

# Growth chambers

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Homogeneous light in combination with a constant temperature and humidity is necessary to achieve ideal growth in plants or other organisms. A BINDER humidity chamber offers all this. This is how KBW Series growth chambers create ideal conditions for the culture using light and temperature. The KBF series also offers a system for humidity regulation. The APT.line™ preheating chamber from BINDER, in connection with fast-reacting humidity regulation, highly effective cooling and uniform light distribution, ensures natural growth conditions.

# PRODUCT SELECTION GROWTH CHAMBERS

Features	KBW › Page 60	KBWF › Page 63
<b>Model</b>		
Model 240	•	•
Model 400	•	–
Model 720	•	•
<b>General data</b>		
Temperature range without illumination cassettes [°C]		0...70
Temperature range with 100% illumination [°C]	5...60	10...60
Humidity range [% RH]	–	10...80
Ethernet interface	–	•
RS 422 interface	•	–
Forced convection	•	•
<b>Controller and timer functions</b>		
Controller display	LED/LCD	LCD color display
Ramp function	•	•
Time delayed OFF	•	•
Time delayed ON	•	•
Temperature dependent delayed OFF	•	•
Programming option	•	•
Weekly program function	•	•
Adjustable fan speed	•	•
Real-time clock	•	•
Class 3.1 independent temperature safety device	•	•
Temperature alarm, acoustic	•	•
Temperature alarm, visual	•	•

•Standard equipment

## ADVANTAGES AT A GLANCE



### **HOMOGENEOUS TEMPERATURE DISTRIBUTION**

Series KBW, KBWF

BINDER APT.line™ preheating chamber technology ensures long-term operational stability even under full load.



### **FAST AND PRECISE HUMIDIFICATION**

Series KBWF

The patented long-life steam humidification system and the capacitive humidity sensor ensure on target humidity values.

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### **NATURE-EMULATING GROWTH CONDITIONS**

Series KBW, KBWF

Using illumination cassettes provides flexible placement options which ensures homogeneous light distribution over the entire usable area. The light qualities are individually selectable.

## Series KBW | with light

The BINDER climate chamber with illumination of the KBW series achieves homogeneous light distribution with its natural illumination. That allows this growth chamber to create constant lighting and temperature conditions.



KBW 400 model

### MAIN FEATURES

- Temperature range: 0 °C to 70 °C
- Temperature range with light: 5 °C to 60 °C
- Positionable illumination cassettes, each with 5 fluorescent tubes
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Controller with time-segment and real-time programming
- Stainless steel racks
- Access port with silicone plug, 30 mm, left
- Class 3.1 independent temperature safety device (DIN 12880) with visual and audible temperature alarm
- Computer interface: RS 422

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
KBW 240	247	› <a href="https://go2binder.com/en-KBW240">go2binder.com/en-KBW240</a>
KBW 400	400	› <a href="https://go2binder.com/en-KBW400">go2binder.com/en-KBW400</a>
KBW 720	698	› <a href="https://go2binder.com/en-KBW720">go2binder.com/en-KBW720</a>



### TIPS & TRICKS

Benefit from our many years of experience, as demonstrated in our technical papers:

- Tips & Tricks: › [go2binder.com/en-tips-tricks](https://go2binder.com/en-tips-tricks)  
 Case Studies: › [go2binder.com/en-case-studies](https://go2binder.com/en-case-studies)

