

# LaboDoser-100

## Instruction Manual

Original Instructions



CE

Doc. no.: 16377025-01\_C\_en-us  
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# 1 About this manual



**CAUTION**

Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.



**Note**

Read the Instruction Manual carefully before use.



**Note**

If you wish to view specific information in detail, see the online version of this manual.

## 2 Safety

### 2.1 Intended use

LaboDoser-100 is a dosing unit for 4 abrasive suspensions or lubricants.

LaboDoser-100 is intended to be used in combination with:

- LaboForce-100

The device is designed to be used with Struers consumables specially designed for this purpose and this type of device.

**Do not use the device for the following**

Other equipment than stated in the section "Intended use".  
LaboDoser-100 is not designed for dosing oxide polishing suspensions.

**Model**

LaboDoser-100

### 2.2 LaboDoser-100 safety precautions



#### 2.2.1 Read carefully before use

Ignoring this information and mishandling of the equipment can lead to severe bodily injuries and material damage.

### General safety precautions

1. The machine must be installed in compliance with local safety regulations. All functions on the machine and any connected equipment must be in working order.
2. This device must be mounted securely on the machine.
3. The operator must read the safety precautions and Instruction Manual, as well as relevant sections of the manuals for any connected equipment and accessories.
4. If you observe malfunctions or hear unusual noises, switch off the machine and call technical service.
5. Consumables: only use consumables specifically developed for use with this type of materialographic machine. Alcohol-based consumables: follow the current safety rules for handling, mixing, filling, emptying and disposing of alcohol-based liquids.
6. In case of fire, alert bystanders and the fire brigade. Disconnect the electrical power supply. Use a powder fire extinguisher. Do not use water.
7. This machine must be operated and maintained only by skilled/trained personnel.
8. Always switch off the electrical power supply and remove the plug or power cable before dismantling the machine or installing additional components.
9. The machine must be disconnected from the electrical power supply before any service. Wait 5 minutes until residual potential on the capacitors is discharged.
10. Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.
11. The equipment is designed to be used only with Struers consumables specifically designed for this purpose and this type of machine.
12. If the equipment is subjected to misuse, incorrect installation, alteration, neglect, accident or incorrect repair, Struers will accept no responsibility for damage to the user or the equipment.
13. Dismantling of any part of the equipment, during service or repair, should always be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.).

## 2.3 Safety messages

Struers uses the following signs to indicate potential hazards.



### **ELECTRICAL HAZARD**

This sign indicates an electrical hazard which, if not avoided, will result in death or serious injury.



### **DANGER**

This sign indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.



**WARNING**

This sign indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.



**CAUTION**

This sign indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.



**CRUSHING HAZARD**

This sign indicates a crushing hazard which, if not avoided, could result in minor, moderate or serious injury.



**HEAT HAZARD**

This sign indicates a heat hazard which, if not avoided, can result in minor, moderate or serious injury.

**General messages**



**Note**

This sign indicates that there is a risk of damage to property, or a need to proceed with special care.



**Hint**

This sign indicates that additional information and hints are available.

## 2.4 Safety messages in this manual



**WARNING**

Struers equipment must only be used in connection with and as described in the Instruction Manual supplied with the equipment.

# 3 Getting started

## 3.1 Device description

LaboDoser-100 is a dosing unit for delivering suspension or lubricant on a preparation disc in the preparation (grinding or polishing) of materials for further materialographic inspection.

