LIVE ON STAGE

Live Cell Microscopy
Environmental Equipment for
Leica Inverted and Upright Microscopes
2019-05-27
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A STAGES
STAGES WITHOUT TEMPERATURE CONTROL
(A1-A11)

A1 – Fixed Stage Plate
(248 mm x 204 mm) for DMI8 (compatible with DMI- and DMIR-series)
- high-quality aluminum
- ceramic-coated
- extremely scratchproof
- precisely plane-parallel
- three point mounting

guarantee long-term stability regardless of environmental conditions. The Fixed
Stage Plate is supplied with a round 88 mm insert with a 10 mm opening (for ad-
ditional inserts with different openings see “A3 – 88 mm Round Inserts”)

<table>
<thead>
<tr>
<th>Fixed Stage Plate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Material:</td>
<td>Aluminum, black anodized</td>
</tr>
<tr>
<td>Inserts:</td>
<td>“A3 – 88 mm Round Inserts”</td>
</tr>
<tr>
<td>Options:</td>
<td>attachable object guide</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>(L x W x H) in mm: 248 x 204 x 20</td>
</tr>
<tr>
<td>Includes:</td>
<td>88 mm insert ring with an opening of 10 mm</td>
</tr>
<tr>
<td>Compatible:</td>
<td>“B5 – Object guide for fixed stages”</td>
</tr>
<tr>
<td></td>
<td>“A3 – 88 mm Round Inserts”</td>
</tr>
<tr>
<td>Weight:</td>
<td>1.45 kg</td>
</tr>
</tbody>
</table>

A2 – Slim Fixed Stage Plate
(248 mm x 112 mm) for DMI8 (compatible with DMI- and DMIR-series)
- for micromanipulation
- high-quality aluminum
- ceramic-coated
- extremely scratchproof
- precisely plane-parallel
- three point mounting

guarantee long-term stability regardless of environmental conditions. The Slim
Fixed Stage Plate is supplied with a round 88 mm insert with a 10 mm opening (for
additional inserts with different openings see “A3 – 88 mm Round Inserts”).

<table>
<thead>
<tr>
<th>Slim Fixed Stage Plate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Material:</td>
<td>Aluminum, black anodized</td>
</tr>
<tr>
<td>Inserts:</td>
<td>“A3 – 88 mm Round Inserts”</td>
</tr>
<tr>
<td>Options:</td>
<td>attachable object guide</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>(L x W x H) in mm: 248 x 112 x 20</td>
</tr>
<tr>
<td>Includes:</td>
<td>88 mm insert ring with an opening of 10 mm</td>
</tr>
<tr>
<td>Compatible:</td>
<td>“B1 – Object guide for slim fixed stages”</td>
</tr>
<tr>
<td></td>
<td>“A3 – 88 mm Round Inserts”</td>
</tr>
<tr>
<td>Weight:</td>
<td>0.90 kg</td>
</tr>
</tbody>
</table>
A3 – 88 mm Round Inserts
with different openings for fixed stage plates, slim 3-plates stages and 160 x 110 mm plates

<table>
<thead>
<tr>
<th>Insert with 5 mm opening</th>
<th>11522083</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert with 10 mm opening</td>
<td>11522084</td>
</tr>
<tr>
<td>Insert with 20 mm opening</td>
<td>11522085</td>
</tr>
<tr>
<td>Insert with 40 mm opening</td>
<td>11522086</td>
</tr>
</tbody>
</table>

88 mm Round Openings
- Material: Aluminum, black anodized; steel
- Dimensions: 88 mm diameter
- Weight: 0.15 kg
- Compatible: “A1 – Fixed Stage Plate”
  “A2 – Slim Fixed Stage Plate”
  “A5 – Slim Manual 3-plate-stage 40 mm x 40 mm”
  “A7 – Slim Motorized 3-Plate-Stage 35 x 35 mm”
  “C4 – Metal Plate lowered by 4 mm”
  “C7 – Plane stage insert”

A4 – Manual 3-Plate-Stage 127 mm x 83 mm
for DMi8 (compatible with DMI- and DMIR-series)

Fast and accurate access to interesting areas of the sample is achieved by the adaptation of the manual 3-plate-stage onto a Leica DMi8 Microscope. It allows rapid and vibration free scanning even at highest microscope magnifications.
- positioning range 127 mm x 83 mm
- for 160 mm x 110 mm inserts
- high-quality aluminum
- extremely scratchproof
- precisely plane-parallel
- three point mounting

Manual 3-plate-stage
- Material: Aluminum, black anodized
- Compatible Inserts: Rectangular 160 x 110 mm (see Chapter: C)
- Positioning range: 127 mm x 83 mm
- Dimensions: (L x W x H) in mm: 365 x 335 x 27
- Requirements: Insert
- Weight: 1.90 kg
**A5 – Slim Manual 3-plate-stage 40 mm x 40 mm 11522077**

**for DMi8 (compatible with DMI- and DMIR-series)**

Fast and accurate access to interesting areas of the sample is achieved by the adaptation of the slim manual 3-plate-stage onto a Leica DMi8-Microscope. It allows rapid and vibration free scanning even in combination with micromanipulation.

- positioning range 40 mm x 40 mm
- including an 88 mm round insert (10 mm opening)
- extremely scratchproof
- precisely plane-parallel

Guarantee long-term stability regardless of environmental conditions. The ergonomic operating handle with low position coaxial x/y controls does not interfere with microscope controls or camera ports. The slim manual 3-plate-stage is supplied with a round 88 mm insert with a 10 mm opening. Additional inserts with different openings see “A3 – 88 mm Round Inserts”.

**Slim manual 3-plate-stage**

- Material: Aluminum, black anodized
- Compatible Inserts: “A3 – 88 mm Round Inserts”
- Positioning range: 40 x 40 mm
- Dimensions: (L x W x H) in mm: 235 x 325 x 27
- Includes: 88 mm insert ring with an opening of 10 mm
- Weight: 1.40 kg

**A6 – Motorized 3-Plate-Stage 127 mm x 83 mm 11525225**

**for DMi8 (not compatible with DMI- and DMIR-series)**

Fast and accurate access to interesting areas of the sample is achieved by the adaptation of the regular motorized 3-plate-stage onto a Leica DMi8-Microscope. It allows a predefined vibration free scanning even at highest microscope magnifications.

- positioning range 127 x 83 mm
- for 160 x 110 mm inserts
- extremely scratchproof
- precisely plane-parallel

Guarantee long-term stability regardless of environmental conditions. The motorized 3-plate-stage comes without insert. Inserts for different vessels and applications (see Chapter: C).

**Motorized 3-plate stage**

- Material: Aluminum, black anodized
- Compatible Inserts: Rectangular 160 x 110 mm (see Chapter: C)
- Positioning range: 127 x 83 mm
- Resolution: 0.7 μm
- Accuracy: < 20 μm
- Repeatability: < 3 μm
- Dimensions: (L x W x H) in mm: 375 x 330 x 27
- Requirements: Leica CTR advanced 11525207-11525209
  Leica CTR board XY-Basic 11525210
  SmartMove 11525115 or STP8000 11525113
  Insert
- Weight: 2.90 kg
A7 – Slim Motorized 3-Plate-Stage 35 x 35 mm
for DMi8 (not compatible with DMI- and DMIR-series)

Fast and accurate access to interesting areas of the sample is achieved by the adaptation of the slim motorized 3-plate-stage onto a Leica DMi8-Microscope. It allows vibration free scanning even in combination with micromanipulation.

- positioning range 35 x 35 mm
- including an 88 mm round insert (10 mm opening)
- high-quality aluminum
- extremely scratchproof
- precisely plane-parallel
- three point mounting

A new safety concept ensures no clamping and minimizes the risk of injury. The slim motorized 3-plate-stage is supplied with a round 88 mm insert with a 10 mm opening. Additional inserts with different openings see “A3 – 88 mm Round Inserts”.

A8 – Leica Scanning Stage 127x83
for DMi8 (compatible with DMI- and DMIR-series)

Motorized scanning stages have been designed for applications where high stage accuracy and repeatability is required in combination with smooth and quiet running. The use of top quality materials and manufacturing with tight tolerances guarantees the optimum performance even after long periods of operation. Depending on the application, scanning stages with different lead screw pitches (1 mm, 2 mm or 4 mm) and thus different travel speed are utilized (smaller lead screw pitch ensures higher precision and lower speed). Leica offers the 1 mm lead screw pitch as standard.
Leica Scanning stage 127x83

- **Material:** Aluminum, black anodized
- **Compatible Inserts:** Rectangular 160 x 110 mm (see Chapter: C)
- **Positioning range:** 127 x 83 mm
- **Max. Travel speed:** 60 mm/sec
- **Resolution:** 0.02 μm
- **Accuracy:** +/- 3 μm
- **Repeatability:** < 1 μm
- **Dimensions:** (L x W x H) in mm: 450 x 270 x 20
- **Requirements:** Insert (see Chapter: C)

Leica CTR advanced 11525207-11525209
Leica CTR board XY-advanced 11525211
SmartMove 11525115 or STP8000 11525113

- **Compatible with:**
  - Water Immersion Micro Dispenser 11640019
  - SuperZ 11640260, all i8 Incubator Series
- **Weight:** 4.90 kg

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A9 – SCANplus IM 130x85

**for DMI8 (compatible with DMI- and DMIR-series)**

Scanning stage IM with encoder for inverted microscopes Leica DMI3000-6000 B, Tango 2 Desktop-Control, 2-Axis, 1.25 A, ROHS-conform, including documentation and software, with USB interface.

- positioning range 130 mm x 85 mm
- for 160 x 110 mm inserts
- high-quality aluminum
- extremely scratchproof
- precisely plane-parallel
- three point mounting
- both motors on the bottom
- with USB cable, stage cables, SmartMove-Y-cable

The SCANplus IM 130x85 is delivered without insert. Inserts for different vessels and applications (see Chapter: C).

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SCANplus IM 130x85

- **Material:** Aluminum, black anodized
- **Compatible Inserts:** Rectangular 160 x 110 mm (see Chapter: C)
- **Spindle lead:** 2 mm
- **Positioning range:** 130 x 85 mm
- **Max. Travel speed:** 120 mm/sec
- **Resolution:** 0.01 μm
- **Accuracy:** +/- 1 μm
- **Repeatability:** < 0.5 μm
- **Dimensions:** (L x W x H) in mm: 450 x 270 x 20
- **Requirements:** Insert (see Chapter: C)
- **Compatible with:**
  - Water Immersion Micro Dispenser 11640019
  - SuperZ 11640260, all i8 Incubator Series
- **Weight:** 4.90 kg

Tango 2 Desktop-Control
2-Axis, 1.25 A

ROKS-conform, incl. documentation and software with
- USB2.0 interface
- Ergodrive 2
- stage and USB2.0 cables

Note:
Always connect the Tango controller to an completely empty USB-bank.
A11 – Quantum high precision scanning stage incl. controller 11525456

for DMI8 (compatible with DMI- and DMIR-series)
• direct positioning in 2 axes with 2 linear motors
• absolute measuring of the position, no referencing necessary
• Hydra controller with Ethernet, RS-232 and USB communication
• positioning range 122 x 82 mm, for 160 x 110 mm inserts
• extremely scratchproof
• precisely plane-parallel, three point mounting
• both motors on the bottom
guarantee long-term stability regardless of environmental conditions. The Quantum linear motor stage combines practical design with high precision and stability. The flat top design facilitates the use of micromanipulators as well as environmental chambers.

It also allows easy, unrestricted access to the specimen. The Quantum high precision scanning stage is delivered without insert. Inserts for different vessels and applications (see Chapter: C).

A unique safety concept ensures no clamping, motor stops, and can be started again without rebooting the system. Unique feature: User can position the stage directly by hand for quicker multi position setup.

ITK LMT200
• Material: Aluminum, black anodized
• Compatible Inserts: Rectangular 160 x 110 mm (see Chapter: C)
  for 11522151: no plane inserts
• Positioning range: 122 x 82 mm
• Max. Travel speed: 500 mm/sec
• Resolution: 5 nm
• Accuracy: <+/– 1 μm
• Repeatability < 1 μm
• Dimensions: (L x W x H) in mm: 492 x 270 x 20
• Includes: Hydra control unit and hand-wheel
• Requirements: Insert
• Compatible with: SuperZ 11640260, all i8 Incubator series
• Weight: 3.50 kg
The heating stages are one solid piece with high thermal capacity which guarantees homogeneous temperature distribution. The object guide (see "B1 – Object guide for slim fixed stages"/"B5 – Object guide for fixed stages") and/or other accessories can be attached. All commonly used cultivation vessels can be put onto this stage. The opening for the objective is as small as possible to optimize the heat transfer. Temperature control is carried out with the "F1 – TempController 2000-1" or "F2 – TempController 2000-2".

- extremely scratchproof
- precisely plane-parallel

guarantee long-term stability regardless of environmental conditions.

**A22 – Slim Fixed Heating Stage 248 mm x 112 mm**  
**Art.-No.: 11533026**  
for DMi8 (compatible with DMI- and DMIR-series)

The slim fixed heating stage is prepared for the right-handed adaptation of a mechanical object guide. (see "B1 – Object guide for slim fixed stages")

<table>
<thead>
<tr>
<th>Slim Fixed Stage</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material:</td>
<td>Aluminum, black anodized</td>
</tr>
<tr>
<td>Options:</td>
<td>attachable object guide</td>
</tr>
<tr>
<td>Dimensions:</td>
<td>(L x W x H) in mm: 248 x 112 x 20</td>
</tr>
<tr>
<td>Oval stage opening:</td>
<td>20 x 30 mm</td>
</tr>
<tr>
<td>Voltage/power:</td>
<td>20 V DC, 2.2 A max</td>
</tr>
<tr>
<td>Heating:</td>
<td>Transistor lost heat</td>
</tr>
<tr>
<td>T-Control accuracy:</td>
<td>+/- 0.1°C</td>
</tr>
<tr>
<td>Control Range:</td>
<td>3°C above ambient temperature up to 60°C</td>
</tr>
<tr>
<td>Compatible:</td>
<td>&quot;B1 – Object guide for slim fixed stages&quot;</td>
</tr>
<tr>
<td>Weight:</td>
<td>1.60 kg</td>
</tr>
</tbody>
</table>
The cooling stages are one solid piece with high thermal capacity which guarantees homogeneous temperature distribution. The object guide (see "B1 – Object guide for slim fixed stages"/"B5 – Object guide for fixed stages") and/or other accessories can be attached. All commonly used cultivation vessels can be put onto this stage. The opening for the objective is as small as possible to optimize the temperature transfer. In case of temperatures below approx. +10°C the use of a dehumidifier and/or of dried air (to prevent condensation) is recommended. Temperature control is carried out with the cooling thermostat.

- extremely scratchproof
- precisely plane-parallel

Guarantee long-term stability regardless of environmental conditions.

**A31 – Fixed Cooling Stage 248 mm x 212 mm**

11522013

**for DMi8 (compatible with DMI- and DMIR-series)**

The fixed cooling stage is prepared for the right-handed adaptation of a mechanical object guide (see "B5 – Object guide for fixed stages").

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**Fixed cooling Stage**

- **Material:** Aluminum, black anodized
- **Options:** attachable object guide
- **Dimensions:** (L x W x H) in mm: 248 x 212 x 20
- **Oval stage opening:** 20 x 30 mm
- **Cooling:** Inlet and outlet openings for liquids
- **Control Range:** see specification of thermostat
- **Requirements:** "D5 – Thermostat"
- **Compatible:** "B5 – Object guide for fixed stages"
- **Weight:** 2.30 kg

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**A31**

Fixed Cooling Stage

(248 mm x 212 mm) for Leica DMi8-Series

Art.-No.: **11522013**
FAST Z-MOVEMENT – (A41)


A42 – SuperZ widefield
for DMi8 (compatible with DMI- and DMIR-series) for 3 plate- and scanning stage
Requires Sequenzer Board 11525213

Inserts

A43 – Insert for SuperZ rotatable

A44 – Insert for SuperZ universal

C22 – Insert GL-Set
including holders for ibidi and Lab-Tec chambers

A45 – Insert SuperZ for microplates

A46
Insert SuperZ for microplates
Art.-No.: 11640416
OBJECT GUIDES AND HOLDING FRAMES FOR SLIM FIXED STAGES

Object guides are an ideal adaptation for fixed, heated or even cooled stages. With only 2 fixing screws the object guide can be easily and securely adapted to the fixed stage for right-handed or in case of regular sized stages even for left-handed use. The ergonomic, low-lying coaxial control drives with universal joint is extremely accurate and sensitive. For precise positioning measurement, different measuring inserts can be fixed onto the objective guide.

**B1 – Object guide for slim fixed stages**

A flexible mechanical device with coaxial drive for x and y for the fixed slim stages to accommodate 3 different inserts (B2-B4) . The ergonomic operating arm is angled forward in low position not interfering with microscope controls or camera ports.

- Material: Aluminum, black anodized
- Positioning range: 35 x 35 mm.
- Requirements: "A2 – Slim Fixed Stage Plate" or
  "A22 – Slim Fixed Heating Stage 248 mm x 112 mm" or
  "A32 – Slim Fixed Cooling Stage 248 mm x 112 mm"
- Weight: 0.70 kg

**B4 – Holding frame for glass slides 76 mm x 26 mm**

The holding frames for the object guide for slim stages are positioned and held by 2 locking screws.

- Material: Aluminum, black anodized
- Dimensions: (L x W x H) in mm: 140 x 106 x 3
- Requirements: "B1 – Object guide for slim fixed stages"
- Compatible: "A2 – Slim Fixed Stage Plate" or
  "A22 – Slim Fixed Heating Stage 248 mm x 112 mm" or
  "A32 – Slim Fixed Cooling Stage 248 mm x 112 mm"
- Weight: 0.10 kg
OBJECT GUIDES AND HOLDING FRAMES FOR FIXED STAGES

B5 – Object guide for fixed stages 11522014
A flexible mechanical device with coaxial drive for x and y for the fixed stages to accommodate a variety of different inserts (B6-B6ff). The precise snap-in mechanism for the inserts ensures precise fixing of each of the inserts. The ergonomic operating arm in low position not interfering with microscope controls or camera ports. The object guide for fixed stages is compatible with the “Incubator i8” series.

• Material: Aluminum, black anodized
• Positioning range: 127 x 83 mm.
• Requirements: “A1 – Fixed Stage Plate” or “A31 – Fixed Cooling Stage 248 mm x 212 mm”
• Weight: 0.90 kg

NON HEATED HOLDING FRAMES FOR OBJECT GUIDE FOR REGULAR STAGE

The holding frames for this object guide are fixed with a precise snap-in mechanism. The outer dimensions are: 165 x 100 x 5 mm. There are holders for special vessels available, as well as universal holders with 2 or 4 smooth running moveable brackets with a variable clamping range allowing an easy an quick fixation of different sized dishes or slides. Universal holders are available in heated and non-heated versions.