## TECHNICAL DATA

Description	KBW 240	KBW 400	KBW 720
<b>Measures - Outer dimensions</b>			
Width net [mm]	925	925	1250
Height net [mm]	1465	1950	1925
Depth net [mm]	800	805	890
<b>Measures - Internal Dimensions</b>			
Width [mm]	650	650	970
Height [mm]	785	1270	1250
Depth [mm]	485	485	576
<b>Measures</b>			
Interior volume [L]	247	400	698
Net weight of the unit (empty) [kg]	202	267	377
permitted load [kg]	100	120	150
Load per rack [kg]	30	30	45
<b>Performance Data Temperature</b>			
Temperature range with 100% illumination [°C]	5...60	5...60	5...60
Temperature range without illumination cassettes [°C]	0...70	0...70	0...70
Temperature variation with 100% illumination [± K]	0.5	1.5	1.0
Temperature variation without illumination cassettes [± K]	0.5	0.5	0.5
Temperature fluctuation with 100% illumination [± K]	0.1	0.1	0.1
Temperature fluctuation without illumination cassettes [± K]	0.1	0.1	0.1
<b>Lightdata per Illumination Cassettes</b>			
Daylight tubes [W/m²]	24	24	38
Daylight tubes [lx]	9000	9000	13000
Fluora® growth lamps [W/m²]	23	23	36
Fluora® growth lamps [lx]	7500	7500	10500
Arabidopsis lamps [W/m²]	32	32	43
Arabidopsis lamps [lx]	11000	11000	14000
<b>Electrical data</b>			
Nominal power (Version 230 V) [kW]	1.4	1.6	2.7
<b>Fixtures</b>			
Number of shelves (std./max.)	2/7	3/12	3/12
Number of illumination cassettes (std./max.)	2/2	3/3	3/3

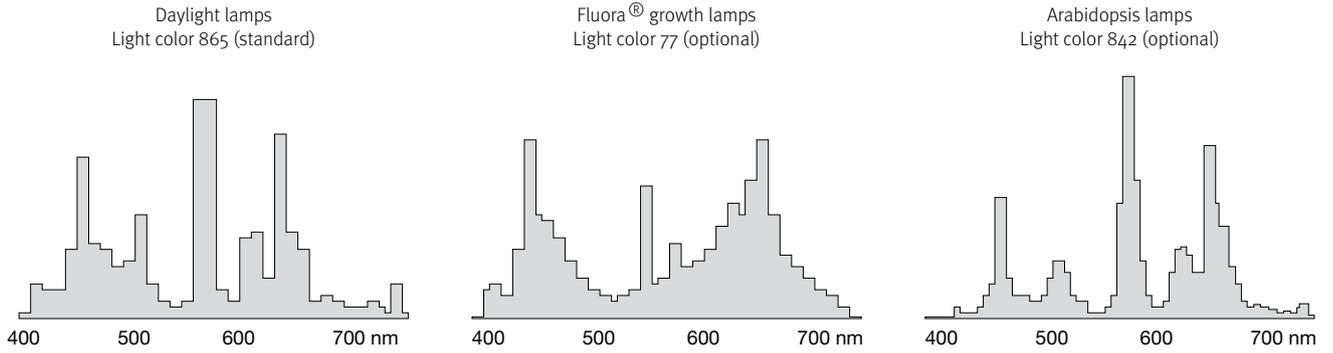
## ORDERING INFORMATION [Art. No.]

**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

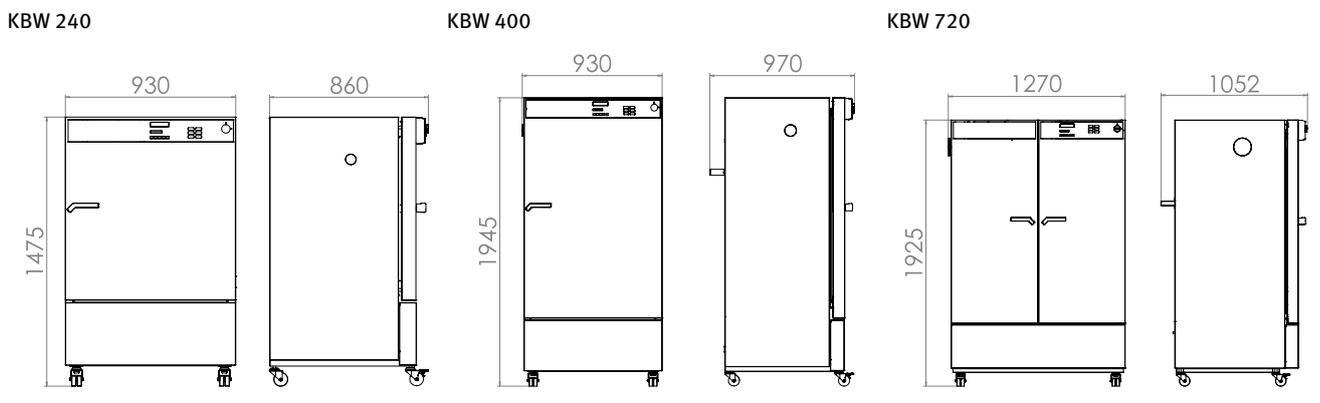
Voltage	Option model	KBW 240	KBW 400	KBW 720
200...240 V 1~ 50 Hz	Standard	9020-0256	9020-0180	9020-0172