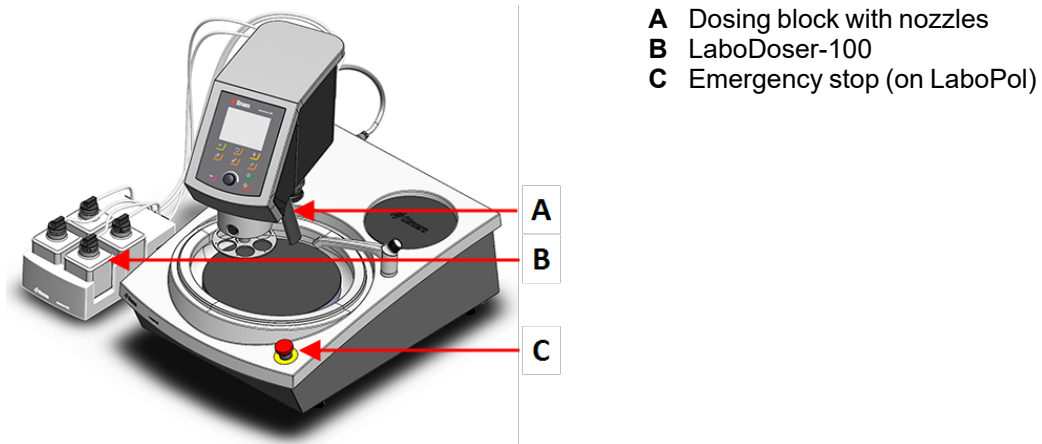
LaboDoser-100 is controlled by LaboForce-100.

LaboDoser-100 supports up to 4 bottles that can be filled with suspension and lubricant. The suspension and lubricant are pumped through connecting tubes to LaboForce-100.

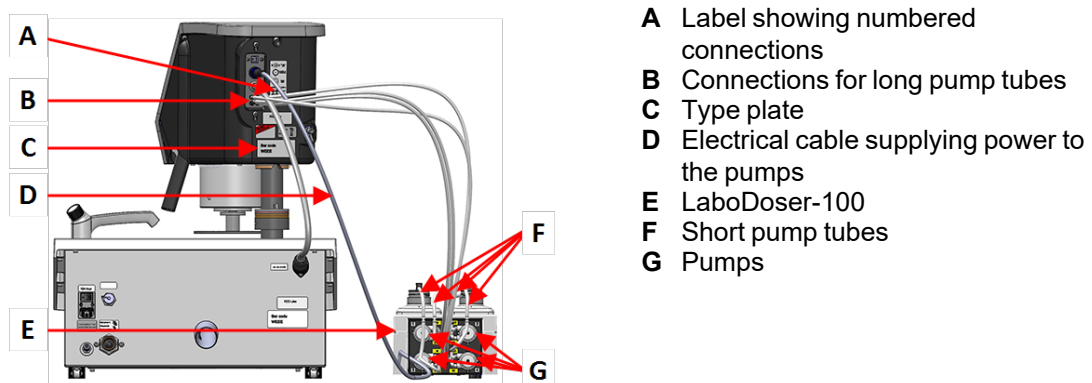
The device is designed to be used with Struers consumables specially designed for this purpose and this type of device.

## 3.2 LaboDoser-100

### Front view



### Rear view



## 4 Transport and storage

If, at any time after the installation, you have to move the unit or place it in storage, there is a number of guidelines we recommend that you follow.

- Package the unit securely before transportation. Insufficient packaging could cause damage to the unit and will void the warranty. Contact Struers Service.
- We recommend that you use the original packaging and fittings.

## 4.1 Long-term storage or shipping

For instructions on how to prepare the unit for long-term storage or shipping, see the specific machine manual.

Pay specific attention to the following:

- Disconnect the unit from the electrical power supply.
- Remove the doser.
- Place the machine and accessories in their original packaging.

# 5 Installation

## 5.1 Unpack the machine



### Note

We recommend that you keep all original packaging and fittings for future use.

1. Cut the packing tape on the top of the box.
2. Remove the loose parts.
3. Remove the unit from the box.

## 5.2 Check the packing list

Optional accessories may be included in the packing box.