• Material: Aluminum, black anodized
B6 – Holder for tissue culture plates (e.g. 24 wells)  11520584
The one-piece holder for culture plates and trays clicks into the object guide.
- For vessel size:  133.5 x 88.5 mm
- Requirements:  "B5 – Object guide for fixed stages"
- Weight:  0.09 kg
- Type of vessels:  Trays, culture chambers, flasks

B7 – Holder for Terasaki Plates  11520585
The one-piece holder for Terasaki 60 well or 72 well plates with a footprint of 82 mm x 56 mm.
- For vessel size:  56 x 82 mm
- Requirements:  "B5 – Object guide for fixed stages"
- Weight:  0.10 kg
- Type of vessels:  Terasaki Trays

B8 – Holder for flasks, bottles or plankton chambers Type1  11520586
The one-piece holder for different types of flasks, bottles or plankton chambers.
- For vessel size:  125 x 77 mm
- Requirements:  "B5 – Object guide for fixed stages"
- Weight:  0.09 kg
- Type of vessels:  Flasks, bottles, plankton chambers

B10 – Holder for Micro-Titer Trays  11520589
The one-piece insert for 96-well or 120-well Micro-Titer Trays with a common footprint of 127 x 85 mm. X and Y scaling bars are part of the holder and can be fixed onto the object guide. Easy finding of desired well is ensured.
- For vessel size:  127 x 85 mm
- Requirements:  "B5 – Object guide for fixed stages"
- Weight:  0.09 kg
- Type of vessels:  Micro-Titer Trays

B11a – Holder for Petri Dish Ø 88 mm  11520590
The one-piece holder for Petri dishes 100”.
- For vessel size:  Ø 88 mm
- Requirements:  "B5 – Object guide for fixed stages"
- Weight:  0.12 kg
- Type of vessels:  100” Petri dishes

B11b – Holder for Petri Dish Ø 54 mm  11520591
The one-piece holder for Petri dishes 60”.
- For vessel size:  Ø 54 mm
- Requirements:  "B5 – Object guide for fixed stages"
- Weight:  0.12 kg
- Type of vessels:  60” Petri dishes
B11c – Holder for Petri Dish Ø 36 mm  11520592
The one-piece holder for Petri dishes 35”.
• For vessel size:  Ø 36 mm
• Requirements:  "B5 – Object guide for fixed stages"
• Weight:  0.12 kg
• Type of vessels:  35” Petri dishes

B12 – Holder for slides  11520593
The one-piece holder for glass slides with max. dimension up to 76 x 26 mm. Two clamps will hold and fix the slides in this frame.
• For vessel size:  76 x 26 mm (3 x 1 inches)
• Requirements:  "B5 – Object guide for fixed stages"
• Weight:  0.13 kg
• Type of vessels:  Glass slides

B13 – Universal Holding frame M  11533041
Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel.
• For vessel size:  24-26 x 76-120 mm or Ø 24–68 mm
• Requirements:  "B5 – Object guide for fixed stages"
• Weight:  0.10 kg
• Type of vessels:  Petri dishes “35” & “60”,
Glass slides,
POC-R or POCmini cell cultivation systems,
Chamber Slide Systems (different manufacturer),
Chambered Coverglass Systems (different manufacturer)

B14 – Universal Holding frame M-Uthermol™  11532494
Frame to fix Uthermol™ counting chambers. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the chamber.
• For vessel size:  121 x 43 mm
• Requirements:  "B5 – Object guide for fixed stages"
• Weight:  0.10 kg
• Type of vessels:  Uthermol™ counting chambers

B15 – Universal Holding frame M-Duo  11531798
Frame to fix 1 or 2 Petri dishes and/or 1 glass slide. This enables the microscopic controlled transfer of selected cells from a Petri dish to a slide.
• For vessel size:  1 vessel: 26 x 90 mm or Ø 24–68 mm
2 dishes: Ø 24–56 mm
1 slide 1 dish: 76 x 26 mm / Ø 24–40 mm
• Requirements:  "B5 – Object guide for fixed stages"
• Weight:  0.14 kg
• Type of vessels:  Petri dishes “35” & “60”,
Glass slides,
POC-R or POCmini cell cultivation systems,
Chamber Slide Systems (different manufacturer),
Chambered Coverglass Systems (different manufacturer)
B16 – Universal Holding frame MX 11520689
Frame to fix large Petri dishes (87-92 mm) and multiwells. Two lateral clamps allow an easy and quick fixation.
• For vessel size: 125-133 x 82–88 mm or Ø 87–92 mm
• Requirements: “B5 – Object guide for fixed stages”
• Weight: 0.10 kg
• Type of vessels: Multiwell plates, Petri dishes or “D4 – Cooling/Heating Insert X”

B17 – Universal Holding frame M100 11533081
Frame to fix different cultivation vessels (e.g. dishes, flasks or slides, also turned by 90°). Specifically designed for large Petri dishes with a max. Ø of 92 mm. Two smooth running, moveable bridges with a variable clamping range allow an easy and quick fixation of the cell cultivation vessel. The Universal Holding Frame M100 is equipped with two spring clips to provide a firm fit of the vessel and keep it in place, especially when using oil or water immersion objectives. The spring clips can be mounted to a higher when bigger cell cultivation vessels (e.g. Petri dishes “100”) are used. The spring clips are easy to assemble or disassemble.
• For vessel size: 24-86 x 24-76 mm or Ø 24–92 mm
• Requirements: “B5 – Object guide for fixed stages”
• Weight: 0.14 kg
• Type of vessels: Petri dishes “35”, “60” & “100”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer), Cell Culture Flasks (25 - 40 ml)
HEATABLE HOLDING FRAMES FOR
OBJECT GUIDE FOR FIXED STAGE PLATE
with "B5 – Object guide for fixed stages"

Frame to fix different cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The aluminum frame has a heated aluminum base plate with laminated printed circuit board. The base plate has a circular and/or a rectangular opening. Temperature control is carried out with the "F1 – TempController 2000-1" or "F2 – TempController 2000-2". Experiments with CO₂-incubation the following frames could be used together with "G5 – CO2-Cover MH" inside the Incubator i8. Non-used opening in the frames must be covered with tape to prevent the loss of CO₂.

B18 – Heatable Universal Holding frame MH 2000 11533045
Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a circular and a rectangular opening. The spring clips can be mounted to a higher when bigger cell cultivation vessels (e.g. Petri dishes “100”) are used. The spring clips are easy to assemble or disassemble.

- For vessel size: 24-26 x 76-120 mm or Ø 24–68 mm
- Requirements: "B5 – Object guide for fixed stages"
- Weight: 0.2 kg
- Temperature stability: ± 0.1°
- Control range: 3°C above ambient up to 60°C
- Observation Opening: Ø 30 mm and 30 x 10 mm
- Type of vessels: Petri dishes “35” & “60”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)
- Requirements: "F1 – TempController 2000-1"/"F2 – TempController 2000-2"
- Compatible: "G5 – CO2-Cover MH"

B19 – Heatable Universal Holding frame MH-L 2000 11533046
Frame to fix different cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a rectangular opening. The spring clips can be mounted to a higher when bigger cell cultivation vessels (e.g. Petri dishes “100”) are used. The spring clips are easy to assemble or disassemble.

- For vessel size: 24-26 x 76-120 mm
- Requirements: "B5 – Object guide for fixed stages"
- Weight: 0.2 kg
- Temperature stability: ± 0.1°
- Control range: 3°C above ambient up to 60°C
- Observation Opening: 47 x 21 mm
- Type of vessels: Glass slides, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)
- Requirements: "F1 – TempController 2000-1"/"F2 – TempController 2000-2"
- Compatible: "G5 – CO2-Cover MH"
B20 – Heatable Universal Holding frame MH-R 2000 11533047
Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a circular and a rectangular opening. The spring clips can be mounted to a higher when bigger cell cultivation vessels (e.g. Petri dishes “100”) are used. The spring clips are easy to assemble or disassemble.
• For vessel size: Ø 24–68 mm
• Requirements: “B5 – Object guide for fixed stages”
• Weight: 0.2 kg
• Temperature stability: ± 0.1°C
• Control range: 3°C above ambient up to 60°C
• Observation Opening: Ø 30 mm
• Type of vessels: Petri dishes “35” & “60”, POC-R or POCmini cell cultivation systems
• Requirements: “F1 – TempController 2000-1”/“F2 – TempController 2000-2”
• Compatible: “G5 – CO2-Cover MH”

B21 – Tokaihit, Leica TPX Heating Frame Glass Type F 11533257
Frame with clear strengthen heated glass. The strengthen glass is applied to glassware to prevent glass breakage caused by objective interference, dish/plate dropping, etc.
When Leica TPX is installed to the microscope stage, the heating plate becomes flush with the stage surface to ensure the easy handling of the specimens and easy operation of the manipulator. This model features a thin are (0.5 mm), which allows its application with Differential Interference Contrast, Modulation Contrast and high magnification objective lenses.
Additional feature of quality control and new temperature regulation of continuous control are included in the system. External sensor and data logging software allows on-site calibration and off-set of plate and/or external sensor. With calibration and data logging feature allows to keep system performance quality high at end. Continuous current control minimizes focus drift/changing light intensity caused by regular on/off control.
Main uses: Temperature control of the specimen in short-term imaging, cell engineering, neuroscience, and genetic engineering under research use.
• For vessel size: No limitation (within 150 x 100 mm)
• Requirements: Objective guide for regular stage, power supply and external sensor (already included)
• Weight: 0.39 kg (+1.3 kg power supply)
• Temperature stability: ± 0.3°C
• Temperature regulation: Continuous current control
• Control range: 5°C above ambient up to 60°C (Controllable temperature setting is less than 50°C)
• Observation opening: 120 x 73.5 mm, whole glass thickness is 0.5 mm
• Type of vessels: All types
• Compatible: “G17 – CO2-Cover TH”
C 160 X 110 MM INSERTS FOR 3-PLATE STAGES AND SCANNING STAGES

The inserts or holders are fixed with a spring snap-in mechanism into the rectangular opening. The outer dimensions of the inserts are: 160 x 110 mm. There are inserts for special vessels available and universal inserts with smooth running moveable brackets with variable clamping ranges, allowing easy and quick fixation of different sized dishes or slides. Alignment screws guarantee plan-parallel adjustment in z-direction.

Material: aluminum, black anodized.

Universal inserts are available in heated and non-heated versions.

NON HEATABLE INSERTS

C1 – Holder for slides  11531433
The one-piece holder for glass slides with max. dimension up to 76 x 26 mm. Two clamps will hold and fix the slides in this frame.

• For vessel size: 76 x 47 mm
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
• Weight: 0.18 kg
• Type of vessels: Glass slides (76 x 26 mm or 3 x 1 inches)
• Compatible: No CO₂-Cover

C2 – Holder for Micro-Titer trays  11531434
The one-piece insert for 96-well or 120-well Micro-Titer Trays with a common footprint of 126 x 85 mm. Firm and secure clamping of the trays is achieved with an integrated clamping device at the right hand side of the insert.

• For vessel size: 127 x 85 mm
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
• Weight: 0.13 kg
• Type of vessels: Micro-Titer Trays, T75-flasks
• Compatible: No CO₂-Cover

C3a – Holder for Petri Dish Ø 88.5 mm  11531440
The one-piece holder for different sizes of Petri dishes.

• For vessel size: Ø 88.5 mm
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
• Weight: 0.11 kg
• Type of vessels: Large Petri dishes
• Compatible: No CO₂-Cover

C3b – Holder for Petri Dish Ø 36 mm  11531437
The one-piece holder for different sizes of Petri dishes.

• For vessel size: Ø 36 mm
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
• Weight: 0.1 kg
• Type of vessels: Large Petri dishes
• Compatible: No CO₂-Cover
**C4 – Metal Plate lowered by 4 mm**

The one-piece aluminum plate with a round opening for the 88 mm inserts with different holes 5 mm, 10 mm, 20 mm, 40 mm ("A3 – 88 mm Round Inserts"). The plate comes without inserts.

- For vessel size: 20-76 x 20-120 mm or Ø 20–60 mm
- Requirements: 3-plate-stage / Scanning-stage for 160x110 mm inserts "A3 – 88 mm Round Inserts"
- Weight: 0.11 kg
- Type of vessels: No specific, different types
- Compatible: No CO_{2}-Cover

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**C5 – Insert for slides, rotatable**

The one-piece holder for glass slides with max. dimension up to 76 x 26 mm. The slide bracket is rotatable.

- For vessel size: 76 x 47 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.18 kg
- Type of vessels: Glass slides (76 x 26 mm or 3 x 1 inches)
- Compatible: No CO_{2}-Cover

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**C6 – Glass stage plate**

The one-piece glass plate with a round opening (Ø 20 mm) for all sizes of dishes and slides.

- For vessel size: All kind of vessels
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.10 kg
- Type of vessels: No specific, different types
- Compatible: No CO_{2}-Cover, not for scanning-stages

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**C7 – Plane stage insert**

The one-piece holder with a round opening for 88 mm round inserts.

- For vessel size: All kind of vessels
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.10 kg
- Type of vessels: No specific, different types
- Compatible: No CO_{2}-Cover, not for scanning-stages

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**C8 – Adjustable Universal Holder**

Frame to fix different sized Petri dishes or slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel.

- For vessel size: 26 x 76 mm or Ø 20–68 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.10 kg
- Type of vessels: Petri dishes, glass slides
- Compatible: No CO_{2}-Cover
C9 – Universal Holding frame K 11600234
Frame to fix different cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel.
The sides of the frame are depressed for better use in micromanipulation for a flat injection angle.

- For vessel size: 24-26 x 76-120 mm or Ø 24–68 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.10 kg
- Type of vessels: Petri dishes “35” & “60”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)
- Compatible: No CO2-Cover

C11 – Universal Holding frame K-Duo 11532514
Frame to fix 1 or 2 Petri dishes and/or 1 glass slide. This enables the microscopic controlled transfer of selected cells from a Petri dish to a slide Four smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel.

- For vessel size: 1 vessel: 26 x 90 mm or Ø 24–68 mm
  2 dishes: Ø 24–56 mm
  1 slide 1 dish: 76 x 26 mm / Ø 24–40 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.14 kg
- Type of vessels: Petri dishes “35” & “60”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)
- Compatible: No CO2-Cover
C13 – Universal Holding frame K100

Frame to fix different cultivation vessels (e.g. dishes, flasks or slides, also turned by 90°). Specifically designed for large Petri dishes with a max. Ø of 92 mm. Two smooth running, moveable bridges with a variable clamping range allow an easy and quick fixation of the cell cultivation vessel. The Universal Holding Frame K100 is equipped with two spring clips to provide a firm fit of the vessel and keep it in place, especially when using oil or water immersion objectives. The spring clips can be mounted to a higher when bigger cell cultivation vessels (e.g. Petri dishes “100”) are used. The spring clips are easy to assemble or disassemble.

- For vessel size: 24-86 x 24-76 mm or Ø 24–92 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.14 kg
- Type of vessels: Petri dishes “35”, “60” & “100”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer), Cell Culture Flasks (25 – 40 ml), Terasaki-Plate, 4-Well Multiplates
- Compatible: No CO₂-Cover
NON HEATABLE INSERTS SUITED TO CONTROL CO₂-CONCENTRATION

The following frames are especially suited to control CO₂-concentration in combination with the Incubator i8 2000, a CO₂-Cover and the CO₂-Controller-2000.

The inserts or holders are fixed with a spring snap-in mechanism into the rectangular opening. The outer dimensions of the inserts are: 160 x 110 mm. There are inserts for special vessels available and universal inserts with smooth running moveable brackets with variable clamping ranges, allowing easy and quick fixation of different sized dishes or slides. Alignment screws guarantee plan-parallel adjustment in z-direction. Material: aluminum, black anodized.

Universal Holding frame KM see C115 page 28

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C16 – Holding frame Slide Holder(quad)  11532983
The Slide Holder (quad) for the insertion of 4 slides has been especially designed for chambered slides (besides conventional slides). It features horizontal handling of slides when they are filled with a solution. It is not necessary to insert the slides in a tilted way with the danger of spilling some of the liquid. The slides are fixed in the holder and need not to be touched directly during transport, medium exchange, incubation etc.

- For vessel size: 4 x 76 x 26 mm (3 x 1”)
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.18 kg
- Type of vessels: Glass or chambered slides of approx. 76 x 26 mm (3 x 1”), μ-slides (ibidi®), Lab-Tek™ (Nunc™), Chambered slides (BD Falcon™)
- Compatible: “G15 – CO2-Cover Quad”

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C17 – Holding frame 6 Petri dishes  11533039
Frame to hold 6 small (“35”) Petri dishes which can be fixed with pressure springs. Particularly suitable for Petri dishes with glass bottom and the use of objectives with oil immersion. When working with a CO₂-gassing unused openings in which there are no Petri dishes during the observation, have to be covered, covers (6 pcs.) are included.

- For vessel size: 6 x “35” Petri dishes
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.22 kg
- Type of vessels: 1 to 6 “35” Petri dishes
- Compatible: “G14 – CO2-Cover 6xPetri”

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C16
Mounting Frame Slide Holder (quad)
Art.-No.: 11532983

C17
Holding frame 6 Petri dishes
Art.-No.: 11533039
C18 – Universal Holding frame KP-Set (11532635) replaced by 11533187
Frame (with 4 bottom covers for Petri dishes, ibidi®-plates and Lab-Tek™ slides) for different cultivation vessels or slides. The set includes the frame and 4 exchangeable not heated bottom plates either for Petri dishes (35,60), Lab-Tek™ Chambers and Slides, ibidi®-Chambers.

C21 – Top Frame KP-Set
Top frame for Universal Holding Frame K100 to accomplish perfusion experiments. Easy access for thin cables and perfusion tubes to the interior through silicon sealed openings.

**For vessel size:** 24–80 mm length or Ø 24–68 mm, height 20 mm
**Requirements:** “C19 – Universal Holding frame K100-Set”
**Weight:** 0.20 kg
**Compatible:** “G2 – CO₂-Cover HP”
“G3 – CO₂-Cover HP-MG”

C19 – Universal Holding frame K100-Set
Frame (with 4 bottom covers for Petri dishes, Terasaki Trays, ibidi®-plates and Lab-Tek™-slides and cell culture flasks) to fix different cultivation vessels or slides with special horizontal clamps. The set includes the frame and 4 exchangeable not heated bottom plates either for Petri dishes (35,60), Lab-Tek™-Chambers and Slides, ibidi®-Chambers and flasks. Optional cover for “100” is available.

**For vessel size:** 24–80 mm length or Ø 24–92 mm
**Requirements:** 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
**Weight:** 0.20 kg
**Observation Opening:** Ø 30 mm, Ø 55 mm, 47 x 21 mm, 75 x 50
**Type of vessels:** Petri dishes “35”, “60” & “100”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer),
**Compatible:** “G16 – CO₂-Cover K100-Set”
“G2 – CO₂-Cover HP”
“G3 – CO₂-Cover HP-MG”
“C21 – Top Frame KP-Set”
C20 – Baseplate “100” for K100-Set
(large Petri dishes)
Optional exchangeable not heated bottom plate for “100” Petri dishes for the Universal Holding frame K100-Set.

- For vessel size: Ø 87-92 mm
- Requirements: ‘C19 – Universal Holding frame K100-Set’
- Weight: 0.20 kg
- Type of vessels: large Petri dishes (87-92 mm)
- Compatible: Universal Holding Frame K100-Set equipment

C22 – Insert GL-Set
Frame with 5 bottom covers. The set includes the frame and 5 exchangeable not heated baseplates either for Petri dishes (“35”, “60”), Lab-Tek™-Chambers slides, ibidi®-Chambers and cell culture flasks

- For vessel size: 24–80 mm length or Ø 24–68 mm
- Requirements: SuperZ widefield (for 3-plate-stage / Scanning-stage for 160 x 110 mm inserts)
- Weight: 0.10 kg
- Observation Opening: Ø 30 mm, Ø 55 mm, 47 x 21 mm, 75 x 50 mm
- Type of vessels: Petri dishes “35” & “60”, Glass slides, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer), Cell Culture Flasks
- Compatible: “G20 – CO₂-Cover GL-A”

C23 – Insert N for Lab-Tek™
The massive insert N is fixed with a spring snap-in mechanism into the rectangular opening of the stage. Alignment screws guarantee plan-parallel adjustment in z-direction.