► You will find a selection of options, accessories and services suitable for each product on page 66

### LIGHT SPECTRA



### DIMENSIONS INCL. FITTINGS AND CONNECTIONS [MM]



## Series KBWF | with light and humidity

The BINDER climate chamber with illumination of the KBW series achieves homogeneous light distribution with its natural illumination. That allows this climate chamber to create constant lighting and temperature conditions.



KBWF 240 model

### MAIN FEATURES

- Temperature range: 0 °C to 70 °C
- Temperature range with light: 10 °C to 60 °C
- Humidity range: 10 % to 80 % RH
- positionable illumination cassettes, each with 5 fluorescent tubes
- APT.line™ preheating chamber technology
- Adjustable fan speed
- Humidity regulation with capacitive humidity sensor and vapor humidification
- Controller with time-segment programming
- Display via color LCD monitor
- Tightly-sealed inner door made of tempered safety glass

### AVAILABLE SIZES

Model	Interior volume [L]	Online data sheets
KBWF 240	247	› <a href="https://go2binder.com/en-KBWF240">go2binder.com/en-KBWF240</a>
KBWF 720	700	› <a href="https://go2binder.com/en-KBWF720">go2binder.com/en-KBWF720</a>



Find all details online  
[go2binder.com/en-KBWF](https://go2binder.com/en-KBWF)

## TECHNICAL DATA

Description	KBWF 240	KBWF 720
<b>Measures - Outer dimensions</b>		
Width net [mm]	925	1250
Height net [mm]	1465	1925
Depth net [mm]	800	890
<b>Measures - Internal Dimensions</b>		
Width [mm]	650	973
Height [mm]	785	1250
Depth [mm]	485	576
<b>Measures</b>		
Interior volume [L]	247	700
Net weight of the unit (empty) [kg]	214	374
permitted load [kg]	100	150
Load per rack [kg]	30	45
<b>Performance Data Temperature</b>		
Temperature range with 100% illumination [°C]	10...60	10...60
Temperature range without illumination cassettes [°C]	0...70	10...70
<b>Performance Data Climate</b>		
Temperature range with 100% illumination [°C]	10...60	10...70
Temperature range without illumination cassettes [°C]	10...70	0...70
Humidity range with illumination cassettes, with illumination [% RH]	10...75	10...75
Humidity range without illumination [% RH]	10...80	10...80
<b>Lightdata per Illumination Cassettes</b>		
Daylight tubes [W/m <sup>2</sup> ]	24	38
Daylight tubes [lx]	9000	13000
Fluora® growth lamps [W/m <sup>2</sup> ]	23	36
Fluora® growth lamps [lx]	7500	10500
Arabidopsis lamps [W/m <sup>2</sup> ]	32	43
Arabidopsis lamps [lx]	11000	14000
<b>Electrical data</b>		
Nominal power (Version 230 V) [kW]	2.4	3.5
<b>Fixtures</b>		
Number of shelves (std./max.)	2/7	3/12
Number of illumination cassettes (std./max.)	2/2	3/3

## ORDERING INFORMATION [Art. No.]

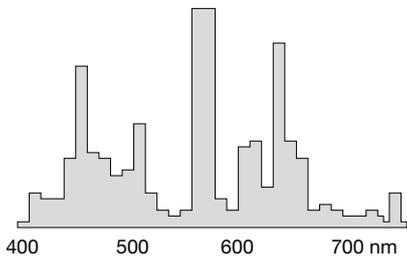
**Further details:** Go to [www.binder-world.com](http://www.binder-world.com) > Search > Enter Article Number