The packing box contains the following items:

Pcs.	Description
1	LaboDoser-100
4	Easy connectors
1	Set of tubes <ul style="list-style-type: none"> <li>• 4 short tubes from bottles to pumps</li> <li>• 4 long tubes from pumps to LaboDoser-100</li> </ul>
1	Spiral cable wrap to wrap around the tubes
4	Silicone tubes for the pump for alcohol-based products
1	Instruction Manual set



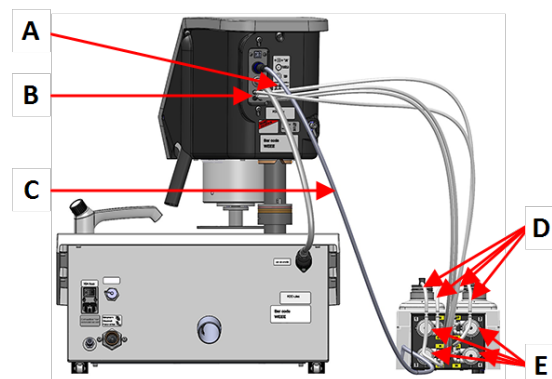
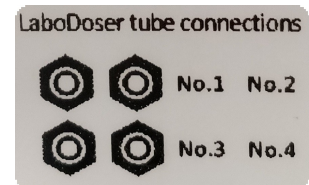
## 5.3 Installing LaboDoser-100



### Note

The pumps and the connections on the back of the specimen mover are numbered to help you connect the tubes to the correct pump.

1. Place LaboDoser-100 next to the machine.
2. Fit the easy connectors with tubes onto the Struers 500 ml suspension bottles.
3. Connect the short tubes from the bottles to the pumps marked **IN**.
4. Connect one end of the long tubes to the back of the specimen mover.
5. Connect the other end of the long tubes to the pumps marked **OUT**.
6. Make sure that the tubes are not taut, so that the control panel head can be moved freely.
7. Connect the electrical cable to the connectors on the pump and the specimen mover.
8. Wrap the section of spiral cable wrap around the electrical cables and the tubes.



- A** Label showing numbered connections  
**B** Connections for long pump tubes  
**C** Electrical cable supplying power to the pumps  
**D** Short pump tubes with easy connectors  
**E** Pumps

# 6 Operate the device

For instructions on how to operate the device, see the specific machine manual.

See also the section "Intended use" for the specific machine manual.

## 6.1 Cleaning the tubes

Clean the tubes and easy connectors when you switch between different types of lubricants/suspensions.



### Hint

If the equipment is not to be used for a prolonged period of time, Struers recommends that you clean the tubes.

LaboForce-100 is equipped with an automatic cleaning function for flushing the tubes between the bottles and the dosing nozzles.

**Procedure**

1. From the **Main menu** select **Maintenance > Cleaning of tubes**.
2. Select the tubes you wish to clean.  
**Bottle No.:** Identification of the bottle in the doser.  
**Status:** **Clean** or **Used**.  
**Selected:** **No** or **Yes**.
3. Press **F1** to start the cleaning process.
4. Follow the on-screen instructions.




# 7 Maintenance and service


**Technical questions and spare parts**

If you have technical questions or when you order spare parts, state serial number and voltage/frequency. The serial number and the voltage are stated on the type plate of the machine.

## 7.1 General cleaning

To ensure a longer lifetime for your machine, we strongly recommends regular cleaning.

 **Note**  
Do not use a dry cloth as the surfaces are not scratch resistant.

 **Note**  
Do not use acetone, benzol or similar solvents.

**If the machine is not to be used for a longer period of time**

- Clean the machine and all accessories thoroughly.

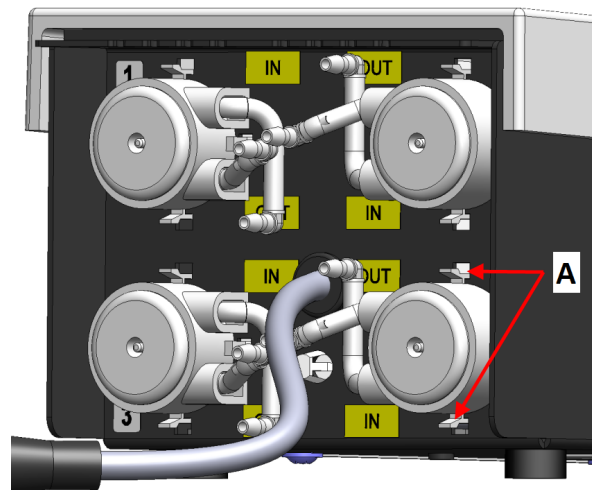
## 7.2 Change the tubes

When you use alcohol-based lubricants, the Novoprene tubes mounted in the pumps will harden over time. Silicone has a better resistance against alcohol.