Material: aluminum, black anodized. Insert N have been developed to get a temperature inert system. Best solution for work with high magnification, precise positioning, Laser-Scanning-Microscopy applications and live cell imaging. An rectangular observation opening ensure access for objectives.

- For vessel size: 76 x 26 fixed with clip clamping
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.7 kg
- Observation Opening: 46 x 21 mm
- Type of vessels: Nunc™ Lab-Tek™ (II) Chamber Slide System, Nunc™ Lab-Tek™ (II) Chambered Coverglass System, Glass slides, µ-Slides by ibidi®
- Compatible: “G2 – CO₂-Cover HP”, “G3 – CO₂-Cover HP-MG”
NON HEATABLE CLICK-IN INSERTS SUITED TO CONTROL CO$_2$-CONCENTRATION

Multifunctional and flexible system for the fixation of cell culture vessels on xy-stages and scanning stages with a cut-out of 160 x 110 mm at inverse microscopes. The system combines a wide range of application with a simple handling. It provides for a firm fixation and a stable position of the cell culture vessels during the observation under the microscope.

The Universal Mounting Frame KM Click-In serves as base frames into which multi-plates and different insert plates can be clicked in.

Advantages:

- Various different types of cell culture vessels can be used.
- A quick change of the cell culture vessels, which can also be inserted and taken out together with the insert plate, is possible.
- A firm position of the cell culture vessel by clamping springs in the frame and in the Z-direction by means of spring clips (easy to assemble or disassemble) is ensured.
- With a CO$_2$-Cover and a CO$_2$-Controller, the pH-value in the nutrition medium can be controlled.

Requirements: Inverse microscope with mechanical stage or scanning stage (opening 160 x 110 mm)
Universal Mounting Frame KM Click-In

C115 – Universal Holding frame KM Click-In

Frame to fix multi-wells with or without glass bottom. Adjustable spring clips allow an Adaptation to several multiwell sizes.

Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
Weight: 0.20 kg
Type of vessels: Click-In
Compatible: “G11 – CO$_2$-Cover KM”, “G1 – CO$_2$-Cover PM”
Click-In System Premium

The **Click-In System Premium** consists of a 6 mm thick black anodized aluminium plate. The different cell culture vessels are laterally fixed by clamping springs and can be additionally fixed in Z-direction from above by spring clips.

**CLICK-IN P "35" Petri dishes** 11533199
for Petri dishes 30-40 mm

**CLICK-IN P "60" Petri dishes** 11533200
for Petri dishes 47-56 mm

**CLICK-IN P 2x "35" Petri dishes** 11533201
for Petri dishes 2x30-40 mm

**CLICK-IN P 1x "35", 1x "60" Petri dish** 11533202
for Petri dishes 1x30-40 mm + 1x 47-56 mm

**CLICK-IN P POC-R2 cell cultivation** 11533203
for POC-R cultivation chambers by LaCon

**CLICK-IN P all Chambered systems** 11533204
for all glass slides and chamber systems of different manufactures

**CLICK-IN P "100" Petri dishes** 11533205
for Petri dishes 78-90 mm
HEATABLE INSERTS SUITED TO CONTROL CO₂-CONCENTRATION

The following frames are especially suited to control CO₂-concentration in combination with the Incubator i8, a CO₂-Cover and the CO₂-Controller-2000.

The inserts or holders are fixed with a spring snap-in mechanism into the rectangular opening of the stage. The outer dimensions of the inserts are: 160 x 110 mm. There are inserts for special vessels available and universal inserts with smooth running moveable brackets with variable clamping ranges, allowing easy and quick fixation of different sized dishes or slides.

Alignment screws guarantee plan-parallel adjustment in z-direction.

Material: aluminum, black anodized.

C31 – Heatable Universal Holding frame KH 2000 11533048

Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a circular and a rectangular opening.

- For vessel size: 24-26 x 76-120 mm or Ø 24–68 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
  - “F1 – TempController 2000-1” or “F2 – TempController 2000-2”
- Weight: 0.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: Ø 30 mm and 30 x 10 mm
- Type of vessels: Petri dishes “35” & “60”, Glass slides, POC-R2 or POCmini-2 cell cultivation systems, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)
- Compatible: “G6 – CO₂-Cover KH” “G8 – CO₂-Cover MM K”

C32 – Heatable Universal Holding frame KH-L 2000 11533049

Frame to fix different cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a rectangular opening.

- For vessel size: 24-26 x 76-120 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
  - “F1 – TempController 2000-1” or “F2 – TempController 2000-2”
- Weight: 0.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: 47 x 21 mm
- Type of vessels: Glass slides, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)
- Compatible: “G6 – CO₂-Cover KH” “G8 – CO₂-Cover MM K”
C33 – Heatable Universal Holding frame KH-R 2000 11533050
Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a circular opening.

- For vessel size: Ø 24–68 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
  'F1 – TempController 2000-1' / 'F2 – TempController 2000-2'
- Weight: 0.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: Ø 30 mm
- Type of vessels: Petri dishes “35” & “60”,
  POC-R2 or POCmini-2 cell cultivation systems,
- Compatible: ‘G6 – CO2-Cover KH’
  ‘G8 – CO2-Cover MM K’

C34 – Tokaihit, Leica TPX Type HF Heating Frame, Glass 11533258
Frame with clear strengthen heated glass. The strengthen glass is applied to glassware to prevent glass breakage caused by objective interference, dish/plate dropping, etc.

When Leica TPX is installed to the microscope stage, the heating plate becomes flush with the stage surface to ensure the easy handling of the specimens and easy operation of the manipulator. This model features a thin are (0.5 mm), which allows its application with Differential Interference Contrast, Modulation Contrast and high magnification objective lenses.

Additional feature of quality control and new temperature regulation of continuous control are included in the system. External sensor and data logging software allows on-site calibration and off-set of plate and/or external sensor. With calibration and data logging feature allows to keep system performance quality high at end. Continuous current control minimizes focus drift/changing light intensity caused by regular on/off control.

Main uses: Temperature control of the specimen in short-term imaging, cell engineering, neuroscience, and genetic engineering under research use.

- Including: Power Supply, External Sensor,
  Data logging installation CD
- For vessel size: no limitation (within 150 x 100 mm)
- Requirements: ‘A4 – Manual 3-Plate-Stage 127 mm x 83 mm’
  ‘A6 – Motorized 3-Plate-Stage 127 mm x 83 mm’
- Weight: 0.33 kg (+ 1.3 kg Power supply)
- Temperature stability: ± 0.3°C
- Temperature regulation: Continues current control
- Control range: 5°C above ambient up to 60°C
- Observation Opening: 122 x 84 mm, whole glass thickness 0.5 mm
- Type of vessels: all types
- Compatible: ‘G17 – CO2-Cover TH’
C36 – Tokaihit, Leica TPX Type NF Heating Frame 26, Metal

Metal heating frame. When TPX is installed to microscope stage, the heating plate becomes flush with the stage surface to ensure the easy handling of the specimens and easy operation of manipulator. This model features a round 25 mm opening in the plate center.

Additional feature of quality control and new temperature regulation of continuous control are included in the system. External sensor and data logging software allows on-site calibration and off-set of plate and/or external sensor. With calibration and data logging feature allows to keep system performance quality high at end. Continuous current control minimizes focus drift/changing light intensity caused by regular on/off control.

Main uses: Temperature control of the specimen in short-term imaging, cell engineering, neuroscience, and genetic engineering under research use.

- Including: Power Supply, External Sensor, Data logging installation CD
- For vessel size: no limitation (within 150 x 100 mm)
- Requirements: "A4 – Manual 3-Plate-Stage 127 mm x 83 mm"
  "A6 – Motorized 3-Plate-Stage 127 mm x 83 mm", only
- Weight: 0.7 kg (+ 1.3 kg Power supply)
- Temperature stability: ± 0.3°C
- Temperature regulation: Continuous current control
- Control range: 5°C above ambient up to 60°C
- Observation Opening: Ø 25 mm
- Type of vessels: all types
- Compatible: "G17 – CO2-Cover TH"

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C37 – Tokaihit, Leica TPX Type I2 Heating Frame 26, Metal

Frame with clear strengthen glass and metal heating frame. The strengthen glass is applied to glassware to prevent glass breakage caused by objective interference, dish/plate dropping, etc. When TPX is installed to microscope stage, the heating plate becomes flush with the stage surface to ensure the easy handling of the specimens and easy operation of manipulator.

The left side provides a glass heating insert (0.5 mm thickness for objective magnification up to 40x DIC, the right side is equipped with a metal heating insert with a hole (Ø 25 mm) for the objectives up to 100x oil DIC.

Additional feature of temperature regulation of continuous control is included in the system. Continuous current control minimizes focus drift/changing light intensity caused by regular on/off control.

Main uses: Temperature control of the specimen in short-term imaging, cell engineering, neuroscience, and genetic engineering under research use.

- Including: Power Supply, External Sensor, Data logging installation CD
- For vessel size: no limitation (within 150 x 100 mm)
- Requirements: "A4 – Manual 3-Plate-Stage 127 mm x 83 mm"
  "A6 – Motorized 3-Plate-Stage 127 mm x 83 mm", only
- Weight: 0.75 kg (+ 3.0 kg Power supply)
- Temperature stability: ± 0.3°C
- Temperature regulation: Continuous current control
- Control range: 5°C above ambient up to 60°C
- Observation Opening: 54 x 82 mm, whole glass thickness 0.5 mm or Ø 25 mm
- Type of vessels: all types
- Compatible: "G17 – CO2-Cover TH"
C38 – Tokaihit, MATS Dish fixing block 11532371
To fix the sample on the MATS-Glass or MATS-Metal, the accessory dish fixing block (DFB-3550) is recommended.

The following frames are especially suited for long time lapse series experiments to control CO₂-concentration in combination with the Incubator i82000, a CO₂-Cover and the CO₂-Controller-2000 or in a special stage top incubator.

The massive inserts are fixed with a spring snap-in mechanism into the rectangular opening of the stage. The outer dimensions of the inserts are: 160 x 110 mm. Alignment screws guarantee plan-parallel adjustment in z-direction. Material: aluminum, black anodized.

C41 – Heating Insert P 2000 11533027
C42 – Heating Insert P Lab-Tek™ 2000 11533080
The solid heating element is made of one piece of aluminum with uniform heat distribution and a high thermal conductivity. Best solution for work with high magnification, precise positioning, Laser-Scanning-Microscopy applications and live cell imaging. An oval observation opening ensure both access for objectives and maximum heat transfer. Lateral ducts on the left and right side through the inserts permit the installation of perfusion tubes, for example with the POCmini or POC-R cambers “C41 – Heating Insert P 2000”, or with Lab-Tek™ or chambered Slides “C42 – Heating Insert P Lab-Tek™ 2000”.

Heating Insert P 2000 11533027
• For vessel size: Ø 35 mm type fixed with an annular insert
Ø 60 mm type fixed with clip clamping
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
“F1 – TempController 2000-1” or
“F2 – TempController 2000-2”
• Weight: 0.8 kg
• Temperature stability: ± 0.1°C
• Control range: 3°C above ambient up to 60°C
• Observation Opening: oval 32 x 30 mm
• Type of vessels: Petri dishes “35” & “60”,
POC-R2 or POCmini-2 cell cultivation systems
• Compatible: “G1 – CO₂-Cover PM”
“G4 – CO₂-Cover HP-MG-L”
“G31 – Incubator PM 2000 RBT”

Heating Insert P Lab-Tek™ 2000 11533080
• For vessel size: 76 x 26 mm fixed with clip clamping
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
“F1 – TempController 2000-1” or
“F2 – TempController 2000-2”
• Weight: 0.8 kg
• Temperature stability: ± 0.1°C
• Control range: 3°C above ambient up to 60°C
• Observation Opening: 46x21 mm
• Type of vessels: Nunc™ Lab-Tek™ (II) Chamber Slide System,
Nunc™ Lab-Tek™ (II) Chambered Coverglass System,
Glass slides
• Compatible: “G1 – CO₂-Cover PM”
“G4 – CO₂-Cover HP-MG-L”
“G31 – Incubator PM 2000 RBT”
The heating inserts in combination with the Incubator PM 2000 or CO₂-Cover PM and Incubator i8 Series are used for simultaneous monitoring, imaging or capturing time-lapse sequences. Due to the high precision of scanning stages the configuration is ideal for computer controlled observation using multi-well dishes. The heating inserts are positioned into the 160 x 110 mm rectangular opening of the stages where they are held by a special clamping device.

Solid aluminum frame with an aluminum base plate with laminated printed circuit board with circular openings of defined diameter. Optimized thermal contact between the heated aluminum plate and the multiwell plate, therefore only compatible to specific multiwell dishes. A large lateral PA-screw allows the fixation of the multiwell dish.

CO₂ control is possible with the "G31 – Incubator PM 2000 RBT" or with the "Incubator i8" in combination with the "G1 – CO₂-Cover PM". Temperature control is carried out with the 'F1 – TempController 2000-1' or 'F2 – TempController 2000-2'.

- For vessel size: Insert M06: e.g. BD Falcon™ 06-well multiplate
  Insert M12: e.g. BD Falcon™ 12-well multiplate
  Insert M24: e.g. BD Falcon™ 24-well multiplate
  Insert M96: e.g. BD Falcon™ 96-well multiplate
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts 'F1 – TempController 2000-1' or 'F2 – TempController 2000-2'
- Weight: 0.4 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: M06: = 22.0 mm, M12: = 22.0 mm
  M24: = 15.5 mm, M96: = 6.0 mm
- Type of vessels: Multiwell plates by Corning™ & Falcon™
  with flat polystyrene bottom,
  POC-R or POCmini cell cultivation systems
- Compatible: "G1 – CO₂-Cover PM"
  "G31 – Incubator PM 2000 RBT"
  "G4 – CO₂-Cover HP-MG-L"
C50 – Heatable Incubation Insert P-Set 2000

The incubation insert is supplied with 4 exchangeable baseplates with different observation openings. According to the mounted baseplate, Petri dishes and POC-Systems, Lab-Tek™ chambers, object slides, chamber slides, CultureSlides, ibidi® chambers as well as Imaging Chambers can be observed. The incubation insert is equipped with two spring clips. This provides for a firm fit of the cell cultivation vessel and keeps it in place. The slidable cover enables a direct access to the cell cultivation system without removing the cover. The Heatable Incubation Insert P-Set 2000 is also applicable with large incubators.

Because of its design, the incubation insert has a high temperature constancy and thermal conductivity. Therefore, it is also suited for laser scanning microscopy. The heating is achieved by transistor stray power without disturbing switching pulses. Thereby, the incubation insert without the cover can be used for electrophysiological experiments. If necessary, it is also possible to control the temperature of the cover and body separately.

Temperature control is carried out with the "F2 – TempController 2000-2".

- For vessel size: 24-50 x 40-80 mm or Ø 24–68 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
- Weight: 0.6 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: Ø 30 mm, Ø 55 mm, 47 x 21 mm, 75 x 50
- Type of vessels: Petri dishes “35” & “60”, Glass slides, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer), POC-R or POCmini cell cultivation systems, Lab-Tek™ (Nunc™), Chambered slides (BD Falcon™)

C51 – Tokaihit, Leica TPX Type H Heating Frame

Heating Insert, MATS Type TPX H, 160x110x5mm, for DMI8 Series, central glass thickness 0.5mm, including control unit, sunk in (no flat surface)

- Including: Power Supply, External Sensor, Data logging installation CD
- For vessel size: no limitation (within 150 x 100 mm)
- Requirements: "A4 – Manual 3-Plate-Stage 127 mm x 83 mm" "A6 – Motorized 3-Plate-Stage 127 mm x 83 mm", only

C52 – Tokaihit, Leica TPX Type J Heating Frame

Round heating insert (88mm)

- Requirements: "A1 – Fixed Stage Plate" "A2 – Slim Fixed Stage Plate", only
COOLING AND HEATING INSERTS SUITED TO CONTROL CO₂-CONCENTRATION

The inserts or holders are fixed with a spring snap-in mechanism into the rectangular opening. The outer dimensions of the inserts are: 160 x 110 mm. There are inserts for special vessels available and universal inserts with smooth running moveable brackets with variable clamping ranges, allowing easy and quick fixation of different sized dishes or slides. Alignment screws guarantee plan-parallel adjustment in z-direction. The solid cooling/heating element is made of one piece of aluminium with uniform heat distribution and a high thermal conductivity. Tubes (1 m and 2 m) can be connected with self sealing couplings. Experiments with CO₂-incubation the frames could be used together with different small incubators or CO₂-Covers inside the Incubator i8. The following frames are especially suited to control CO₂-concentration in combination with the Incubator i8, a CO₂-Cover and the CO₂-Controller.

D1 – Cooling/Heating Insert P  11533083

The solid temperable element is made of one piece of aluminum with uniform temperature distribution and a high thermal conductivity. Best solution for work with high magnification, precise positioning, Laser-Scanning-Microscopy applications and live cell imaging. Specimens are firmly seated in the Cooling Insert P Lab-Tek™. An oval or rectangular observation opening ensures both access for objectives and maximum temperature transfer. Ideal for electrophysiological experiments, because no disturbing switching pulses are emitted. Compatible to many different cell cultivation vessels or chambered slides. A cover with a glass insert ensures full DIC compatibility. Temperature control is carried out with circulating water or other liquids and is regulated at the circulator, cooling thermostat (e.g. Lauda RE 106).

11533083
• For vessel size: Ø 35 mm type fixed with an annular insert
Ø 60 mm type fixed with clip clamping
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
Thermostat or pump as liquid circulator
• Weight: 0.8 kg
• Control range: Liquid, temperature control by Thermostat
• Observation Opening: Oval 32 x 30 mm
• Type of vessels: Petri dishes “35” & “60”, POC-R2 or POCmini-2 cell cultivation systems
• Compatible: “G2 – CO₂-Cover HP”
“G3 – CO₂-Cover HP-MG”
“G30 – Incubator P 2000”

D2 – Cooling/Heating Insert P Lab-Tek™ type  11533033

• For vessel size: 76 x 26 mm fixed with clip clamping
• Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts
Thermostat or pump as liquid circulator
• Weight: 0.8 kg
• Control range: Liquid, temperature control by Thermostat
• Observation Opening: 46 x 21 mm
• Type of vessels: Nunc™ Lab-Tek™ (II) Chamber Slide System, Nunc™ Lab-Tek™ (II) Chambered Coverglass System, Glass slides
• Requirements: Thermostat
• Compatible: “G2 – CO₂-Cover HP”
“G3 – CO₂-Cover HP-MG”
“G30 – Incubator P 2000”
D3 – Cooling/Heating Incubation Insert P-Set 2000  11533036
The incubation insert is supplied with 4 exchangeable baseplates with different observation openings. According to the mounted baseplate, Petri dishes and POC-Systems, Lab-Tek™ chambers, object slides, chamber slides, CultureSlides, ibidi® chambers as well as Imaging Chambers can be observed. The incubation insert is equipped with two spring clips. This provides for a firm fit of the cell cultivation vessel and keeps it in place. The slidable cover enables a direct access to the cell cultivation system without removing the cover. The temperable Incubation Insert P-Set 2000 is also applicable with large incubators. Because of its design, the incubation insert has a high temperature constancy and thermal conductivity. Therefore, it is also suited for laser scanning microscopy. The temperature is achieved by liquid fluid. Thereby, the incubation insert without the cover can be used for electrophysiological experiments. Temperature control is carried out with circulating water or other liquids and is regulated at the circulator, cooling thermostat (e.g. Lauda RE 106).

