User manual

SurALux – Light Curing Box 8204-LC

Updated March 2010

1.0 SurACer® 4450: specifications in brief (see Product Information)
The SurACer® 4450 makes it possible to upgrade advertising materials innovatively with its combinations of materials and processes:

- Components with no isocyanates → skin irritation and environmental hazards eliminated
- Cured under light → rapidly hardened
- Stable when mixed → easy to handle
- Highly transparent → 3-dimensional in effect
- Resistant to weather and UV light → suitable for outdoor use
- Highly adhesive → enduring bond
- Very flexible → multiple applications

Under the SurALux curing light 8204-LC, SurACer® 4450 hardens so quickly that the material is ready for delivery much sooner and thus more cheaply than has been the case for earlier comparable products. The advantages include environmentally friendly storage and disposal, and the fact that transport by mail services is risk-free. SurACer® 4450 is distributed in convenient, reasonably priced quantities which involve no additional costs.

2.0. SurALux - Light Curing Box **8204-LC**
The SurALux Light Curing Box 8204-LC is the means of curing coatings made with SurACer® 4450. The result will be see-through coating of the substrate, crystal clear and highly flexible. The substrate may have been produced by silkscreen printing, inkjet, dye-sublimation or printed transfers. SurACer® 4450 will coat all these. The material of the substrate may be polyester, PVC sheets, metallic films, moulded aluminium or other moulded shapes. All these can be given an aesthetically attractive gloss by being printed and then domed with SurACer® 4450.

Technical Data

Input voltage:	230 V AC
Working voltage:	12 V DC
Size:	600 x 400 x 170 mm
Weight:	10,6 kg
Exposure time:	between 5 and 8 minutes, depending on size of motif and thickness of coating
Bestrahlungsfläche:	up to DIN A4 (295 x 210 mm)
Standards:	CE mark
UV Light:	four 36-Watt tubes (giving UVA exposure and visible light)
Fuse:	5 amp
Scope of delivery	One SurALux 8204-LC core apparatus (see Fig.1) One 230 V-cable with plug One A4 backing sheet One user manual

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3.0. Commisioning

- When the packaging has been removed, place the curing box on a firm surface and level it up by turning the feet which are to be found under the corners of the base.
- Check it over for visible defects. Also check that all items have been delivered as ordered.
- Plug the cable into a 230 V socket.
- Switch on the box with the On/Off switch which is on the left-hand side of the base.
- The display will show “0 : 00 : 00”. The first 0 (on the left) is the time setting for the range of hours: not required in the operation of the curing light.
- The two zeros (00) in the centre are for setting the exposure time in minutes and the two zeros (00) on the right are for setting the seconds.
- Open the top of the box fully until contact is felt.
- The sheet of labels to be domed should be attached to the backing sheet with spray fixative.
- The backing sheet with the coated labels lying on it is placed on the base within the markings showing the area that can be cured.

Caution !

The backing sheet must without fail be positioned in the marked area to enable the whole A4 area to receive the radiation.

- Now the top of the box is lowered gently onto the base and thus closed.