You can replace the tubes with the set of silicone tubes supplied with the unit.

**Procedure**

1. Remove the back plate.
2. Remove the tube from the pump unit: The white connector must remain on the tube connected to LaboForce-100.
3. Press the two tabs at the base of the pump and remove the pump from the axle.

**A Tabs**

4. Remove the three rollers.


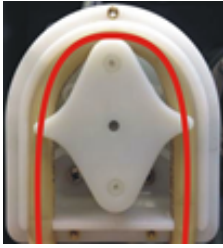
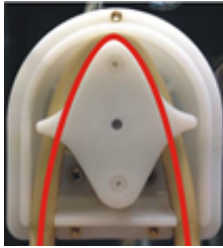


5. Remove the Novoprene tube.
6. Make a note of the distance between the two white clips on the Novoprene tube.
7. Move the white clips and the connector to the new silicone tube.



8. Fit the new tube into the housing and press it firmly into place.
9. Press the three rollers into the pump housing.
10. Mount the tube correctly in the pump.




Correct	Incorrect	
	 <p data-bbox="659 568 1023 804"> <b>Pump tube is too loose</b>                      Excess volume between the rollers will press "waves" of fluid which will stretch the tube.                      The lifetime of the tube will be reduced.                 </p>	 <p data-bbox="1050 568 1441 804"> <b>Pump tube is too tight</b>                      The tube is stretched.                      The lifetime of the tube will be reduced.                 </p>

11. Re-mount the bottom cover.
12. Press the pump back onto the axle.
13. Reconnect the tubes.
14. Make sure that the tubes are connected correctly so that liquid is pumped to LaboForce-100.

### 7.3 Daily

- Clean all accessible surfaces with a soft, damp cloth.
- Check and refill dosing bottles as needed.



**Hint**

If lubricant or suspension is not to be used for a prolonged period of time, remove the bottle from the bottle holder and store it upright.

### 7.4 Spare parts

For specific safety related parts, see the section "Safety Related Parts of the Control System (SRP/CS)" in the section "Technical data" in this manual.

#### Technical questions and spare parts

If you have technical questions or when you order spare parts, state serial number and voltage/frequency. The serial number and the voltage are stated on the type plate of the machine.

For further information, or to check the availability of spare parts, contact Struers Service. Contact information is available on [Struers.com](http://Struers.com).

### 7.5 Service and repair

We recommend that a regular service check be carried out yearly or after every 1500 hours of use.

When the machine is started up, the display shows information about total operation time and the machines service information.

After 1500 hours of operation time, the display will show a message reminding the user that a service check should be scheduled.

**Note**

Service must only be performed by a qualified technician (electromechanical, electronic, mechanical, pneumatic, etc.).  
Contact Struers Service.

**Service check**

We offer a range of comprehensive maintenance plans to suit the requirements of our customers. This range of services is called ServiceGuard.

The maintenance plans include equipment inspection, replacement of wear parts, adjustments/calibration for optimal operation, and a final functional test.

## 7.6 Disposal



Equipment marked with a WEEE symbol contains electrical and electronic components and must not be disposed of as general waste.

Contact your local authorities for information on the correct method of disposal in accordance with national legislation.

For disposal of consumables and recirculation fluid, follow local regulations.

# 8 Troubleshooting

For troubleshooting guidance, see the specific machine manual.