- For vessel size: 24-50 x 40-80 mm or Ø 24–68 mm
- Requirements: 3-plate-stage / Scanning-stage for 160 x 110 mm inserts Thermostat or pump as liquid circulator and “F1 – TempController 2000-1” / “F2 – TempController 2000-2”
- Weight: 0.6 kg
- Control range: Liquid, temperature control by Thermostat
- Observation Opening: Ø 30 mm, Ø 55 mm, 47 x 21 mm, 75 x 50
- Type of vessels: Petri dishes “35” & “60”, Glass slides, Chamber Slide Systems (different manufacturer), Chambered Coverglass Systems (different manufacturer)

D4 – Cooling/Heating Insert X  11532510
The solid cooling (resp. temperable) element is made of one piece of aluminum with uniform temperature distribution and a high thermal conductivity. Because of its low mass it allows a rapid temperature change. A circular observation opening (Ø 8 mm) ensures both access for objectives and maximum temperature transfer. The outer dimensions are like a multi-plate. Due to its low profile it is especially suited for micromanipulation with a flat angle. Recommended for electrophysiological experiments, because no disturbing switching pulses are emitted.

- For vessel size: Ø 35 mm or 76 x 26 mm
- Outer dimension: 127 x 86 mm
- Requirements: ‘B16 – Universal Holding frame MX’ or ‘C115 – Universal Holding frame KM Click-In’, Thermostat or pump as liquid circulator and “F1 – TempController 2000-1” / “F2 – TempController 2000-2”
- Weight: 0.2 kg
- Control range: Liquid, temperature control by Thermostat
- Observation Opening: Ø 8 mm
- Type of vessels: 35” Petri dishes, glass slides, Lab-Tek™ (Nunc™), Chambered slides (BD Falcon™)
- Compatible: No CO₂-Cover

D5 – Cooling Thermostat
For the precise control of the cooling for temperable stages or temperable inserts we recommend Cooling thermostats from Lauda or Julabo. Several models are available, see www.lauda.de or www.julabo.com. You will get the latest information, specifications and curves.
E1 – Universal Holding frame AK
Art.-No.: 11501270
Flexible device with easy installation for the fixation of different objects on the Scanning Stage 100x100 at upright microscopes.

- For vessel size: 24-26 x 76-120 mm or Ø 24–68 mm
- Requirements: Scanning Stage for 160 x 116 mm inserts
- Weight: 0.15 kg
- Type of vessels: Petri dishes “35” & “60”, POC-R2 or POCmini-2 cell cultivation systems, Glass slides
- Compatible: No CO₂-Cover

E2 – Universal Holding frame A
Art.-No.: 11501268
Frame to fix different cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel.

- For vessel size: 24-26 x 76-120 mm or Ø 24–68 mm
- Requirements: Mechanical stage (11501257 or 11501233)
- Weight: 0.10 kg
- Type of vessels: Petri dishes “35” & “60”, POC-R2 or POCmini-2 cell cultivation systems, Glass slides
- Compatible: No CO₂-Cover

E4 – Universal Holding frame AK-Set
Art.-No.: 11533044
Frame (with 3 baseplates for Petri dishes, POC-R2, POCmini-2 and glass slides) for different cultivation vessels or slides. The set includes the frame and 3 exchangeable not heated bottom plates either for Petri dishes (“35”, “60”), POC-R2 or POCmini-2 cell cultivation systems, glass slides.

- For vessel size: 24–80 mm length or Ø 24–68 mm
- Requirements: Scanning Stage for 160 x 116 mm inserts
- Weight: 0.20 kg
- Observation Opening: Ø 30 mm, Ø 55 mm, 47 x 21 mm, 75 x 50 mm
- Type of vessels: Petri dishes “35” & “60”, POC-R2 or POCmini-2 cell cultivation systems, Glass slides
- Compatible: “G22 – CO₂-Cover AK-Set”
E5 – Heatable Universal Holding frame AKH 2000 11533051
Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a circular and a rectangular opening.

- For vessel size: 24-26 x 76-120 mm or Ø 24–68 mm
- Requirements: Scanning Stage for 160 x 116 mm inserts
  "F1 – TempController 2000-1" or
  "F2 – TempController 2000-2"
- Weight: 0.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: Ø 30 mm and 30 x 10 mm
- Type of vessels: Petri dishes “35” & “60”,
  POC-R2 or POCmini-2 cell cultivation systems,
  Glass slides
- Compatible: "G21 – CO₂-Cover AKH"

E6 – Heatable Universal Holding frame AKH-L 2000 11533052
Frame to fix different cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a rectangular opening.

- For vessel size: 24-26 x 76-120 mm
- Requirements: Scanning Stage for 160 x 116 mm inserts
  "F1 – TempController 2000-1" or
  "F2 – TempController 2000-2"
- Weight: 0.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: 47 x 21 mm
- Type of vessels: Glass slides
- Compatible: "G21 – CO₂-Cover AKH"

E7 – Heatable Universal Holding frame AKH-R 2000 11533053
Frame to fix different Petri dishes, cultivation vessels and slides. Two smooth running moveable brackets with a variable clamping range allow an easy and quick fixation of the vessel. The base plate of the frame has a circular and a rectangular opening.

- For vessel size: Ø 24–68 mm
- Requirements: Scanning Stage for 160 x 116 mm inserts
  "F1 – TempController 2000-1" or
  "F2 – TempController 2000-2"
- Weight: 0.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Observation Opening: Ø 30 mm
- Type of vessels: Petri dishes “35” & “60”,
  POC-R2 or POCmini-2 cell cultivation systems,
  Glass slides
- Compatible: "G21 – CO₂-Cover AKH"
E8 – Heating Insert UP-Set 2000

The Heating Insert UP-Set 2000 is designed for the stable heating of cell cultivation systems above ambient temperature up to 60°C. It is equipped as standard with a slidable cover with a heatable glass plate. Because of its solid design, it has a high temperature constancy and thermal conductivity.

- With the CO₂-Cover UP-Set and the Humidifier, the CO₂ concentration and the humidity can be locally (around the cultivation chamber) increased when working inside large incubators.
- For the control of temperature, the TempController 2000 is required. For a controlled CO₂-atmosphere, the CO₂-Controller 2000 is necessary.
- Currently, we offer three exchangeable baseplates which can be attached to the insert with the enclosed screws. According to the mounted baseplate Petri dishes of different sizes, POC-Systems and object slides (max. 80 x 27 mm) can be used.
- A constant focus across the whole observation area is provided for because the insert can be adjusted correctly with the four adjusting screws.
- Two channels allow the routing of tubes, e.g. for perfusion applications.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tr>
<td>For vessel size</td>
<td>27-50 x 40-80 mm or Ø 24–68 mm</td>
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<tr>
<td>Requirements</td>
<td>Scanning Stage for 160 x 116 mm inserts</td>
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</tr>
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<td></td>
<td>&quot;F2 – TempController 2000-2&quot;</td>
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<tr>
<td>Weight</td>
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<td>Control range</td>
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<tr>
<td>Observation Opening</td>
<td>Ø 30 mm, Ø 55 mm, 47 x 21 mm, 75 x 50</td>
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<tr>
<td>Type of vessels</td>
<td>Petri dishes “35” &amp; “60”,</td>
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<tr>
<td></td>
<td>POC-R2 or POCmini-2 cell cultivation systems,</td>
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<tr>
<td>Compatible</td>
<td>“G23 – CO₂-Cover UP-Set”</td>
</tr>
</tbody>
</table>
**E9 – Cooling/Heating Insert UP-Set 2000 11533034**

The Cooling/Heating Insert UP-Set 2000 is designed for the stable cooling and heating of cell cultivation systems. The insert is made of aluminum with a uniform heat distribution and a high thermal conductivity. Exchangeable baseplates enable the use of different sizes of Petri dishes and POC-Systems. The Cooling/Heating Insert UP-Set 2000 is suitable for scanning stages with a cut-out of 160 x 116 mm on upright microscopes.

- Three exchangeable baseplates with different observation openings for Petri dishes “35” and “60” as well as for POC Systems ensures both access to the objectives and maximum heat transfer.
- For perfusion applications, the tubes can be routed through the lateral openings or inserted into the channels for a preheating of the perfusion media.
- The insert can be levelled in the stage by 4 screws.
- The tubes (1 m and 2 m) can be connected with self sealing couplings. The temperature range depends on the circulating water or other liquids and is regulated at the circulator.
- For temperature control, the temperature sensor of the Insert can be connected to the TempController 2000

For vessel size: Ø 35 mm type fixed with an annular insert
- Ø 60 mm type fixed with clip clamping

Requirements:
- Scanning Stage for 160 x 116 mm inserts
- Thermostat or pump as liquid circulator
- Optional: “F1 – TempController 2000-1” or “F2 – TempController 2000-2”

- Weight: 0.8 kg
- Control range: Liquid, temperature control by Thermostat
- Observation Opening: Oval 32x30 mm
- Type of vessels: Petri dishes “35” & “60”, POC-R2 or POCmini-2 cell cultivation systems, Glass slides
- Compatible: “G23 – CO₂-Cover UP-Set”

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**E10 – Tokaihit, Leica TPX Type J Heating Frame 11533380**

Type D heating stage for upright microscopes (Leica MATS)
- Automatic thermo control system for XY stages
- From 5°C above ambient temperature up to 60°C
- Temperature accuracy +/- 0.3°C
- Digital temperature display with steps 0.1°C
- Power supply 100 - 240 V
- Indoor use only

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**E9**
Cooling/Heating Insert UP-Set 2000
Art.-No.: 11533034

**E10**
Tokaihit, Leica TPX Type J Heating Frame
Art.-No.: 11533380
Description

The Incubation System 2000 is a follow-on version of our present incubation solutions which are based on the controlling devices Tempcontrol 37-2 digital, CTI-Controller 3700 digital, CO₂-Controller and O₂-Controller. The components of the Incubation System 2000 can also be combined to various incubation solutions and can partly be rediscovered in the established heatable components and incubators of the present incubation solutions. Those have been electrically modified in a way that makes them compatible to the new controlling devices. For easier configuration, the compatible components and controlling devices are marked with the labeling “2000”. Listed below are the major improvements:

- Use of highly precise temperature sensors for experiments that are better comparable to each other.
- Controlling devices with an advanced LCD-dot matrix display and an easy-to-clean foil keypad.
- Possibility of connecting the controlling devices to a Windows-PC via USB; parallel operation of many devices (also such of similar type) at the same PC is possible.
- Controlling devices are equipped with a configurable digital PID-control; firmware, control parameters and further device parameters can be upgraded via USB.

Compatibility to the previous incubation system

Because of the use of a different temperature sensor (Pt100 with 4-wire technology) and further technical improvements, the previous incubation system components cannot be used with the new incubation system components. To prevent hybrid configurations, a new connector system (changed pin layout) at all connectors is used.
CONTROLLER 2000

F1 – TempController 2000-1  11533018
Temperature control unit with one channel to electrically heat various components of Leica Live on Stage components. The TempController 2000-1 can only be used together with components of the Incubation System 2000 and can be operated with the buttons at the front side as well as externally via USB.

- For: all heated components of 2000 series
- Outer dimension: 190 x 130 x 255 mm
- Weight: 4.25 kg
- Voltage/Power: 90-260V AC, 50...60Hz
- Power Consumption: 200 W max.
- Output: 24 VDC, max 4A
- Display: 0.0 to 99.9°C
- Resolution of display: 0.1°C
- Internal Resolution: 0.01°C
- Setpoint values: from 0.0 up to 60.0°C

F2 – TempController 2000-2  11533019
Temperature control unit with 2 equal, independent channels to electrically heat various components of Leica Live on Stage components. The TempController 2000-2 can only be used together with components of the Incubation System 2000 and can be operated with the buttons at the front side as well as externally via USB. For easier identification, both channels are set up with the name of the connected component on the operator interface.

- For: all heated components of 2000 series
- Outer dimension: 190 x 130 x 255 mm
- Weight: 4.25 kg
- Voltage/Power: 90-260V AC, 50...60Hz
- Power Consumption: 200 W max.
- Output: 24 V DC; max 4A per channel
  max. 4.2A combined power
- Display: 0.0 to 99.9°C
- Resolution of display: 0.1°C
- Internal Resolution: 0.01°C
- Setpoint values: 0.0 up to 60.0°C.
F3 – Heating Unit 2000

The Heating Unit 2000 supplies the large Leica incubators BLX 2000-series with heated air. For the control of the air temperature the TempController 2000-2 is required. The Heating Unit 2000 automatically adapts to the impressed line voltage. The speed of the fan is permanently monitored. If it falls below a threshold, the heater will be switched off.

• For:  
  “G34-41 – Incubator i8”  
  “G33 – Incubator i8 Black LS”  
  “G42 – Incubator DM IL LED 2000”  
  “G43 – Incubator 2000 f. DM4-6 B/LMD”

• Requirements:  
  “F2 – TempController 2000-2”

• Temperature range:  
  +5°C up to 40°C

• Outer dimension:  
  190 x 154 x 215 mm

• Weight:  
  3.7 kg

• Voltage/Power:  
  100..115/230V AC, 50…60Hz

• Power Consumption:  
  615 VA max.  
  250mA max.

• Output:  
  24 V DC from TempController 2000-2
F4 – CO₂-Controller 2000 11533021

The CO₂-Controller 2000 has been developed for the generation of a defined CO₂-concentration and a subsequent pressure-less supply of closed chambers with a low volume ("incubators") via the gassing principle "small gas flows".

With this control unit, the percentage of CO₂ in relation to the concentration in the ambient air can be increased. In order to increase the CO₂ amount, CO₂ coming from a CO₂ gas cylinder is added to the ambient air. A built-in CO₂ sensor permanently measures the CO₂ concentration of the effluent gas mix and reports the value to the control unit. This control unit operates a proportional valve and regulates the amount of CO₂ which is added to the air flow. A pump (controlled by the control unit) pumps in ambient air into the combined metering chamber of the gas measuring sensors in addition to the controlled gas inflow of CO₂.

Recommended range for the: CO₂ setpoint value from 0.0 Vol-% up to 20.0 Vol-%:

Accessories:
- Humidification Bottle 250 ml
- Filter set
- Sound absorber with sterile filter
- PU-tube, blue, 4x0.75, 6.0 m
- Tygon tube, clear, 2.0 m
- USB cable

For:
- 'G30 – Incubator P 2000'
- 'G31 – Incubator PM 2000 RBT'
- 'G32 – Incubator MMK 2000'
- 'C50 – Heatable Incubation Insert P-Set 2000'
- 'D3 – Cooling/Heating Incubation Insert P-Set 2000'
- all CO₂ Cover (G1 – G20)

Requirements:
- CO₂ supply
- Outer dimension: 190 x 130 x 255 mm
- Weight: 5.25 kg
- Voltage/Power: 90-260 V AC, 50…60Hz
- Power Consumption: 45 W max.
- CO₂ supply: 1-2 bar (15-29 psi) technical CO₂, purity >=99%
- CO₂ Display: 0.0 to 100.0 Vol-%
- CO₂ Res. of display: 0.1 Vol-%
- CO₂ Internal Res.: 0.01 Vol-%
- CO₂ Setpoint values: 0.0 up to 20.0 Vol-%
- Optional accessories: Humidification Bottle 500 ml, Heating Device Humidity 2000
F5 – CO₂-O₂-Controller 2000

The CO₂-O₂-Controller 2000 has been developed for the generation of a defined CO₂- and O₂-concentration and a subsequent pressure-less supply of closed chambers with a low volume ("incubators") via the gassing principle "small gas flows".

With this control unit, the percentage of CO₂ in relation to the concentration in the ambient air can be increased. Additionally, the percentage of O₂ in this air-gas-mixture which averages approx. 20.8 Vol-% in the ambient air can be decreased with the O₂ mode of operation.

In order to increase the CO₂ amount, CO₂ coming from a CO₂ gas cylinder is added to the ambient air. A built-in CO₂ sensor permanently measures the CO₂ concentration of the effluent gas mix and reports the value to the control unit. This control unit operates a proportional valve and regulates the amount of CO₂ which is added to the air flow.

In order to decrease the amount of oxygen (O₂), nitrogen coming from a N₂ gas cylinder is added to the ambient air, so that it is diluted with nitrogen until the preset oxygen content is reached. A built-in O₂ sensor permanently measures the O₂ concentration of the effluent gas mix and reports the value to the control unit. This control unit operates a proportional valve and regulates the amount of nitrogen which is added to the air flow. A pump (controlled by the control unit) pumps in ambient air into the combined metering chamber of the gas measuring sensors in addition to the controlled gas inflow of CO₂ and N₂.

Recommended range for the: CO₂ setpoint value from 0.0 Vol-% up to 20.0 Vol-%:
Recommended range for the: O₂ setpoint value from 0.0 Vol-% up to 21.0 Vol-%:

Accessories:
• Humidification Bottle 500 ml
• Filter set
• Sound absorber with sterile filter
• PU-tube, blue 4x0.75   6.0 m
• PU-tube, black 4x0.75   4.0 m
• Tygon tube, clear 2.0 m
• USB cable
For:  
- "G30 – Incubator P 2000"
- "G31 – Incubator PM 2000 RBT"
- "G32 – Incubator MMK 2000"
- "C50 – Heatable Incubation Insert P-Set 2000"
- "D3 – Cooling/Heating Incubation Insert P-Set 2000"
- all CO2 Cover (G1 – G20)

Requirements:  
- N2 supply
- Outer dimension: 190 x 130 x 255 mm
- Weight: 5.75 kg
- Voltage/Power: 90-260V AC, 50…60Hz
- Power Consumption: 50W max.
- CO2 supply: 1-2 bar (15-29 psi) technical CO2, purity >=99%
- CO2 Display: 0.0 to 100.0 Vol-%
- CO2 Res. of display: 0.1 Vol-%
- CO2 Internal Res.: 0.01 Vol-%
- CO2 Setpoint values: 0.0 up to 20.0 Vol-%
- N2 supply: 1-2 bar (15-29 psi) technical N2, purity >=99%
- O2 Display: 0.0 to 25.0 Vol-%
- O2 Res. of display: 0.1 Vol-%
- O2 Internal Res.: 0.05 Vol-%
- O2 Setpoint values: 0.0 up to 21.0 Vol-%
- Optional accessories: Humidification Bottle 250 ml, Heating Device Humidity 2000

**CONTROL SENSOR 2000**

F6 – Control Sensor T 2000 11533024

The Control Sensor T 2000 is a small-sized control device for the measurement of temperature in different cell cultivation vessels, especially “35” and “60” Petri dishes.

- With the help of the sensor, the medium temperature can be measured in pre-experiments. Due to its small shape and the supplied accessories, the Control Sensor T 2000 measures the temperature under realistic incubation conditions as they exist in later experiments without control sensor.
- For power supply, the sensor has to be connected to a TempController.

For:  
- Cell cultivation vessels, especially “35” and “60” Petri dishes

Requirements:  
- “F1 – TempController 2000-1” or
- “F2 – TempController 2000-2”

Outer dimension:  
- Diameter 40/65 mm, height 18 mm

Weight:  
- 0.2 kg
A problem when heating up air inside an incubation system is that it can take up more water. This results in a decrease of relative humidity, which subsequently will cause an increase of evaporation from the media, mainly because most of the lids of multi-well plates have a small gap to let CO₂ pass. Less water in the media means a higher ion concentration, which will influence cell biological processes and finally leads to cell death. To reduce the evaporation rate the air inside the incubation system must be humidified.

To humidify the air in the
• "G30 – Incubator P 2000"
• "G31 – Incubator PM 2000 RBT"
• "G32 – Incubator MMK 2000"
• "C50 – Heatable Incubation Insert P-Set 2000"
• "D3 – Cooling/Heating Incubation Insert P-Set 2000"
• or any CO₂-Covers
the humidifier is used. This humidifier has a volume of 250 ml or 500 ml and is connected to with the Controller. Using CO₂ covers it could be placed inside the Incubator i8 for best performance and enriches the air-CO₂ mixture going to the CO₂-Cover with water.

