field WF 15x/16 mm eyepiece for Ø 30 mm tube
DX.6020	Wide field WF 20x/12 mm eyepiece for Ø 30 mm tube
DX.6099-L	Eyeshade for eyepieces

OBJECTIVES

*Plan infinity corrected metallurgical PLMi**

DX.8102	2x/0.06 PLMi objective. WD 7.5 mm
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*Plan Semi-Apochromatic infinity corrected metallurgical PL-SAMi**

DX.8105	5x/0.15 BD PL-SAMi objective. WD 20 mm
DX.8110	10x/0.30 BD PL-SAMi objective. WD 11 mm
DX.8120	20/0.45 BD PL-SAMi objective. WD 3.1 mm

*Plan Apochromatic infinity corrected metallurgical PL-AMi**

DX.8150	50x/0.80 BD PL-SAMi objective. WD 1 mm
DX.8100	100x/0.90 BD PL-AMi objective. WD 1 mm

IOS 45 mm parfocal, no coverglass correction. M26 thread

WD = Working distance

STAGE OPTIONS

DX.9502-R	Plain mechanical stage right handed
DX.9502-L	Plain mechanical stage left handed
DX.9501-R	Stage with Gorilla glass, hole and specimen holder. Right handed
DX.9501-L	Stage with Gorilla glass, hole and specimen holder. Left handed
DX.9504-R	Stage with Sapphire glass, hole and specimen holder. Right handed
DX.9504-L	Stage with Sapphire glass, hole and specimen holder. Left handed

MISCELLANEOUS

DX.9696	DIC attachment for materials sciences Delphi-X Observer models
DX.9704	Yellow filter for lamphouse, diameter 45 mm
DX.9810	C-mount with 1 magnification for C-mount camera
DX.9835	C-mount with high resolution relay 0.35x objective for 1/3 inch C-mount camera
DX.9850	C-mount with high resolution relay 0.50x objective for 1/2 inch C-mount camera
DX.9863	C-mount with high resolution relay 0.63x objective for 2/3 inch C-mount camera
DX.9885	25.4 mm eye-level riser (1 inch)
DX.9887	40 mm nosepiece and stage lowering attachment
DX.9961	100 Watt 12 V halogen bulb for Delphi-X Observer (revision 2 models)
AE.5216	Fuses 5A 250 V, per 10 pcs. models with 100 W halogen
AE.5130	Universal SLR-adaptor with built-in 2x lens for standard 23.2 mm tube. Needs T2 adapter
AE.5025	T2 ring for Nikon D SLR-digital camera
AE.5040	T2 ring for Canon EOS SLR-digital camera
PB.5245	Lens cleaning paper, 100 sheets per pack
PB.5255	Immersion oil, 25 ml. Refraction index n = 1.482
PB.5274	Iso propyl alcohol 99%, 200 ml
PB.5275	Cleaning kit: lens fluid, lint free lens tissue paper, brush, air blower, cotton swabs
PB.5276	Microscope maintenance and servicing kit, 16pcs: cleaning brush, 6 pcs screwdriver set, air blower, 3 pcs Allen key, 1.5, 2, 2.5 mm, lens cleaning fluid 20 ml, cleaning cloth 140 x 140 mm, 100 pcs Lens tissue sheets, tube of maintenance grease, 10 ml bottle of oil, packed in a nice toolbox