## 9 Technical data

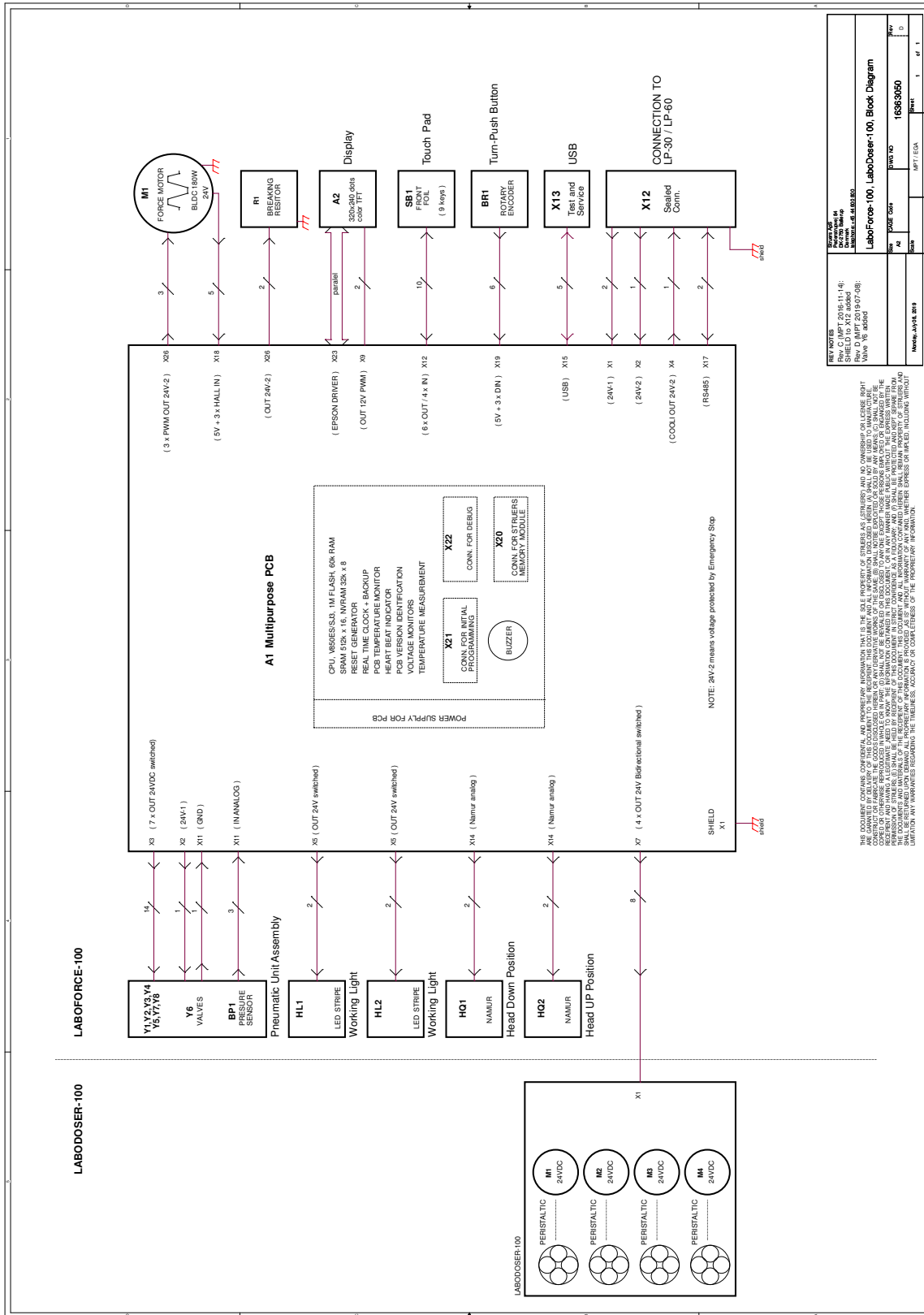
### 9.1 Technical data - LaboDoser-100

Subject	Specifications	
<b>Directives/Safety standards</b>	See the Declaration of Incorporation of Partly Completed Machinery.	
<b>Power supply</b>	Power inlet	LaboDoser-100 is connected directly to LaboForce-100
	Voltage/frequency	1 x 24 V DC
	Current, nominal load	0.15 A
	Current, maximum load	0.6 A
	Current, largest load	0.15 A
<b>Operating environment</b>	Surrounding temperature	5 – 40°C/41 – 104°F
	Humidity	< 85 % RH non-condensing
<b>Storage and transport conditions</b>	Surrounding temperature	0 – 60°C/32 – 140°F
	Humidity	< 85 % RH non-condensing
<b>Dimensions and weight</b>	Width	19.0 cm (7.5")
	Depth	30.6 cm (12.0")
	Height	11.5 cm (4.5")
	Weight	1.9 kg (4.2 lbs)

### 9.2 Diagrams - LaboDoser-100

Title	No.
LaboForce-100, LaboDoser-100, Block diagram	<a href="#">16363050 D</a>

16363050 D



## 9.3 Legal and regulatory information

### FCC notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

# 10 Manufacturer

Struers ApS  
Pederstrupvej 84  
DK-2750 Ballerup, Denmark  
Telephone: +45 44 600 800  
Fax: +45 44 600 801  
[www.struers.com](http://www.struers.com)

### Responsibility of the manufacturer

The following restrictions should be observed, as violation of the restrictions may cause cancellation of Struers legal obligations.

The manufacturer assumes no responsibility for errors in the text and/or illustrations in this manual. The information in this manual is subject to change without notice. The manual may mention accessories or parts not included in the supplied version of the equipment.

The manufacturer is to be considered responsible for effects on safety, reliability, and performance of the equipment only if the equipment is used, serviced, and maintained in accordance with the instructions for use.