11533562 (Already part of CO₂ Controller 11533021)
• For:
  "G30 – Incubator P 2000"
  "G31 – Incubator PM 2000 RBT"
  "G32 – Incubator MMK 2000"
  "C50 – Heatable Incubation Insert P-Set 2000"
  "D3 – Cooling/Heating Incubation Insert P-Set 2000"
  all CO₂ Cover (G1 –G17) in Incubator i8
• Outer dimension: 70 x 170 mm
• Material: Glass, transparent
• Volume: 250 ml
• Weight: 0.3 kg

11533563 (Already part of CO₂ Controller 11533022)
• For:
  "G30 – Incubator P 2000"
  "G31 – Incubator PM 2000 RBT"
  "G32 – Incubator MMK 2000"
  "C50 – Heatable Incubation Insert P-Set 2000"
  "D3 – Cooling/Heating Incubation Insert P-Set 2000"
  all CO₂ Cover (G1 –G17) in Incubator i8
• Outer dimension: 85 x 210 mm
• Material: Glass, transparent
• Volume: 500 ml
• Weight: 0.4 kg
F9 – Heating Device Humidity 2000

The Heating Device Humidity 2000 is designed for the stable heating of the Humidification Bottle 250 ml and the Humidification Bottle 500 ml. The Heating Device Humidity 2000 warms up the water inside the bottles when no large incubator is used. The Heating Device Humidity 2000 is compatible to both Humidifier due to the special design. The additional aluminum insert for the use with the smaller bottle can be removed when the larger bottle is used. The gas-air-mixture is routed through the “Humidification Bottle” and enters the incubator or CO2-Cover in a warmed-up state, thus providing for a stable temperature and increased humidity around the cell cultivation vessel. For power supply and control of temperature the Heating Device Humidity 2000 has to be connected to the TempController 2000-1 or 2000-2.

Accessories:
- Insulation tube
  - For: Humidification Bottle 250 ml and Humidification Bottle 500 ml
  - Requirements: “F1 – TempController 2000-1” or “F2 – TempController 2000-2”
  - Operating voltage: 24V DC
  - Power consumption: max. 2.1A
  - Control range: ambient temperature up to 60°
  - Outer dimension: Ø 100 x 124 mm (DxH)
  - Weight: approx. 1.5 kg
G1 – CO₂-Cover PM
This CO₂-Cover PM fits onto different inserts and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass. Holes at the bottom side distribute the CO₂-gas-mixture uniformly in the incubation room. The cover provides a relative humidity of approx. 90%.

- For Inserts:
  - "C41 – Heating Insert P 2000"
  - "C42 – Heating Insert P Lab-Tek™ 2000"
  - "C43 – Heating Insert M06 2000 EC"
  - "C44 – Heating Insert M12 2000 EC"
  - "C45 – Heating Insert M24 2000 EC"
  - "C46 – Heating Insert M96 2000 EC"
- Requirements:
  - "F4 – CO₂-Controller 2000" or
  - "F5 – CO₂-O₂-Controller 2000"
- Observation Opening: 115 x 80 mm
- Applicable: for DIC in Incubator i8 series
- Provided humidity: 90%
- Weight: 0.15 kg

G2 – CO₂-Cover HP
This CO₂-Cover HP fits onto different inserts and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of opaque acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

- For Inserts:
  - "C23 – Insert N for Lab-Tek™"
  - "D1 – Cooling/Heating Insert P"
  - "D2 – Cooling/Heating Insert P Lab-Tek™"
  - "C19 – Universal Holding frame K100-Set"
    + "C21 – Top Frame KP-Set"
- Requirements:
  - "F4 – CO₂-Controller 2000" or
  - "F5 – CO₂-O₂-Controller 2000"
- Applicable: for DIC in Incubator i8 series
- Provided humidity: 90%
- Weight: 0.15 kg
**G3 – CO₂-Cover HP-MG**  11532982

This CO₂-Cover HP-MG fits onto different inserts and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of opaque acrylic glass with a glass insert to permit DIC. The slidable glass insert permits an easy access to the cell cultivation vessel. Cover with 2 openings with silicone seals for the tubes (for perfusion applications). The cover provides a relative humidity of approx. 90%.

- **For Inserts:**
  - "C23 – Insert N for Lab-Tek™"
  - "D1 – Cooling/Heating Insert P"
  - "D2 – Cooling/Heating Insert P Lab-Tek™"
  - "C19 – Universal Holding frame K100-Set"
    + "C21 – Top Frame KP-Set"

- **Requirements:**
  - "F4 – CO₂-Controller 2000" or
  - "F5 – CO₂-O₂-Controller 2000"

- **Observation Opening:** 78 x 100 mm
- **Applicable:** for DIC in Incubator i8 series
- **Provided humidity:** 90%
- **Weight:** 0.15 kg

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**G4 – CO₂-Cover HP-MG-L**  11533082

This CO₂-Cover HP-MG-L fits onto different inserts and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of opaque acrylic glass with a glass insert to permit DIC. The slidable glass insert permits an easy access to the cell cultivation vessel. The cover provides a relative humidity of approx. 90%.

- **For Inserts:**
  - "C41 – Heating Insert P 2000"
  - "C42 – Heating Insert P Lab-Tek™ 2000"
  - "C43 – Heating Insert M06 2000 EC"
  - "C44 – Heating Insert M12 2000 EC"
  - "C45 – Heating Insert M24 2000 EC"
  - "C46 – Heating Insert M96 2000 EC"

- **Requirements:**
  - "F4 – CO₂-Controller 2000" or
  - "F5 – CO₂-O₂-Controller 2000"

- **Observation Opening:** 78 x 100 mm
- **Applicable:** for DIC in Incubator i8 series
- **Provided humidity:** 90%
- **Weight:** 0.15 kg
**G5 – CO₂-Cover MH**  
11533056  
The CO₂-Cover MH fits on the Universal Mounting Frames MH 2000, MH-L 2000 and MH-R 2000 and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

- **For Inserts:**  
  "B18 – Heatable Universal Holding frame MH 2000"  
  "B19 – Heatable Universal Holding frame MH-L 2000"  
  "B20 – Heatable Universal Holding frame MH-R 2000"

- **Requirements:**  
  "F4 – CO₂-Controller 2000" or  
  "F5 – CO₂-O₂-Controller 2000"

- **Observation Opening:** 62 x 92 mm

- **Applicable:** for DIC in Incubator i8 series

- **Provided humidity:** 90%

- **Weight:** 0.1 kg

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**G6 – CO₂-Cover KH**  
11533057  
The CO₂-Cover KH fits on the Universal Mounting Frames KH 2000, KH-L 2000 and KH-R 2000 and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

- **For Inserts:**  
  "C31 – Heatable Universal Holding frame KH 2000"  
  "C32 – Heatable Universal Holding frame KH-L 2000"  
  "C33 – Heatable Universal Holding frame KH-R 2000"

- **Requirements:**  
  "F4 – CO₂-Controller 2000" or  
  "F5 – CO₂-O₂-Controller 2000"

- **Observation Opening:** 62 x 92 mm

- **Applicable:** for DIC in Incubator i8 series

- **Provided humidity:** 90%

- **Weight:** 0.1 kg

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**G7 – CO₂-Cover MM M**  
11533058  
The CO₂-Cover MM M fits on the Universal Mounting Frames MH 2000, MH-L 2000 and MH-R 2000 and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The slidable glass insert permits an easy access for Micromanipulation. The two glass sliders can be opened and closed by 25 x 65 mm. As tested, the pH-value of the nutrient medium in dishes and chambers is stable during micromanipulation at an open space of up to 5 mm between the two glass sliders. It is sufficient to adjust a very soft CO₂/air stream. The cover provides a relative humidity of approx. 90%.

- **For Inserts:**  
  "B18 – Heatable Universal Holding frame MH 2000"  
  "B19 – Heatable Universal Holding frame MH-L 2000”  
  "B20 – Heatable Universal Holding frame MH-R 2000"

- **Requirements:**  
  "F4 – CO₂-Controller 2000" or  
  "F5 – CO₂-O₂-Controller 2000"

- **Observation Opening:** 62 x 92 mm

- **Applicable:** for DIC in Incubator i8 series

- **Provided humidity:** 90%

- **Weight:** 0.1 kg
The CO₂-Cover MM K fits on the Universal Mounting Frames KH 2000, KH-L 2000 and KH-R 2000 and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The slidable glass insert permits an easy access for Micro-manipulation. The two glass sliders can be opened and closed by 25 x 65 mm. As tested, the pH-value of the nutrient medium in dishes and chambers is stable during micromanipulation at an open space of up to 5 mm between the two glass sliders. It is sufficient to adjust a very soft CO₂/air stream. The cover provides a relative humidity of approx. 90%.

<table>
<thead>
<tr>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For Inserts:</strong></td>
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<tr>
<td>“C31 – Heatable Universal Holding frame KH 2000”</td>
</tr>
<tr>
<td>“C32 – Heatable Universal Holding frame KH-L 2000”</td>
</tr>
<tr>
<td>“C33 – Heatable Universal Holding frame KH-R 2000”</td>
</tr>
<tr>
<td><strong>Requirements:</strong></td>
</tr>
<tr>
<td>“F4 – CO₂-Controller 2000” or</td>
</tr>
<tr>
<td>“F5 – CO₂-O₂-Controller 2000”</td>
</tr>
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<td><strong>Observation Opening:</strong></td>
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<tr>
<td>62 x 92 mm</td>
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<tr>
<td><strong>Applicable:</strong></td>
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<td>for DIC</td>
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<tr>
<td>in Incubator i8 series</td>
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<tr>
<td><strong>Provided humidity:</strong></td>
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<td><strong>Weight:</strong></td>
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<tr>
<td>0.1 kg</td>
</tr>
</tbody>
</table>
G11 – CO₂-Cover KM
The CO₂-Cover KM fits on the Universal Mounting Frames KM and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

- For Inserts: "C115 – Universal Holding frame KM Click-In"
- Requirements: "F4 – CO₂-Controller 2000” or “F5 – CO₂-O₂-Controller 2000”
- Observation Opening: 120 x 90 mm
- Applicable: for DIC in Incubator i8 series
- Provided humidity: 90%
- Weight: 0.2 kg

G12 – CO₂-Cover KM-Set
CO₂-Cover with two sliding inserts for the cultivation & micromanipulation of cells in combination with Universal Mounting Frame KM.

- For Inserts: "C115 – Universal Holding frame KM Click-In"
- Requirements: "F4 – CO₂-Controller 2000” or “F5 – CO₂-O₂-Controller 2000”
- Observation Opening: for Click-in inserts
- Applicable: for DIC in Incubator i8 series
- Provided humidity: 90%
- Weight: 0.2 kg

G13 – CO₂-Cover GL
The CO₂-Cover GL fits on the Insert GL-Set and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

- For Inserts: “C22 – Insert GL-Set”
- Requirements: "F4 – CO₂-Controller 2000” or “F5 – CO₂-O₂-Controller 2000”
- Observation Opening: 75 x 50 mm
- Applicable: for DIC in Incubator i8 series
- Provided humidity: 90%
- Weight: < 0.1 kg

G14 – CO₂-Cover 6xPetri
The CO₂-Cover 6xPetri fits on the Holding Frame for 6 Petri dishes and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

- For Inserts: “C17 – Holding frame 6 Petri dishes”
- Requirements: "F4 – CO₂-Controller 2000” or “F5 – CO₂-O₂-Controller 2000”
- Observation Opening: for 6 x 35 mm Petri dishes
- Applicable: for DIC in Incubator i8 series
- Provided humidity: 90%
- Weight: 0.1 kg
G15 – CO₂-Cover Quad

The CO₂-Cover quad fits on the Holding Frame Slide Holder (Quad) and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

• For Inserts: "C16 – Holding frame Slide Holder(quad)"
• Requirements: "F4 – CO₂-Controller 2000" or "F5 – CO₂-O₂-Controller 2000"
• Observation Opening: for 4 x slides
• Applicable: for DIC in Incubator i8 series
• Provided humidity: 90%
• Weight: 0.1 kg

G16 – CO₂-Cover K100-Set

The CO₂-Cover K100-Set fits on the Universal Mounting Frame K100-Set and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

• For Inserts: "C19 – Universal Holding frame K100-Set"
• Requirements: "F4 – CO₂-Controller 2000" or "F5 – CO₂-O₂-Controller 2000"
• Observation Opening: for 4 x slides
• Applicable: for DIC in Incubator i8 series
• Provided humidity: 90%
• Weight: 0.1 kg

G17 – CO₂-Cover TH

The CO₂-Cover TH fits on the Tokaihit Thermoplates TPX and permits local CO₂-control in a completely closed environment in the large Incubator i8. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover provides a relative humidity of approx. 90%.

• For Inserts: "C34 – Tokaihit, Leica TPX Type HF Heating Frame, Glass" "C36 – Tokaihit, Leica TPX Type NF Heating Frame 26, Metal" "C37 – Tokaihit, Leica TPX Type I2 Heating Frame 26, Metal"
• Requirements: "F4 – CO₂-Controller 2000" or "F5 – CO₂-O₂-Controller 2000"
• Observation Opening: 75 x 50 mm
• Applicable: for DIC in Incubator i8 series
• Provided humidity: 90%
• Weight: 0.2 kg
COVERS FOR STAGE INSERTS (UPRIGHT MICROSCOPES)

G20 – CO₂-Cover GL-A 11533062
The swiveling CO₂-Cover GL-A fits on the Insert GL-Set (in combination with an upright microscope), Universal Mounting Frame AK and on the 3 different Heatable Universal Mounting Frames AKH 2000 and permits local CO₂-control in a completely closed environment in the large Incubator 2000 f. DM4-6 B/LMD. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover has an opening with a silicone seal for different objectives (upright microscopes). The cover provides a relative humidity of approx. 90%.

- For Inserts: “C22 – Insert GL-Set”
- Applicable: for DIC in Incubator 2000 f. DM4-6 B/LMD
- Provided humidity: 90%
- Weight: 0.2 kg

G21 – CO₂-Cover AKH 11533063
The CO₂-Cover AKH fits on the Universal Mounting Frame AK and on the 3 different Heatable Universal Mounting Frames AKH 2000 and permits local CO₂-control in a completely closed environment in the Incubator 2000 f. DM4-6 B/LMD. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover has an opening with a silicone seal for different objectives. The cover provides a relative humidity of approx. 90%.

- For Inserts: “E5 – Heatable Universal Holding frame AKH 2000”
  “E6 – Heatable Universal Holding frame AKH-L 2000”
  “E7 – Heatable Universal Holding frame AKH-R 2000”
- Applicable: for DIC in Incubator 2000 f. DM4-6 B/LMD
- Provided humidity: 90%
- Weight: 0.2 kg
G22 – CO₂-Cover AK-Set  11533064
The CO₂-Cover AK fits on the Universal Mounting Frame AK-set and permits local CO₂-control in a completely closed environment in the Incubator 2000 f. DM4-6 B/LMD. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover has an opening with a silicone seal for different objectives. The cover provides a relative humidity of approx. 90%.

- For Inserts: “E4 – Universal Holding frame AK-Set”
- Applicable: for DIC in Incubator 2000 f. DM4-6 B/LMD
- Provided humidity: 90%
- Weight: 0.2 kg

G23 – CO₂-Cover UP-Set  11533066
The CO₂-Cover UP-Set fits on the Heating Insert UP-Set 2000 and Cooling/Heating Insert UP-Set 2000 and permits local CO₂-control in a completely closed environment in the Incubator 2000 f. DM4-6 B/LMD. The cover is made out of transparent acrylic glass with a glass insert to permit DIC. The cover has an opening with a silicone seal for different objectives. The cover provides a relative humidity of approx. 90%.

- For Inserts: “E8 – Heating Insert UP-Set 2000”
  “E9 – Cooling/Heating Insert UP-Set 2000”
- Applicable: for DIC in Incubator 2000 f. DM4-6 B/LMD
- Provided humidity: 90%
- Weight: 0.2 kg

CO₂-Covers for Ludl Piezo Inserts  on request
CO₂-Covers for Prior Piezo Inserts  on request
The small size Incubator P 2000 with low-volume for warm air incubation and/or CO₂-control mounted on top of the Cooling/Heating Insert is used for the stabilization of In vitro conditions for cell and tissue culture. This incubator is designed for homogenous heat, CO₂ and O₂ distribution.

The heatable glass warms up the incubation chamber from the top. This avoids the condensation of water on the cover of the cell cultivation vessel. The heatable glass of the incubator is translucent to about 90% in the visible light range. The incubator is DIC Compatible. The incubator is compatible to the condensers S23, S28, S50 and S70. For CO₂-control the CO₂-Controller 2000 and for O₂-control the CO₂-O₂-Controller 2000 are mandatory. Temperature control is carried out with the TempController 2000-2.

- **Material:** Aluminum, black anodized; heated glass
- **Operating voltage:** DC 24V protective low voltage
- **Power consumption:** max. 0.5 A
- **Heating range:** 3°C above ambient up to 40°C
- **Output:** 24V DC from TempController 2000-2
- **Compatible Inserts:** "D1 – Cooling/Heating Insert P"
  "D2 – Cooling/Heating Insert P Lab-Tek™"
- **Observation area:** 120 x 77 mm
- **Height of observation area:** > 21 mm
- **Dimensions:** 189 x 115 x 14 mm (L x W x H)
- **Requirements:** "F4 – CO₂-Controller 2000" or "F5 – CO₂-O₂-Controller 2000"
  "F1 – TempController 2000-1" or "F2 – TempController 2000-2"
- **Weight:** 0.30 kg
**G31 – Incubator PM 2000 RBT**

Small incubator for warm air incubation, CO₂- and O₂-control in combination with a Heating Insert.

- The heated glass of the incubator is permeable to 90% of light in the visible wavelength range.
- The heated glass warms up the incubation chamber from the top. This avoids the condensation of water on the cover of the cell cultivation vessel.
- The incubator is suitable for high-resolution microscopy. It is designed for the LD-condensors S23, S28, S40 and S70.

The incubator is DIC Compatible. For CO₂-control the CO₂-Controller 2000 and for O₂-control the CO₂-O₂-Controller 2000 are mandatory. Temperature control is carried out with the TempController 2000-2.

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<thead>
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<th>Specification</th>
<th>Details</th>
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<tbody>
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<td>Material</td>
<td>Aluminum, black anodized; heated glass</td>
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<tr>
<td>Operating voltage</td>
<td>DC 24 V protective low voltage</td>
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<tr>
<td>Power consumption</td>
<td>max. 0.5 A</td>
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<tr>
<td>Heating range</td>
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<tr>
<td>Output</td>
<td>24 V DC from TempController 2000-2</td>
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<tr>
<td>Compatible Inserts</td>
<td>&quot;C41 – Heating Insert P 2000&quot;</td>
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<td>&quot;C42 – Heating Insert P Lab-Tek™ 2000&quot;</td>
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<td>&quot;C43 – Heating Insert M06 2000 EC&quot;</td>
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<td>Observation area</td>
<td>120 x 77 mm</td>
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<td>Height of observation area</td>
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<td>Dimensions</td>
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<td>&quot;F5 – CO₂-O₂-Controller 2000&quot;</td>
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<tr>
<td></td>
<td>&quot;F1 – TempController 2000-1&quot; or</td>
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<td></td>
<td>&quot;F2 – TempController 2000-2&quot;</td>
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<tr>
<td>Weight</td>
<td>0.30 kg</td>
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</table>
The small size Incubator MMK 2000 with low-volume for warm air incubation and/or CO₂ control mounted on top of the 3 different Heatable Universal Mounting Frames is used for the stabilization of in vitro conditions for cell and tissue culture. This incubator is designed for homogenous heat, CO₂ and O₂ distribution.