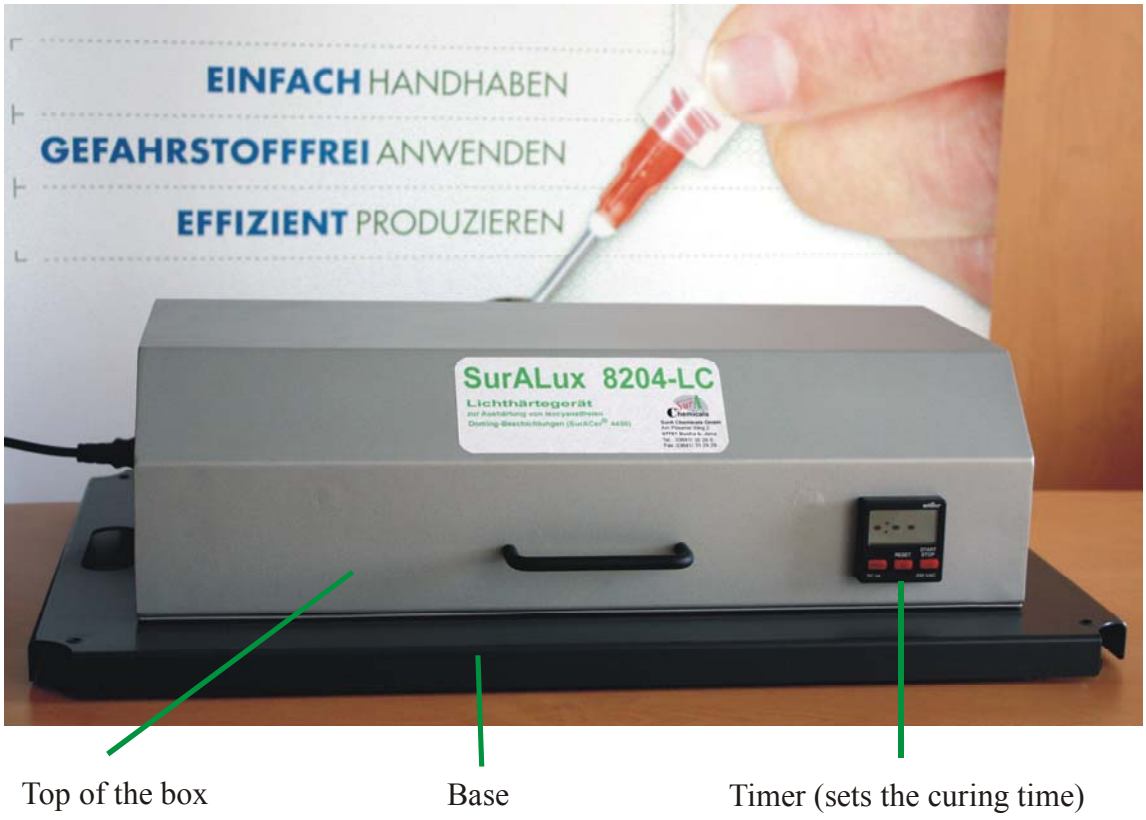

Fig. 1: Controls of the **SurALux 8204-LC** Light Curing Box

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Fig. 2: **SurALux 8204-LC** Light Curing Box with opened top of the box

3.1. Using the timer to set the exposure time

Fig. 3: **SurALux 8204-LC** - Timer

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Using the “PROG” key, select the setting range for curing time desired.
The first touch on the button will cause the first 0 (zero) in the hours section to flash. This section should be left as zero when setting curing times.

Caution !
Any curing that extends into hours will cause overheating and destruction of the equipment and is thus very dangerous.

The second touch on the “PROG” button will cause the two zeros (00) for the minutes section to flash.

Set the curing time desired using the “+” and “-” keys and going up or down in steps of one minute. The curing time should never exceed 10 minutes.

The third touch on the “PROG” button will cause the two zeros (00) for the seconds section to flash.
Using the “+” and “-” keys, set the curing time desired, going up or down in steps of one second.

When the “PROG” button has been pressed for the fourth time, the curing time has been set and none of the figures will flash.

3.2. Starting and stopping the curing process
When the exposure time has been set (in minutes and seconds, with a maximum of 10 minutes), the timer should be started by pressing the START/STOP key. This starts the curing process. Whatever the set time, it is possible to interrupt the curing process by pressing this key again at any moment, and to start it again in the same way.
As soon as the curing process is started, the internal cooling system also starts up.
The decreasing exposure time is displayed. When this process has finished, there will be an audible signal, and the last set time (in minutes and seconds) will show on the display

Caution !
During the exposure period, the top of the box must on no account be opened!

3.3. Checking the curing result
The hardening of the domes takes place within between 5 and 8 minutes under illumination with UVA light. For larger labels, the process may take 9 minutes (see 3.4 below). This period will depend on the surface area and height of the dome and must be determined experimentally before proceeding to actual production

Caution !
For the achievement of the properties specified by the manufacturer, it is absolutely necessary to use the technology described, which has been adapted to the material involved.
A fingernail test will reveal whether the hardening process is complete: no depression possible. If there is still liquid present in the body of the dome, the SurACer is not fully

cured In this case, the curing time must be extended a minute at a time. Over-curing by setting the time too long will do no harm.

Factors that influence the necessary curing time

- • the thickness of the coat to be cured
- • the size of the area to be cured
- • the type of film used
- • the temperature of the SurACer® 4450

Try out the curing of SurACer® 4450 on labels with a diameter of 2.5 to 3 mm and coating thickness: between 1.4 and 1.5 mm.

3.4. Guidelines for exposure time

Type	**Coating thickness**	**Surface**	**Approximate time**
Label	1,0 – 2,0 mm	1 – 10 cm²	6 - 8 min
Label	1,5 – 2,0 mm	10 – 100 cm²	1+1+6 min Curing with Interruptions
Text	1,5 – 2,5 mm	up to 60 mm length	7 min
Text	1,5 – 2,5 mm	> 60 mm length	1+1+5 min Curing with interruptions
Surface	1,0 – 2,0 mm	d = / < 60 mm	7 min
Surface	1,5 – 2,5 mm	d>60<150 mm	1+1+1+6 min Curing with interruptions

Always experiment to check out that these examples of application apply to the current case.