# Declaration of Incorporation of Partly Completed Machinery

Manufacturer	Struers ApS • Pederstrupvej 84 • DK-2750 Ballerup • Denmark
Name	LaboDoser-100
Model	LaboDoser-100
Function	LaboDoser-100 Dosing unit controlled by LaboForce-100 when mounted on LaboPol-30 or LaboPol-60 Grinding/Polishing machine
Type	637
Cat. no.	06376902 for round bottles 06376104 for round and square bottles

The above listed machinery is only intended to be used with:  
And shall not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with this regulation, where appropriate.

LaboForce-100, LaboPol-30, LaboPol-60

Serial no.



Module H, according to global approach

**EU**

We declare that the product mentioned is in conformity with the following legislation, directives and standards:

<b>2006/42/EC</b>	EN 60204-1:2018, EN 60204-1-2018/Corr.:2020
<b>2011/65/EU</b>	EN 63000:2018
<b>2014/30/EU</b>	EN 61000-3-2:2014, EN 61000-3-3:2013, EN 61000-6-1:2007, EN 61000-6-3:2007, EN 61000-6-3-A1:2011, EN 61000-6-3-A1-AC:2012
<b>Additional standards</b>	NFPA 79, FCC 47 CFR Part 15 Subpart B

Authorized to compile technical file/  
Authorized signatory

VP Operations

Date: [Release date]

en For translations see  
bg За преводи вижте  
cs Překlady viz  
da Se oversættelser på  
de Übersetzungen finden Sie unter  
el Για μεταφράσεις, ανατρέξτε στη διεύθυνση  
es Para ver las traducciones consulte  
et Tõlked leiate aadressilt  
fi Katso käännökset osoitteesta  
fr Pour les traductions, voir  
hr Za prijevode idite na  
hu A fordítások itt érhetők el  
it Per le traduzioni consultare  
ja 翻訳については、  
lt Vertimai patalpinti  
lv Tulkojumus skatīt  
nl Voor vertalingen zie  
no For oversettelser se  
pl Aby znaleźć tłumaczenia, sprawdź  
pt Consulte as traduções disponíveis em  
ro Pentru traduceri, consultați  
se För översättningar besök  
sk Preklady sú dostupné na stránke  
sl Za prevode si oglejte  
tr Çeviriler için bkz  
zh 翻译见

[www.struers.com/Library](http://www.struers.com/Library)