The main feature of this incubator is the possibility of moving the 2 heatable glass sides for micromanipulation. The heatable glass warms up the incubation chamber from the top. This avoids the condensation of water on the cover of the cell cultivation vessel. The heatable glass of the incubator is translucent to about 90% in the visible light range. The incubator is DIC Compatible. The incubator is compatible to the condensers S23, S28, S50 and S70. For CO₂-control the CO₂-Controller 2000 and for O₂-control the CO₂-O₂-Controller 2000 are mandatory. Temperature control is carried out with the TempController 2000-2.

- **Material:** POM frame; heated glass
- **Operating voltage:** DC 24 V protective low voltage
- **Power consumption:** max. 0.6 A
- **Heating range:** 3°C above ambient up to 40°C
- **Output:** 24 V DC from TempController 2000-2
- **Compatible Inserts:** "C31 – Heatable Universal Holding frame KH 2000"
  "C32 – Heatable Universal Holding frame KH-L 2000"
  "C33 – Heatable Universal Holding frame KH-R 2000"
- **Observation area:** 114 x 84 mm
- **Height of observation area:** > 21 mm
- **Dimensions:** 143 x 137 x 18 mm (L x W x H)
- **Requirements:** "F4 – CO₂-Controller 2000" or
  "F5 – CO₂-O₂-Controller 2000"
  "F1 – TempController 2000-1" or
  "F2 – TempController 2000-2"
- **Weight:** 0.25 kg
**LARGE VOLUME INCUBATORS FOR INVERTED MICROSCOPES**

**Incubator i8**
The large incubator for Leica DMi8 Series for the stabilization of temperature and CO₂-concentration.

The incubator
- has two large sliding doors in the front panel on the left and right hand side, and has an integrated LED illumination.
- has two slide-in modules on the left and the right hand side.
- heats both the cell cultivation vessel (prevention of condensation) and the objectives.
- is compatible to all condensers and stages.
- is easy to install by just one person. No tools are required.
- will not filled-up with CO₂. A local CO₂-incubation is possible with specific Heating inserts and non-heatable CO₂-Covers in combination with the CO₂-Controller 2000.

A temperature sensor to adapt to different setups can be freely positioned inside the incubator.

Temperature control is carried out with the "F2 – TempController 2000-2". One channel of this controller is used for Heating Stage or Insert, the second channel is directly connected to the "F3 – Heating Unit 2000". In case of long-term experiments an increasing amount of water will be extracted and the ion concentration in the nutrition medium may rise. Using FoilCovers (see H) or in case of CO₂-control by the humidifier which is part of the "F4 – CO₂-Controller 2000" will reduce this effect.

<table>
<thead>
<tr>
<th>For microscopes:</th>
<th>Leica DMi8-series</th>
</tr>
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<tbody>
<tr>
<td>Material:</td>
<td>Acrylic glass, black</td>
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<tr>
<td>Control range:</td>
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<td>Weight:</td>
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</table>

**G33 – Incubator i8 Black LS**

- Housing and Black door set with laser safety

The Black LS incubator is specially designed to match all laser safety issues in combination with standard incubator performance. Based on the regular large incubator the Black LS incubator features interlock doors, which will attenuate the laser power to class I system after opening the doors. *Does not include drawers.*

**WARNING**

Do not use transparent door set when coupling a laser. Danger of serious and irreversible eye damage from laser radiation! Radiation of the eye or skin from direct or indirect laser radiation has to be avoided by all means! The laser light can cause serious eye damage and skin damage!
**BASIC HOUSING**

G34 – Incubator i8, Basic housing 11533465

Remark:
Basic black housing without doors and drawers.

- LED Illumination,
- Temperature sensor, hose and mounting plate

Incubator i8, Door set, transparent 11533814

Incubator i8, standard black door set 11533467

G34

Incubator i8, Basic housing with black doors
Art.-Nr.: 11533465

Incubator i8, Basic housing with transparent doors
Art.-Nr.: 11533465

Incubator i8, transparent door set
Art.-Nr.: 11533814

Incubator i8, standard black door set
Art.-Nr.: 11533467
DRAWERS

Left

**Incubator i8, standard drawer, left** 11533276
Used for standard sized cameras. Not compatible with SPE, Spinning Disk or bigger camera systems (ask for confirmation).
Can be ordered separately for replacement/upgrade

**Incubator i8, drawer max. clearance, left** 11533284,
Special drawer on left-hand side for Incubator i8, Basic housing.
Not for Incubator i8 Black LS.
With maximum clearance for using larger cameras/detectors on the left imaging port.
The drawer with minimized form factor allowing the adaptation of bulky components on the left-hand side of the microscope.

**Incubator i8, special base plate, left** 11533398
Special base plate for the left side of the Incubator i8 which is compatible with the CSU-W1 spinning disk.

**Incubator i8, drawer for FRAP/TIRF, left** 11533468
Special drawer for FRAP/TIRF. Compatible with left infinity port and Infinity modules.

Right

**Incubator i8, standard drawer, right** 11533277
The standard right drawer is designed for all dedicated stages, in particular for Leica 3-plate stage. Can be ordered separately for replacement/upgrade

**Incubator i8, drawer with door, right** 11533281,
Special drawer on right-hand side for Incubator i8 with an additional integrated door.
Not compatible with 3-plate stages!
Can be ordered separately for replacement/upgrade

**Incubator i8, drawer for FRAP/TIRF, right** 11533469
Special drawer for FRAP/TIRF. Compatible with right infinity port and Infinity modules.
Not compatible with 3-plate stages!
The large incubator for Leica DM IL LED for the stabilization of temperature and CO₂-concentration.

The incubator
• has a large sliding door in the front panel and one in the left side panel.
• heats both the cell cultivation vessel (prevention of condensation) and the objectives.
• is compatible to all condensers and manual stages.
• is easy to install by just one person. No tools are required.
• will not filled-up with CO₂. A local CO₂-incubation is possible with specific Heating Inserts and non-heatable CO₂-Covers in combination with the CO₂-Controller 2000.

A temperature sensor to adapt to different setups can be freely positioned inside the incubator.

For operation, the use of further heated components (e.g. Heating Stage or Heating Inserts) are recommend.

Temperature control is carried out with the "F2 – TempController 2000-2". One channel of this controller is used for Heating Stage or Insert, the second channel is directly connected to the "G42 – Incubator DM IL LED 2000". In case of long-term experiments an increasing amount of water will be extracted and the ion concentration in the nutrition medium may rise. Using FoilCovers (see H) or in case of CO₂-control by the humidifier which is part of the "F4 – CO₂-Controller 2000" will reduce this effect.

- For microscope: Leica DM IL LED
- Material: Acrylic glass, optically clear
- Openings: 160 x 160 mm, 80 x 80 mm
- Control range: 3°C above ambient up to 50°C
- Dimension: 460 x 460 x 300 mm
- Requirements: "F3 – Heating Unit 2000"
  "F2 – TempController 2000-2"
- Weight: 6.0 kg
INCUBATOR FOR UPRIGHT MICROSCOPES (DM4-6 B/LMD6-7)

G43 – Incubator 2000 f. DM4-6 B/LMD

The large incubator for Leica DM4-6 B microscopes (including Leica LMD6/7) for the stabilization of temperature and CO₂-concentration.

The incubator
• has two large sliding doors in the front panel on the left and right hand side, below there are two smaller openings with sliding doors.
• heats both the cell cultivation vessel (prevention of condensation) and the objectives.
• is easy to install by just one person. No tools are required.
• will not filled-up with CO₂. A local CO₂-incubation is possible with specific Heating Inserts and non-heatable CO₂-Covers in combination with the CO₂-Controller 2000

A temperature sensor to adapt to different setups can be freely positioned inside the incubator.

For operation, the use of further heated components (e.g. Heating Inserts) are recommend.

Temperature control is carried out with the "F2 – TempController 2000-2". One channel of this controller is used for Heating Insert, the second channel is directly connected to the "F3 – Heating Unit 2000".

For microscope: Leica DM4-6 B, LMD6-7

• Material: Acrylic glass, optically clear
• Openings: 150 x 150 mm, 90 x 115 mm
• Control range: 3°C above ambient up to 50°C
• Dimension: 680 x 530 x 360 mm (WxDxH)
• Requirements: "F3 – Heating Unit 2000"
  "F2 – TempController 2000-2"
• Weight: 6.0 kg
The relative humidity within an incubator depends on the temperature – the higher the temperature, the greater the volume of water that is absorbed. A problem when heating up air inside an incubation system is that it can take up more water. This results in a decrease of relative humidity, which subsequently will cause an increase of evaporation from the media, mainly because most of the lids of multi-well plates have a small gap to let CO₂ pass. For the experiment this means that as the temperature rises, more and more water is extracted from the nutrients in the cell cultures, which results in an increased ion concentration. Measurements have shown that with cells only 5–10 % water loss in the nutrient medium is tolerated. Less water respectively higher ion concentration will influence cell biological processes and finally leads to cell death. For the reduction of evaporation 2 different principles or a combination of both can be used: increasing the humidity of the surrounding environment or a reduction of the lost water from the cultivation vessel. Depending on the volume of liquid and the size of the surface, a Humidifying System (see F7-F9) and/or FoilCovers should be used when observing culture vessels. Both solutions are recommended for incubation periods of longer than 6 hours.

FOILCOVERS

In the case of long-term experiments of more than 12 hours in open cultivation the use of a FoilCover is recommended as protection against evaporation of water. The FoilCover consists of a stretching ring or rectangular frame and a base ring or rectangular frame, both made of stainless steel. Gas permeable CultFoil is fixed between the two rings.

CultFoil:
- **For:** FoilCover Rings and FoilCover Frames
- **Material:** Optically clear foil (CultFoil 25 μm), only permeable for gases

FoilCovers:
- **Material:** Stainless steel, V2A
- **Preparation:** Sterilizable with foil by autoclaving (121°C) or by dry heating (165–170°C)
- **Weight:** 0.1 kg

Circular FoilCovers are available in different sizes:

**H01 – FoilCover ring frame Ø 22 mm for POCmini**
11521741
The FoilCover comes with Base Ring and stretching Ring as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

**H11 – CultFoil 25 μm, 20 pieces for POCmini**
11521742
Spare for FoilCover ring frame Ø 22 mm for POCmini

**H02 – FoilCover ring frame Ø 33 mm for POC-R and POC**
11521753
The FoilCover comes with Base Ring and stretching Ring as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

**H12 – CultFoil 25 μm, 20 pieces for POC-R and POC**
11521754
Spare for FoilCover ring frame Ø 33 mm for POC-R and POC

**H03 – FoilCover ring frame Ø 35 mm for “35” Petri dishes**
11521743
The FoilCover comes with Base Ring and stretching Ring as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

**H13 – CultFoil 25 μm, 20 pieces for “35” Petri dishes**
11521744
Spare for FoilCover ring frame Ø 35 mm for “35” Petri dishes
H04 – FoilCover ring frame Ø 56 mm for “60” Petri dishes 11521745
The FoilCover comes with Base Ring and stretching Ring as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

H14 – CultFoil 25 μm, 20 pieces for “60” Petri dishes 11521746
Spare for FoilCover ring frame Ø 56 mm for “60” Petri dishes

Rectangular FoilCovers are available in different sizes:
H07 – FoilCover frame 128 x 86 mm for Multiwell Plates (M06, M12, M24, M96) 11521747
The FoilCover comes with Base rectangular frame and stretching frame as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

H17 – CultFoil 25 μm, 20 pieces for 128 x 86 mm frame 11521748
Spare for FoilCover rectangular frame 128 x 86 mm for Multiwell Plates.

H08 – FoilCover rectangular frame 52 x 26.0 mm for Lab-Tek™ 11532504
The FoilCover comes with Base rectangular frame and stretching frame as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

H18 – CultFoil 25 μm, 20 pieces for 52 x 26.0 mm frame 11532548
Spare for FoilCover rectangular frame 52 x 26 mm for Lab-Tek™.

H09 – FoilCover rectangular frame 57 x 27.5 mm for Lab-Tek™ II 11532542
The FoilCover comes with Base rectangular frame and stretching frame as well as with a mounting plate and 20 pieces of CultFoil (FEP: fluor-ethylene-propylene). The Foil is not DIC compatible.

H19 – CultFoil 25 μm, 20 pieces for 57 x 27.5 mm frame 11532549
Spare for FoilCover rectangular frame 57 x 27.5 mm for Lab-Tek™ II.

GLASSCOVERS
The GlassCovers come with Base Ring and Glass Insert. The GlassCovers are DIC compatible.

The Glass Covers are designed to fit on the Petri dish, micro-dish (ibidi®) and Imaging Dish CG. They reducing the evaporation of water from the nutrition media and are especially suited for high resolution microscopy and DIC applications in particular.

H21 – GlassCover frame Ø 35 mm for “35” Petri dishes 11532648
H22 – GlassCover frame Ø 56 mm for “60” Petri dishes 11532649
H23 – GlassCover frame Ø 35 mm for “35” microdish (ibidi®) 11533091
H24 – GlassCover frame Ø 35 mm for “35” Imaging Dish CG 11533092
H25 – GlassCover for 8 well ibidi® Chamber 11533093
H26 – GlassCover for 8 well Lab-Tek™ Chamber 11533094
In order to meet the combined demands of live cell imaging and the use of all state-of-the-art contrasting techniques of the Leica microscope, versatile cell cultivation systems have been developed which allow both open and closed cultivation and open or closed perfusion.

**Perfusion Open and Closed Systems**

The POC Chamber System meets the demands of different microscopic methods in the observation and analysis of living cells. It is available with a round baseplate and an observation area of Ø 29-32 mm (POC-R2) and as miniature version (POC mini-2) for a smaller quantity of cell and tissue culture and an observation opening of Ø 17-22 mm.

- The POC-R2 Chamber System and POCmini-2 are systems for all microscope techniques.
- Suitable for short- and long-term cultivation.
- Open and closed cultivation as well as open and closed perfusion are possible.
- In the case of open cultivation, the chamber can be protected from evaporation by a FoilCover.
- In all POC-applications, the cells can be cultivated on glass.
- A pre-cultivation of cells on cover glasses in Petri dishes is possible. The assembling of the sterile POC Chamber occurs in a laminar air flow.
- All parts of the POC Chamber can be sterilized by autoclaving (121°C) or by dry heating (165-170°C).

For longer observations of cell and tissue cultures under the inverted microscope, the POC Chambers should be placed into the Heating Frame 2000 or the Heating Insert P 2000.

**I1 – POCmini-2 Set Cell Cultivation System**
Art.-Nr.: 11521739

**I2 – Open Perfusion Insert for POCmini**
Art.-Nr.: 11533087

**I3 – Closed Perfusion Insert for POCmini with 4 in/out canals**
Art.-Nr.: 11533088

**I4 – Closed Perfusion Insert for POCmini with 2 in/out**

The POCmini chamber system is used for all microscope techniques, as the cells are cultivated on 0.17 mm thickness (Ø 30 mm) coverslips. The inserts for open or closed cultivation or for perfusion are fixed onto a base plate. This system has been designed for short- and long-term cultivation especially for experiments with low quantities of cells or test substances. Open and closed cultivation as well as perfusion are possible. The open POCmini Chamber system allows e.g. rapid entrance to the cells and easy medium exchange. If used in the “open”-mode the chamber can be protected against evaporation of water by a special FoilCover (see H).

For cell observation the POCmini Chamber is inserted into a Heating Insert P, a Temperable Insert P, a Heatable Universal Mounting Frame (H-UMF), or positioned onto a Heating or Temperable Stage. By autoclaving (121°C) or dry heating (165-170°C) the whole POCmini system can be sterilized.

**For objectives:** Heating Inserts or Heatable Universal Mounting Frames (see C, D and I)

**Material:** Glass, silicone, stainless steel and Teflon® (all non toxic)

- Aluminum black anodized base plate with high thermal conductivity

- **Outer dimension:** Ø 58 m (6.5 mm in height)
- **Cultivation area:** Cover slip = 0.17 mm thickness
- **Observation Area:** Ø 17 – 22 mm
- **Volume:** Closed = 0.34 ml–0.8 ml; Open = up to 1.2 ml
- **Weight:** 0.1 kg
The POC-R2 has been designed for short- and long-term cultivation with a larger volume for cultivation media and easier access to the cells, which are cultivated on 0.17 mm thickness (Ø 42 mm) coverslips.

- **For objectives:** Heating Inserts or Heatable Universal Mounting Frames (see C, D and I)
- **Material:** Glass, silicone, stainless steel and Teflon® (all non toxic)
  Aluminum black anodized base plate with high thermal conductivity
- **Outer dimension:** Ø 58 mm (6.5 mm in height)
- **Cultivation area:** Cover Slip = 0.17 mm thickness
- **Observation Area:** Ø 29 – 32 mm
- **Volume:** Closed = 0.9 ml–1.8 ml; Open = up to 3.0 ml
- **Weight:** 0.1 kg

The cover is made of stainless steel with a glass insert. The observation area has a diameter of 25 mm. The height of the whole system (from the inside of the Petri dish to the top of the glass insert) is 17.5 mm. Sterilizable at 165°C in dry heat or at 121°C in the autoclave.

The cover is made of stainless steel with a glass insert. The observation area has a diameter of 46.5 mm. The height of the whole system (from the inside of the Petri dish to the top of the glass insert) is 17.5 mm. Sterilizable at 165°C in dry heat or at 121°C in the autoclave.
I8 – Heating Frame 2000

The Heating Frame 2000 warms up various cell cultivation vessels (e.g. Petri dishes “35” and “60” and POC/POCmini chamber systems). The solid frame is made of aluminium and provides for heat distribution and a high thermal conductivity. The frame has a circular observation opening (Ø 30 mm) and can be covered with a cover glass (Ø 35 mm).

The frame could be place on the fixed stage or will fit into Universal Mounting Frame MX or Universal Mounting Frame KM.

For a local CO2 and heating control in a closed environment the frame can be used in combination with the Incubator HF 2000 with Heatable Glass. Alternatively, the CO2-Cover with GlassInsert in combination with a large incubator is also suitable.

For the regulation of temperature, the TempController 2000 (1- or 2-channel) is required. An integrated temperature sensor transfers the value to the electrical device.

- For vessel size: Petri dishes (“35” and “60”), POC, POC-R2, POCmini-2
- Requirements: “F1 – TempController 2000-1” or “F2 – TempController 2000-2”
- Weight: 0.18 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 40°C
- Observation Opening: Ø 30 mm
- Compatible: “I9 – CO2-Cover with glass insert”
  “I10 – Incubator HF 2000”
  “B16 – Universal Holding frame MX”
  “C115 – Universal Holding frame KM Click-In”

I9 – CO2-Cover with glass insert

The CO2-Cover with Glass Insert is designed to fit onto the Heating Frame 2000 and permits local CO2-control in a completely closed environment – alone or in the large incubators. It is made of transparent acrylic glass with a glass insert to permit DIC.

With 2 in/outlets for the air/CO2-mixture and 2 lateral holes for the perfusion tubes the cover provides for a relative humidity of approx. 90%.

- For: “I8 – Heating Frame 2000”
- Applicable: for DIC, in large Incubator
- Provided humidity: 90%
- Weight: 0.15 kg

I10 – Incubator HF 2000

The Incubator HF 2000 is designed to fit onto the Heating Frame 2000 and permits a local CO2- and temperature control of Petri dishes and POC Chamber systems in a completely closed environment. The cover has a rectangular observation window with heatable glass. Due to the heatable glass and the warmed up air stream, no condensation of water occurs at the cover or at the lid of the cell cultivation vessel. The air flow can be fed into the cover by the CO2-Controller 2000.