Voltage	Option model	KBWF 240	KBWF 720
200...240 V 1~ 50 Hz	Standard	9020-0281	9020-0282

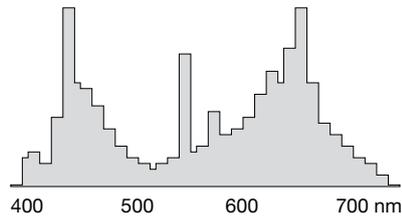
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## LIGHT SPECTRA

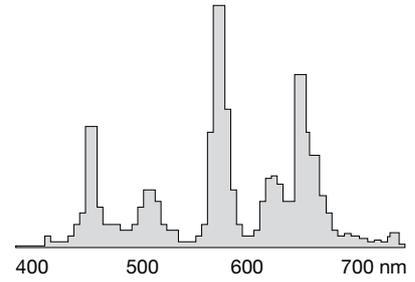
Daylight lamps  
Light color 865 (standard)



Fluora® growth lamps  
Light color 77 (optional)



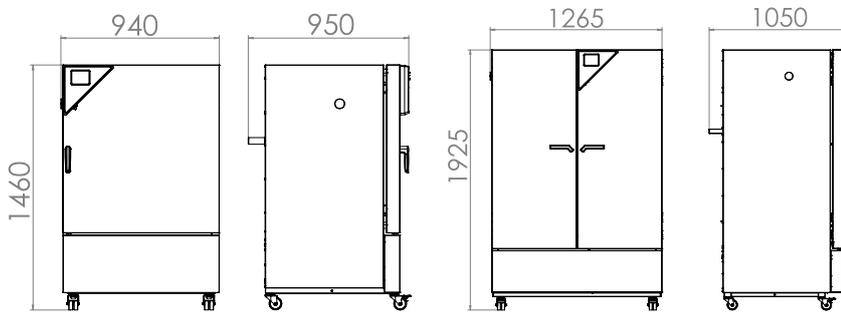
Arabidopsis lamps  
Light color 842 (optional)



## DIMENSIONS INCL. FITTINGS AND CONNECTIONS [MM]

KBWF 240

KBWF 720



## EXCERPT FROM OPTIONS AND ACCESSORIES

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### Access port with silicone plug

For introducing external measuring instruments. Large selection of different diameters and positions (left, right, or top)

Series KBW, KBWF

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### Data Logger Kit TH

Independent temperature and humidity data logging. The tailored product solution contains helpful accessories: From the magnetic mounting of the data logger to the BINDER unit and securing sensor cable for accurate readings.

Series KBW, KBWF

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### Interior socket

waterproof, switched flush-mounting box (CA3GD) for nominal voltage in unit interior, with cover and corresponding plug, (nominal voltage; max. 500 W; max. 90 °C; protection class IP67)

Series KBW, KBWF

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### Illumination

Illumination cassettes equipped with FLUORA®, Arabidopsis, or daylight fluorescent tubes.

Series KBW, KBWF

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### Services

You can access our installation, maintenance, calibration, validation, or warranty services by taking out a Maintenance Service Agreement or by simply getting in touch when you need us.

More information is available in the accessories and services chapter.

Series KBW, KBWF

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### BINDER INDIVIDUAL

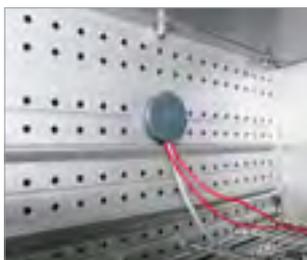
Using a BINDER series production product as a basis, we develop individual solutions as a single unit or in small batches. All products are tested, certified, and supplied with a full functional guarantee and warranty. More information is available in the accessories and services chapter.

Series KBW, KBWF

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► All extras online [go2binder.com/en-options](http://go2binder.com/en-options)

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Access port with silicone plug



Data Logger



Shaker operation in the chamber



Illumination