Note: where bigger surface areas are involved, the curing time can be divided up to avoid damage to the surface. (curing with interrupts)

Example: 7 minutes = 1 + 1 + 1 + 4 minutes

3.5. General notes

At the end of the exposure time, swing the top of the box back until it meets the stop. This encourages dissipation of the heat from the exposure cavity.
ventilation will continue and so dissipate the heat from the exposure cavity.
If there is too much heat in the exposure cavity, the coating material will be reactive on insertion. The top of the box should thus stay open at least until the next curing process is started.
At the end of a period of operation, the **SurALux Light Curing Box 8204-LC** should be fully cooled before the On/Off switch is turned to Off.
Never attempt to cure without using cold (or at most lukewarm) backing sheets made of aluminium or glass.
There must be a space left between the backing sheet and the bottom of the shunt.
The backing sheets supplied must be sprayed with have to be treated with removable spray fixative before film is placed on it.
The film (from which the squared backing foil has been removed) is placed on the backing sheet.

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To obtain the optimum SurACer® 4450 properties, both components must be weighed in the right proportions,

component 1 : 1,0 g / component 2 : 2,0 g

and then thoroughly mixed
Keeping the mixing ratio accurate is crucial to the achievement of the given product specifications for the hardened doming material. There will be surface defects and poor quality, ranging from stickiness to patchy hardening, if the ratio is not exactly maintained.
The mixing of component 1 and 2 has been completed successfully when a homogeneous clear mass has been formed from the two. Any air bubbles imported during the mixing process will escape when the mixture has stood for some time: how long depends on the quantity of the components blended and might be up to 24 hours. In the meanwhile, the mixture should be kept in the dark.
The time necessary for all the visible air bubbles to escape can be shortened by brief heating of the mixture, to no more than 40°C.

There are two options for the application of the doming material to the label sheet after the waste is removed: the doming gun included in the **SurADoming START 20** set or the **DG 8301** (optionally **DG 8301-E**) applicators.

The measured shot of doming material will diffuse to the edge on its own; if required, more can be added to achieve the right coating thickness.

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It is possible to make the SurACer® 4450 material a little more runny by warming it first in warm water.
Air may get into the SurACer® 4450 material in the course of application. Prick any bubbles with a knife–point or other metal (or glass) pointed object.
If the SurACer® 4450 material overshoots the edges of the label slightly, it will retreat. Larger-scale overflows can be removed with a suitable tool, such as a spatula or stylus.
If large quantities of SurACer® 4450 are spilt, they can be blotted up and wiped away with absorbent cloth or paper. The coating task will have to be started anew.
SurAChem 5380 should be used for cleaning up the surface, as it may be destroyed by other cleaners.
The intensity of the exposure may decrease after a certain time.
If the curing time exceeds 10 minutes, it is recommended that the lamp be replaced.
Always act in accordance with the product description.

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3.5. Changing the tubes

1. Switch off the box and disconnect the plug from the mains.
2. Caution: The equipment heats up during the curing process.
3. Before being opened to have the tubes replaced, the box must without fail be allowed to cool sufficiently.
4. Open the top of the box fully until contact is felt.
5. Now open the clips and take the tubes out of their sockets.
6. Put in the new tubes and reassemble the box in reverse order of the instructions above.

4.0. Guarantee, transport

4.1. The SurALux light curing box 8204-E is guaranteed for 24 months from the date of purchase. (For repair or replacement it must be returned to the manufacturers at the purchaser's cost.).

4.2. The guarantee covers:

1. faults in the box such as defective materials, functions or workmanship.
2. damage to the box during transport.

4.3. The guarantee does not cover:

1. faults caused by faulty operation, improper use, abuse of the equipment or wear and tear (which applies also to the lights and fuses
2. incorrect assembly or the insertion of parts not obtained from the manufacturer.
3. claims for replacement of materials, consequential damage or loss of production.

4.4. Damage sustained during transport and anything missing from the goods supplied must be notified immediately in writing to the supplier, whose fax number is +49 3641 352929.
The damage and incompleteness must also be reported to the delivery company and the seller. For the rest, the sellers terms and conditions of business and guarantees will apply.

4.5. If it is necessary to return the box to the supplier, this is only permitted in the original packing and on a disposable palette, with functional transport safety devices. The box must be placed upside down, i.e. with the adjustable feet facing upwards; on the pallet. If the original packing is not used by the customer for return of the box, any damage during transport will be charged to the customer and invoiced accordingly. Exchange or replacement of accessories or repair will be organised via the seller.

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