- For: “I8 – Heating Frame 2000”
- Requirements: “F1 – TempController 2000-1” or “F2 – TempController 2000-2”
- Applicable: for DIC
- Provided humidity: 90%
- Weight: 0.23 kg
Temperature Control of Specimens close to the microscope

Heatable Worktables

During experiments it is often necessary to put specimens in the direct vicinity of the microscope. However, even in this case the temperature of these specimens has to be controlled. For example if cell cultivation vessels must be observed sequentially the non-used vessels can be kept at optimal conditions (37°C) in the meantime. For these requirements different Heatable Worktables are used: the Heatable Worktable S and the Heatable Worktable L. Whilst the Heatable Worktable S 2000 has dimensions 240 x 150 mm, the Heatable Worktable L 2000 with its dimensions of 400 x 250 mm offers three different inserts (1 x 57, 4 x 16, 9 x 12 mm Ø) the possibility to heat up small bottles, centrifuge tubes and reaction vessels. Sensitive cells can also be kept at ideal temperature conditions during handling under the laminar airflow.

A pre-heating stage is a recommendable completion of every incubation system. Temperature control is carried out with the ‘F1 – TempController 2000-1” or “F2 – TempController 2000-2”.

J1 – Heatable Worktable S 2000

- For vessel size: No limitation (within 240 x 150 mm)
- Requirements: ‘F1 – TempController 2000-1” or “F2 – TempController 2000-2”
- Weight: 1.2 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Type of vessels: All types

J2 – Heatable Worktable L 2000 with 3 inserts

- For vessel size: No limitation (within 400 x 250 mm)
- Requirements: ‘F1 – TempController 2000-1” or “F2 – TempController 2000-2”
- Weight: 4.0 kg
- Temperature stability: ± 0.1°C
- Control range: 3°C above ambient up to 60°C
- Type of vessels: All types

Cooling/Heating Worktables

The cooling/heating worktable is used for both cooling and heating of specimens, which must be kept at a specific constant temperature next to the microscope or under the laminar airflow. Keeps important reagents at cool temperature (e.g. 4°C) during experiments or liquid handling. Temperature control is carried out with circulating water or other liquids and is regulated at the circulator, cooling thermostat, e.g. “D5 – Cooling Thermostat”.

J3 – Temperable Worktable S

- For vessel size: No limitation (within 240 x 150 mm)
- Requirements: Thermostat or pump as liquid circulator
- Weight: 1.3 kg
- Control range: Liquid, temperature control by Thermostat
- Type of vessels: All types
- Accessories: Fabric-tube, clear (Ø 5 mm) 2 m, 2 pieces

Silicone-tube, clear (Ø 5 mm) 1 m, 2 pieces
Objective heating

- Especially with the use of oil immersion objectives, the direct contact between the cell cultivation vessel and the colder objective leads to a significant cooling in the area of the observed cells. The Objective Heater 2000 is designed for the stable heating of microscope objectives in order to improve temperature conditions in the observation area.
- The versions with an oil discharge channel have a circular duct around the objective that takes in abundant immersion oil and leads it through a flexible tube into a collecting vessel. The inserted O-ring provides for a better sealing.
- A slow and homogeneous heating of parts of the objective prevents adverse effects on the optical resolution.
- A built-in temperature sensor reliably monitors the objective temperature.
- For power supply and the control of temperature, the Objective Heater has to be connected to the TempController 2000-1 or 2000-2.
- D1 = diameter at the front area of the objective where to place the heater.
- D2 = maximum diameter of the objective (e.g. at the Corr-Ring or at threat area).

Heaters in several versions are available D1: 17.0 - 33.1 mm; D2: 27.5 - 38.0 mm. The diameter D1 of the relevant objectives are documented in the internet: http://www.leica-microsystems.com/products/objectives/
Following Objective Heaters are already provided with Leica order numbers.

K1 – Objective Heater 2000 Ø 33.1 mm  11533071
- For objectives: All objectives with a diameter D1: max 33,1 mm
- Material: black anodized aluminum
- Control range: 3°C above ambient up to 40°C
- Requirements: "F1 – TempController 2000-1" or "F2 – TempController 2000-2"
- Weight: 0.2 kg

K2 – Objective Heater 2000 Ø 29.0 mm  11533072
- For objectives: All objectives with a diameter D1: max 29,0 mm
- Material: black anodized aluminum
- Control range: 3°C above ambient up to 40°C
- Requirements: "F1 – TempController 2000-1" or "F2 – TempController 2000-2"
- Weight: 0.2 kg

K3 – Objective Heater 2000 Ø 30.5 mm  11533073
- For objectives: All objectives with a diameter D1: max 30,5 mm
- Material: black anodized aluminum
- Control range: 3°C above ambient up to 40°C
- Requirements: "F1 – TempController 2000-1" or "F2 – TempController 2000-2"
- Weight: 0.2 kg

K4 – Objective Heater 2000 Ø 19.0 mm  11533074
- For objectives: All objectives with a diameter D1: max 19,0 mm
- Material: black anodized aluminum
- Control range: 3°C above ambient up to 40°C
- Requirements: "F1 – TempController 2000-1" or "F2 – TempController 2000-2"
- Weight: 0.2 kg
OBJECTIVE COOLING

- Especially with the use of oil immersion objectives, the direct contact between the cell cultivation vessel and the colder objective leads to a significant cooling in the area of the observed cells. The Cooling/Heating Objective Ring is designed for the stable cooling or heating of microscope objectives in order to improve the temperature conditions in the observation area (better homogeneity).
- To supply the Cooling/Heating Objective Ring with cooling or heating liquids, it has to be connected to a circulator.
- D1 = diameter at the front area of the objective where to place the heater.
- D2 = maximum diameter of the objective (e.g. at the Corr-Ring or at threat area).

Cooling Rings in several versions are available on request. The diameter D1 of the relevant objectives are documented in the internet:
http://www.leica-microsystems.com/products/objectives/
Following Objective Cooling Rings are already provided with Leica order numbers.

**K11 – Cooling/Heating Objective Ring Ø 22.5 mm** 11533075
- For objectives: All objectives with a diameter D1: max 22,5 mm
- Material: black anodized aluminum
- Control range: liquid, temperature control by Thermostat
- Requirements: Thermostat or pump as liquid circulator
- Weight: 0.1 kg

**K12 – Cooling/Heating Objective Ring Ø 17.5 mm** 11533076
- For objectives: All objectives with a diameter D1: max 17,5 mm
- Material: black anodized aluminum
- Control range: liquid, temperature control by Thermostat
- Requirements: Thermostat or pump as liquid circulator
- Weight: 0.1 kg
**STAGE TOP INCUBATOR**

**O1 – Okolab BOLD LINE Temp Controller 11533432**

Compatible with digital gas controllers

Temperature Controller for Okolab electrically heated Stage Top Chambers. Touch Screen Interface with smart calibration routines. Feedback to the controller can be provided either by sample or by chamber temperature. Includes a tiny thermocouple used as Sample Temperature Probe and a Thermistor used to monitor Room Temperature.

Compatible with all Okolab electrically heated Stage Top Chambers and objective heaters. Integrated in LAS X.

Compatible with the following gas and humidity controllers:

- 11533435 – Digital CO₂ Controller with Active Humidity Controller (humidification power 95%)
- 11533443 – Digital CO₂ and O₂ Controller for Hypoxia applications with Active Humidity Controller (humidification power 95%)

Compatible with the following heated top stage chambers:

- 11533433 – Electrically heated stage top chamber for stages with 160x110 mm (k-frame) opening
- 11xxxxxx – Electrically heated chamber for Leica Super Z Galvo Stage
- 11533434 – Electrically heated MINI chamber

Compatible with heated objective collars 11533445, 11533446 and 11533447

- **T Accuracy:** ± 0.1°C in sample feedback mode and ± 0.3°C in chamber feed- back mode, if room temperature is stable within ±1°C
- **Resolution:** 0.1 °C
- **Temperature Range:** from 3°C above ambient temperature to 60°C
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 105 W max.
- **Dimensions:** Controller 200 x 200 x 54 mm; Touch screen interface 131 x 121 x 60 mm

**O2 – Okolab Digital Gas Mixer, stage top 11533435**

Compatible with 11533432

Includes a Digital CO₂ Controller, an Air Pump and an Active Humidity Module. The digital gas controller mixes CO₂ and Air to the desired concentration in the range 0-18%. Connects to Okolab temperature controller and is operated through its touch screen interface. The air pump connects to the digital gas controller and is a convenient solution for air inlet without the need of employing air tanks/compressed air lines. The Active Humidity Module is a humidity controller equipped with a humidity sensor, which regulates water temperature in order to achieve the desired relative humidity in the chamber. Dry gas is humidified by flowing over warm water. A heated tube delivers the humid gas to the stage top chamber preventing moisture condensation. Integrated in LAS X.

- **CO₂ accuracy:** ±0.1% - CO₂ range 0-18%
- **CO₂ sensor:** Non Dispersive InfraRed (NDIR) dual wave length detector - 10 years lifetime
- **Humidity range:** @ 25°C 85-95%; @ 37°C 51-95%; @ 50°C 26-95%
- **Humidity resolution:** 1% (with feedback from humidity sensor)
- **Flow rate range:** 0.1 up to 0.4 l/min, maximum outlet pressure: 300 mbar (4.3 psi)
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 100 W max.
Includes a Digital CO₂-O₂ Controller for hypoxia conditions, an Air Pump and an Active Humidity Module.

The digital gas controller mixes CO₂, Air and N₂ to the desired concentration in the CO₂ range 0-10% and O₂ range 1-18%. If operated without N₂, mixes CO₂ and Air to the desired CO₂ concentration in the range 0-10%. Connects to Okolab temperature controller and is operated through its touch interface. The air pump connects to the digital gas controller and is a convenient solution for air inlet without the need of employing air tanks/compressed air lines. The Active Humidity Module is a humidity controller equipped with a humidity sensor, which regulates water temperature in order to achieve the desired relative humidity in the chamber. Dry gas is humidified by flowing over warm water. A heated tube delivers the humid gas to the stage top chamber preventing moisture condensation. Integrated in LAS X.

- **CO₂ accuracy:** ±0.1% - CO₂ range 0-10%
- **O₂ accuracy:** ±0.1% - O₂ range 1-18%
- **CO₂ sensor:** Non Dispersive InfraRed (NDIR) dual wave length detector - 10 years lifetime
- **O₂ sensor:** Optical sensor – 5 years lifetime
- **Gas requirements:** 100% CO₂, 100% N₂, background AIR
- **Humidity range:** @ 25°C 85-95%; @ 37°C 51-95%; @ 50°C 26-95%
- **Humidity resolution:** 1% (with feedback from humidity sensor)
- **Flow rate range:** 0.1 up to 0.4 l/min, maximum outlet pressure: 300 mbar (4.3 psi)
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 100 W max.
- **Dimensions:** Controller 200 x 200 x 129 mm; Air Pump 107 x 180 x 99 mm; Humidifier: diameter 110 mm, height 216 mm
**04 – Okolab Uno Premixed Controller**  
11533436

All in one temperature and humidity controller with gas flow regulation for Okolab electrically heated Stage Top Chambers. Includes the temperature controller and a humidity controller accepting pre-mixed Air/CO₂ gas. Dry gas is humidified by flowing over warm water. A heated tube delivers the humid gas to the stage top chamber preventing moisture condensation. The humidity controller features a calibrated output orifice allows to set the desired gas flow rate by regulating the pressure at the inlet with a pressure gauge regulator (included). Feedback to the temperature controller can be provided either by sample or by chamber temperature. Includes a fine gauge thermocouple to be used as Sample Temperature Probe and a Touch Screen Interface with smart calibration routines. Compatible with all Okolab electrically heated Stage Top Chambers and objective heaters. Integrated in LAS X. Suggested when premixed Air/CO₂ gas is available.

**Compatible with the following heated top stage chambers:**

- 11533433 – Electrically heated stage top chamber for stages with 160x110 mm (k-frame) opening
- 11xxxxxx – Electrically heated chamber for Leica Super Z Galvo Stage
- 11533434 – Electrically heated MINI chamber

Compatible with heated objective collars 11533445, 11533446 and 11533447

- **T accuracy:** ± 0.1°C in sample feedback mode and ± 0.3°C in chamber feedback mode, if room temperature is stable within ± 1°C
- **Control Range:** 3°C above ambient temperature up to 60°C
- **Humidification power:** 85% relative humidity
- **Flow rate range:** 0.1 up to 0.4 l/min
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 100 W max.
- **Dimensions Controller:** 131 x 121 x 60 mm; **Humidifier:** diameter 72 mm, height 190 mm
**05 – Okolab Uno CO₂ Controller 11533437**

All in one manual temperature and humidity controller with CO₂/AIR mixer compatible with any Okolab electrically heated Stage Top Chamber. Includes the temperature controller, the humidity controller, a manual gas mixer accepting 100% CO₂ and air, and an air pump. The manual mixer mixes 100% CO₂ and background air to the desired concentration in the range 0-15% with an accuracy of ±1%. Dry gas is humidified by flowing over warm water. A heated tube delivers the humid gas to the stage top chamber preventing moisture condensation. Flow rate is regulated through the manual gas mixer. Feedback to the temperature controller can be provided either by sample or by chamber temperature. Includes a fine gauge thermocouple to be used as Sample Temperature Probe and a Touch Screen Interface with smart calibration routines. Compatible with all Okolab electrically heated Stage Top Chambers and objective heaters. Integrated in LAS X.

Suggested when feedback on CO₂ concentration and humidity is not required.

**Compatible with the following heated top stage chambers:**

- 11533433 – Electrically heated stage top chamber for stages with 160x110 mm (k-frame) opening
- 11xxxxxx – Electrically heated chamber for Leica Super Z Galvo Stage
- 11533434 – Electrically heated MINI chamber

Compatible with heated objective collars 11533445, 11533446 and 11533447

- **T accuracy:** ± 0.1°C in sample feedback mode and ± 0.3°C in chamber feedback mode, if room temperature is stable within ± 1°C
- **Control Range:** 3°C above ambient temperature up to 60°C
- **Humidification power:** 85% relative humidity
- **CO₂ Supply:** 100% CO₂ at 1-2 bar (15-29 psi)
- **AIR Supply:** Air Pump (included), maximum outlet pressure: 300 mbar (4.3 psi)
- **CO₂ Accuracy:** ±1% - CO₂ range: 0 - 15 Vol-%
- **Flow rate range:** 0.6 - 0.8 l/min @5% CO₂
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 110 W max.
- **Dimensions Controller:** 131 x 121 x 60 mm; Gas Mixer: 27 x 234 x 178 mm; Air Pump: 107 x 202 x 101 mm; Humidifier: diameter 72 mm, height 190 mm
06 – Okolab Obj. Collar 19-24  
Art.-No.: 11533445

To be used when working with immersion or dipping objectives.
Automatic calibration routine to precisely compensate heat sink due to contact with immersion and dipping objectives
Fits objectives with diameter from 19 to 24 mm
Connects to 11533432, 11533436 and 11533437

07 – Okolab Obj. Collar 25-32  
Art.-No.: 11533446

To be used when working with immersion or dipping objectives.
Automatic calibration routine to precisely compensate heat sink due to contact with immersion and dipping objectives
Fits objectives with diameter from 25 to 32 mm
Connects to 11533432, 11533436 and 11533437

08 – Okolab Obj. Collar 33-42  
Art.-No.: 11533447

To be used when working with immersion or dipping objectives.
Automatic calibration routine to precisely compensate heat sink due to contact with immersion and dipping objectives
Fits objectives with diameter from 33 to 42 mm
Connects to 11533432, 11533436 and 11533437
09 – Okolab stage top incubator H301 11533433
for stages with 160x110 mm (k-frame) opening
Heated Glass Lid to prevent condensation. Sliding lid for easy pipetting included. Optional lids for Koehler illumination or injection. Removable riser to fit standard multiwell plates or to perform perfusion (#12 in riser for 2.5 mm O.D. tubing)
Magnets allow easy interchange of sample holders to host Petri dishes, slides and multiwell Plates.
Minimum condenser working distance: from 22.7 mm (with Koehler lid without riser) to 33.6 mm (with sliding lid and riser)
Connects to 11533432, 11533436 and 11533437

010 – KOEHLER Lid 11533449
for stages with 160x110 mm (k-frame) opening
KOEHLER Lid - required for Koehler illumination
Temperature controlled conductive glass lid that reduces the height of the chamber and allows to work under Koehler illumination. Minimum condenser working distance (without chamber riser): 22 mm
Compatible with 11533433

011 – 6-well plates holder 11533295
Fits in 11533433

012 – 12-well plates holder 11533381
Fits in 11533433

013 – 24-well plates holder 11533382
Fits in 11533433

013a – 96-well plate holder 11533532
Holder to accommodate 96 well plates in chamber H301-K-FRAME, to be selected when working with LD objectives
Fits in 11533433
O14 – 35 mm Petri dish holder
Art.-No.: 11533424
Fits in 11533433 and 11533431

O15 – 1”x3” chamber slide holder
Art.-No.: 11533422
Fits in 11533433 and 11533431

O16 – 50/60 mm Petri dish holder
Art.-No.: 11533423
Fits in 11533433 and 11533431

O17 – 2xLABTEK 1”x2” chambered cover glass holder
Art.-No.: 11533421
Fits in 11533433 and 11533431

O18 – 2xLABTEK-II
Art.-No.: 11533420
Fits in 11533433 and 11533431

O19 – 1x slide, 2x 35mm
Art.-No.: 11533419
Fits in 11533433 and 11533431
O20 – Okolab stage top incubator
for Leica Super Z Galvo Stage
Heated Glass Lid to prevent condensation.
Magnets allow easy interchange of sample holders to host Petri dishes, slides
Minimum condenser working distance: 20 mm
Total weight: 130 g
# 12 perfusion holes for 2.5 mm O.D. perfusion tubing
Connects to 11533432, 11533436 and 11533437

O21 – 35 mm Petri dish holder
Fits in 11533518

O22 – 1”x3” chamber slide holder
Fits in 11533518

O23 – Lab-Tek 1”x2” chambered cover glass holder
Fits in 11533518

O24 – Lab-Tek 1”x2” II chambered cover glass holder
Fits in 11533518

O25 – 50/60 mm Petri dish holder
Fits in 11533518

O20
Okolab stage top incubator for Leica Super Z Galvo Stage
Art.-No.: 11533518

O21
35 mm Petri dish holder
Art.-No.: 11535519

O22
1”x3” chamber slide holder
Art.-No.: 11535520

O23
Lab-Tek 1”x2” chambered cover glass holder
Art.-No.: 11535521

O24
Lab-Tek 1”x2” II chambered cover glass holder
Art.-No.: 11535522

O25
50/60 mm Petri dish holder
Art.-No.: 11535523
026 – Okolab stage top incubator-MINI
Art.-No.: 11533434

Hosts 1 Petri Dish or one Slide. Fits in any multiwell plate holder. Heated Glass Lid to prevent condensation. Magnets allow easy interchange of sample holders to host Petri dishes, slides and multiwell Plates. #12 perfusion holes for 2.5 mm O.D. perfusion tubing Connects to 11533432, 11533436 and 11533437

027 – 35 mm Petri dish holder
Art.-No.: 11533418

Fits in 11533434 and 11533428

028 – 1”x3” chamber slide holders
Art.-No.: 11533417

Fits in 11533434 and 11533428

029 – Lab-Tek 1”x2” chambered cover glass holder
Art.-No.: 11533427

Fits in 11533434 and 11533428

030 – Lab-Tek 1”x2” II chambered cover glass holder
Art.-No.: 11533426

Fits in 11533434 and 11533428

031a – 50/60 mm Petri dish holder
Art.-No.: 11533416

Fits in 11533434 and 11533428
Okolab Cryo Temp Controller 11533470
Okolab package consisting of Bold Line Heating/Cooling unit (H101-CRYO) and Oko-Touch Display. Heating / Cooling unit - Bold Line. It comprises the Temperature Controller and the Cryostatic Water Bath. Temperature is controlled in the range +5°C to 60°C by circulating water in the water jacket chamber. It allows to work in chamber or in specimen feedback mode and to continuously monitor room temperature. Specimen Temperature accuracy: ± 0.1°C in specimen feedback mode, ± 0.3°C in chamber feedback mode, if room temperature remains within ± 1°C. Automatic self-calibration routines. It is operated by the user friendly touch screen OKO-TOUCH. Compatible with any Okolab Water Jacket Chamber, with objective heater / cooler OKO-MOC-(UP) and with Smart Box. Touch Screen Display. User friendly device to operate the Bold Line Controllers.
- T accuracy: ± 0.1°C
- Control Range: from 10°C - 15°C below room temperature to 60°C
- Voltage/Power: 110-220 V AC, 50-60 Hz

Okolab Water Jacket Lens Collar 11533471
Okolab Objective Heating/Cooling Collar (OKO-MOC), for use with water jacket incubation chambers. Water-jacket Lens collar. It uses the water flow coming from the incubating chamber to keep the objective at the same temperature as the chamber.

Okolab Dig. Gas mixer, Cryo 11533472
Okolab package consisting of CO₂ Controller - Bold Line (CO₂ UNIT BL), Air pump - Bold Line (OKO-AIR-PUMP-BL), Humidity Module (H101-HM). CO₂ Controller - Bold Line. CO₂ is digitally regulated in the range 0-18% and actively controlled by a drift-free Non Dispersive Infrared (NDIR) dual wave length CO₂ sensor. Expected sensor lifetime: 10 years. Accuracy: ± 0.1%. Output flow rate range: 0.1-0.8 l/min (0.1-0.4 l/min in combination with OKO-AIR-PUMP-BL). Compatible with Smart Box for data-logging, remote operation and remote support. It is operated by the user friendly touch screen OKO-TOUCH (not included). Air pump - Bold Line. Plug and play solution for Air inlet. Convenient alternative to 100% Air tanks/compressed Air lines. It connects to the Air input of Okolab Bold Line gas controllers and it is operated by OKO-TOUCH. Maximum outlet pressure 300 mbar Humidity module. It comprises a gas preheating system and a bubbling column.

Okolab stage top, Water Jacket 11533473
Water Jacket Chamber for stages with k-frame insert (160x110mm) - magnetic. (H101-K-FRAME) Minimum condenser working distance: 27mm. The chamber is uniformly heated by means of water circulation in water tight channels present in the main body and in the lid. Magnets allow easy interchange of specimen holders. The chamber features a removable riser required to fit standard multiwell plates or to perform perfusion (12 channels for 2.5mm O.D. tubings available in chamber riser). Requires at least one specimen holder.
032f – Okolab insert 2x35mm, water jacket
Art.-No.: 11533474
Fits in 11533473

032g – Okolab 1x slide holder, water jacket
Art.-No.: 11533475
Fits in 11533473

032h – Okolab 6well holder, water jacket
Art.-No.: 11533476
Fits in 11533473

032i – Okolab 12well holder, water jacket
Art.-No.: 11533477
Fits in 11533473

032j – Okolab 24well holder, water jacket
Art.-No.: 11533478
Fits in 11533473

032k – Okolab 96well holder, water jacket
Art.-No.: 11533479
Fits in 11533473

032l – Okolab Sensor Lid, 35mm
Art.-No.: 11533480
Fits in 11533473

032m – Okolab 4x35-M magnetic
Art.-No.: 11533524
H101 4x 35 mm Petri-dish holder - magnetic
Fits in 11533473
CAGE INCUBATOR

O32a – OKOLAB CAGE INCUB., BLACK 11533499
Black enclosure for DMi8. For light sensitive applications. Consists of black lexan microscope enclosure (H201-ENCLOSURE-DMi8- BLACK), Temperature Unit with temperature controller and air heater (H201-T-UNIT-BL), and touch screen display (OKO-TOUCH). It creates dark large volume around the microscope in which temperature is controlled by recirculating warm air at controlled temperature and flow rate. Feedback to the temperature unit can be provided either by specimen temperature or by the temperature of the air inside the enclosure. Double air inlets and outlets and the constant flow rate recirculation of air ensures stable operation of the system and excellent temperature uniformity throughout the enclosure. Turn to open hinges allow an easy and fast removal of the front and top panels. Sliding doors allow easy access to the microscope and to the specimen. Gaskets and sealed openings allow to introduce tubes and cables inside the enclosure. A pedal activated LED light positioned inside the enclosure allows to view the sample through a transparent window. Feedback to the controller can be provided either by sample temperature or by air temperature inside the enclosure. Integrated in LAS X.

Compatible with the following gas chambers:
O38 – 11533431 – Gas chamber for stages with 160x110 mm (k-frame) opening
O47 – 11xxxxxx – Gas chamber for Leica Super Z Galvo Stage
O50 – 11533331 – Gas MINI chamber
• T accuracy: ± 0.1°C
• Control Range: 3°C above ambient temperature up to 45°C
• Voltage/Power: 110-220 V AC, 50-60 Hz
• Power consumption: 900 W max.
• Dimensions: Controller 200 x 200 x 54 mm; Fan Heater: 294 x 233 x 236; Touch screen interface 131 x 121 x 60 mm.

O32b – OKOLAB CAGE INCUB., LASER SAFE BLACK 11533500
Like O32a but with laser safety for DMi8.

O32c – OKOLAB CAGE INCUB. TRANSPARENT 11533501
Like O32a but transparent for DMi8.
O32d – Okolab Cage Incubator 11533387
Large Volume Incubator. Includes transparent enclosure, temperature controller, fan heater and touch screen interface. Fits any configuration. Microscope configuration must be specified in order.
Temperature is controlled by recirculating warm air at controlled temperature and flow rate. The fan heater is equipped with a temperature and flow rate sensor in order to obtain a stable energy input inside the enclosure. Double air inlets and outlets ensure stable operation of the system and excellent temperature uniformity throughout the enclosure.
Turn to open hinges allow easy and fast removal of both the front and the top panel. Sliding doors allow easy access to the microscope and to the sample. Dimmable LED light operated via foot pedal. Feedback to the controller can be provided either by sample temperature or by air temperature inside the enclosure. Integrated in LAS X.

Compatible with the following gas chambers:
O38 – 11533431 – Gas chamber for stages with 160x110 mm (k-frame) opening
O47 – 11xxxxxx – Gas chamber for Leica Super Z Galvo Stage
O50 – 11533331 – Gas MINI chamber
• T accuracy: ± 0.1°C
• Control Range: 3°C above ambient temperature up to 45°C
• Voltage/Power: 110-220 V AC, 50-60 Hz
• Power consumption: 900 W max.
• Dimensions: Controller 200 x 200 x 54 mm; Fan Heater: 294 x 233 x 236; Touch screen interface 131 x 121 x 60 mm.

O33 – BLACK PANELS 11533385
Obscuring panels to make the enclosure dark. Compatible with 11533387
Black panels attach to the enclosure with butterfly screws creating a dark environment for light sensitive applications.

O34 – Okolab 5% Pre-mixed Gas controller 11533429
For premixed gas. Includes a floating ball gas Flow Regulator and a Vibration Free Humidifier. The Vibration Free Humidifying Module employs a water semi-permeable membrane immersed in water to humidify gas. Gas reaches the relative humidity of 85% ca. at 37°C. Flow rate range 0.04-0.4 l/min.

O35 – Okolab Manual Gas Mixer, CO₂ + air 11533430
Compatible with 11533387, 11533499, 11533500, 11533501
Includes a manual CO₂ – Air Mixer, an Air Pump and a Vibration Free Humidifier. The manual gas mixer mixes CO₂ and air to the desired concentration in the CO₂ range 1-15%. Air and CO₂ flows are regulated by two floating ball flow meters. The air pump is a convenient solution for air inlet without the need of employing air tanks/compressed air lines. The Vibration Free Humidifying Module employs a water semi-permeable membrane immersed in water to humidify gas. Gas reaches the relative humidity of 85% ca. at 37°C. Humidification power: 85%. Flow rate range 0.6-8 l/min @5% CO₂
• Voltage/Power: 110-220 V AC, 50-60 Hz
• Power consumption: 10 W max.
• Dimensions: Controller: Gas Mixer: 27 x 234 x 178 mm; Air Pump: 107 x 202 x 101 mm
**O36 – Okolab Digital Gas Mixer, CO$_2$ + air**  11533389

**Compatible with 11533387, 11533499, 11533500, 11533501**

Includes a Digital CO$_2$ Controller, an Air Pump and a Vibration Free Humidity Module.

The digital gas controller mixes CO$_2$ and Air to the desired concentration in the range 0-18%. Connects to Okolab temperature controller and is operated through its touch screen interface. The air pump connects to the digital gas controller and is a convenient solution for air inlet without the need of employing air tanks/compressed air lines. The Vibration Free Humidity Module employs a water semi-permeable membrane immersed in water to humidify gas. Integrated in LAS X.

- **CO$_2$ accuracy:** ±0.1% - CO$_2$ range 0-18%
- **CO$_2$ sensor:** Non Dispersive InfraRed (NDIR) dual wave length detector - 10 years lifetime
- **Humidification power:** 85%
- **Flow rate range:** 0.1 up to 0.4 l/min, maximum outlet pressure: 300 mbar (4.3 psi)
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 50 W max.
- **Dimensions:** Controller 200 x 200 x 129 mm; Air Pump 107 x 180 x 99 mm

**O37 – Okolab Digital Gas Mixer, CO$_2$ + O$_2$**  11533444

**Compatible with 11533387, 11533499, 11533500, 11533501**

Includes a Digital CO$_2$-O$_2$ Controller for hypoxia conditions, an Air Pump and a Vibration Free Humidity Module.

The digital gas controller mixes CO$_2$, Air and N$_2$ to the desired concentration in the CO$_2$ range 0-10% and O$_2$ range 1-18%. If operated without N$_2$, mixes CO$_2$ and Air to the desired CO$_2$ concentration in the range 0-10%. Connects to Okolab temperature controller and is operated through its touch interface. The air pump connects to the digital gas controller and is a convenient solution for air inlet without the need of employing air tanks/compressed air lines. The Vibration Free Humidity Module employs a water semi-permeable membrane immersed in water to humidify gas. Integrated in LAS X.

- **CO$_2$ accuracy:** ±0.1% - CO$_2$ range 0-10%
- **O$_2$ accuracy:** ±0.1% - O$_2$ range 1-18%
- **CO$_2$ sensor:** Non Dispersive InfraRed (NDIR) dual wave length detector - 10 years lifetime
- **O$_2$ sensor:** Optical sensor – 5 years lifetime
- **Gas requirements:** 100% CO$_2$, 100% N$_2$, background AIR
- **Humidification power:** 85%
- **Flow rate range:** 0.1 up to 0.4 l/min, maximum outlet pressure: 300 mbar (4.3 psi)
- **Voltage/Power:** 110-220 V AC, 50-60 Hz
- **Power consumption:** 50 W max.
- **Dimensions:** Controller 200 x 200 x 129 mm; Air Pump 107 x 180 x 99 mm
O38 – Okolab Gas Chamb.f.K Frame H201
for stages with 160x110 mm (k-frame) opening
compatible with 115533387
Sliding lid for easy pipetting included. Optional lids for Koehler illumination or injection.
Removable riser to fit standard multiwell plates or to perform perfusion (#12 in riser for 2.5 mm O.D. tubing)
Magnets allow easy interchange of sample holders to host Petri dishes, slides and multiwell Plates.
Minimum condenser working distance: from 22.7 mm (with Koehler lid without riser) to 33.6 mm (with sliding lid and riser)

O39 – KOEHLER Lid
required for Koehler illumination
compatible with 11533431
Glass lid that reduces the height of the chamber and allows to work under Koehler illumination. Minimum condenser working distance (without chamber riser): 22 mm

O40 – Multiwell plates holder

O41 – 35 mm Petri dish holder
Fits in 11533433 and 11533431

O42 – 1”x3” chamber slide holder
Fits in 11533433 and 11533431

O43 – 50/60 mm Petri dish holder
Fits in 11533433 and 11533431
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<th>Item</th>
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<td>2xLABTEK 1”x2” chambered cover glass holder</td>
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<td>046</td>
<td>1x slide, 2x 35mm K-FRAME</td>
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<td>Fits in 11533433 and 11533431</td>
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<td>047</td>
<td>Gas chamber for Leica Super Z Galvo Stage</td>
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<td>Magnets allow easy interchange of sample holders to host Petri, slides and MW plates</td>
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<td>Minimum condenser working distance: 20 mm</td>
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<td>Total weight: 80g</td>
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<td></td>
<td># 12 perfusion holes for 2.5 mm O.D. perfusion tubing</td>
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<td></td>
<td>Compatible with 115533387</td>
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<td>048</td>
<td>Multiwell plates holder</td>
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<td>049</td>
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<td>4x 35 mm Petri-dish holder</td>
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<td>051</td>
<td>Mini Gas chamber H201-MINI</td>
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<tr>
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<tr>
<td>056</td>
<td>50/60 mm Petri-dish holder</td>
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</tbody>
</table>

**050 – 4x 35 mm Petri-dish holder**

Fits in 11533329

**051 – Mini Gas chamber H201-MINI**

Hosts 1 Petri Dish or one Slide. Fits in any multiwell plate holder. Magnets allow easy interchange of sample holders to host Petri dishes and slides. # 12 perfusion holes for 2.5 mm O.D. perfusion tubing Compatible with 115533387

**052 – 35 mm Petri-dish holder**

Fits in 11533434 and 11533428

**053 – 1”x3” chamber slide holders**

Fits in 11533434 and 11533428

**054 – Lab-Tek II 1”x2” chambered cover glass holder**

Fits in 11533434 and 11533428

**055 – Lab-Tek 1”x2” chambered cover glass holder**

Fits in 11533434 and 11533428

**056 – 50/60 mm Petri-dish holder**

Fits in 11533434 and 11533428
The system offers precision temperature (30-40°C), high-humidity (95% humidity), CO₂ control for short / long term cell culture with the following features:

- Continuous current regulation to prevent focus drift by thermal regulation at minimum and great to work with High-magnification/super resolution application, highly sensitive camera and HyDdetector.
- Clear Glass Heater on Lid to prevent condensation.

FOR REGULAR 3-PLATE STAGE AND XY MOTORIZED STAGES

T1 – WSKM  incl. in T2-T4
Chamber unit

T2 – INUG2-WSKM-Set  11533173
- WSKM Chamber Unit (T1)
- Temperature Controller with built-in digital gas mixer for 100% CO₂ gas use. Supply fixed 5% CO₂/95% Air. Dish Attachment UNIV2-D35(TD1)/UNIV2-CSG(TD4) and Sensor Lid D35-200F(TS1)/CSG-200F(TS3)/W-200F as standard.

T3 – INUF1-WSKM-Set  11533172
- WSKM Chamber Unit (T1)
- Temperature Controller with an analog flowmeter for premixed gas use. Dish Attachment UNIV2-D35(TD1)/UNIV2-CSG(TD4) and Sensor Lid D35-200F(TS1)/CSG-200F(TS3)/W-200F as standard.

T4 – INU-WSKM-Set  11533171
- WSKM Chamber Unit (T1)
- Temperature Controller only. No gas function. Dish Attachment UNIV2-D35(TD1)/UNIV2-CSG(TD4) and Sensor Lid D35-200F(TS1)/CSG-200F(TS3)/W-200F as standard.

Dish Attachment for WSKM (T1)

TD1 – UNIV2-D35 included in T2-T4  11532895
Dish Attachment for 35 mm dish x 1pc

TD2 – UNIV2-D35-2  11532896
Dish Attachment for 35 mm dish x 2pc

TD3 – UNIV2-D56  11532897
Dish Attachment for 50/60 mm dish

TD4 – UNIV2-CSG included in T2-T4  11532898
Dish Attachment for chambered coverglass, chamber slide and slide glass

Sensor Lid
Sensor Lid for 35mm (TS1) is included in the system as standard.

TS1 – D35-200F included in T2-T4  11532899
Sensor Lid for 35mm dish
TS2 – D56-200F
Sensor Lid for 50mm dish

TS3 – CS-200F included in T2-T4
Sensor Lid for chamber slide and chambered coverglass

**FOR Z-GALVO STAGE**

**T11 – GSI2**
Incubator for Super Z Galvostage

**T12 – INUG2-GSI2-Set**
- GSI2 Chamber Unit(T11)
- Temperature Controller with built-in digital gas mixer for 100%CO₂ gas use. Supply fixed 5%CO₂+95% Air
- Dish Attachment GSI2-D35(TD11)/GSI2-CGC(TD13)/GSI2-CS(TD14) and Sensor Lid D35-200F(TS1)/CSG-200F(TS3) as standard

**T13 – INUF1-GSI2-Set**
- GSI2 Chamber Unit(T11)
- Temperature Controller with analog flowmeter for premixed gas use.
- Dish Attachment GSI2-D35(TD11)/GSI2-CGC(TD13)/GSI2-CS(TD14) and Sensor Lid D35-200F(TS1)/CSG-200F(TS3) as standard

**T14 – INU-GSI2-Set**
- GSI2 Chamber Unit(T11)
- Temperature Controller only. No gas function.
- Dish Attachment GSI2-D35(TD11)/GSI2-CGC(TD13)/GSI2-CS(TD14) and Sensor Lid D35-200F(TS1)/CSG-200F(TS3) as standard

**Dish Attachment for for GSI2 (T11)**

**TD11 – GSI2-D35 included in T12-T14**
Dish Attachment for 35 mm dish x 1pc

**TD12 – GSI2-D50**
Dish Attachment for 50 mm dish

**TD13 – GSI2-CGC included in T12-T14**
Dish Attachment for chambered coverglass

**TD14 GSI2-CS included in T12-T14**
Dish Attachment for chamber slide and slide glass

**Sensor Lid**
Sensor Lid for 35 mm (TS1) is included in the system as standard.

**TS1 – D35-200F included in T12-T14**
Sensor Lid for 35 mm dish

**TS2 – D56-200F**
Sensor Lid for 50 mm dish

**TS14 – GSG-200F included in T12-T14**
Sensor Lid for chamber slide and chambered coverglass
TIME LAPSE ENTRY KIT

T21 – WELSX included in T22 and T23
Incubator for well plate holder

T22 – STRG-WELSX-SET 11533397
• WELSX Chamber Unit(T21)
• Temperature Controller with built-in digital gas mixer for 100%CO₂ gas use. Supply 5%CO₂ + 95% Air
• Dish Attachment & Fixing Lid for 35/50/60 mm dish, chambered coverglass, chamber slide and slide glass

T23 – STRF-WELSX-SET 11533396
• WELSX Chamber Unit(T21)
• Temperature Controller with an analog flowmeter for premixed gas use
• Dish Attachment & Fixing Lid for 35/50/60 mm dish, chambered coverglass, chamber slide and slide glass

T24 – WELSX-K 11533395
Stage Adapter for WELSX to install on XY motorized stage with 110x160 mm aperture
NOTICE: