

Klas-DX

Intelligen LLLT Dose Unit



User's Guide



English

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Getting started

Install your Klas-DX with the included rechargeable battery and begins to get started low level laser therapy (LLLT).

Using Klas-DX

Klas-DX can be used for treatment of diseases and conditions, follow the recommended dosage and treatment time to get the best efficacy. You can also find new information about using Klas-DX on the web www.konftec.com.

Using the battery

- Use the rechargeable battery that came with your Klas-DX only.
- If you do not use your Klas-DX for a period of time, be sure to take battery out from your Klas-DX.

Specifications and model no.

Specifications

Operation Environment	0 ~ 50 °C (32 ~ 122 °F); 10 ~ 95%RH (Non-condensing)
Power Supply	Rechargeable Li-ion Battery
Battery Charger / AC Power Supply Adaptor	
Power Input Voltage	90V AC ~ 264V AC
Power Input Frequency	47Hz ~ 63Hz
Power Input Current	Max. 0.5A (115V AC), 0.25A (230V AC)

Model No.

Model No.	Laser Module			
	660 nm	635 nm	808 nm	
	150 mW	220 mW	250 mW	460 mW
<i>Klas-DX61</i>	◎			
<i>Klas-DX62</i>		◎		
<i>Klas-DX82</i>			◎	
<i>Klas-DX84</i>				◎
<i>Klas-DX6162</i>	◎	◎		
<i>Klas-DX6182</i>	◎		◎	
<i>Klas-DX6184</i>	◎			◎
<i>Klas-DX6282</i>		◎	◎	
<i>Klas-DX6284</i>		◎		◎

Parts description

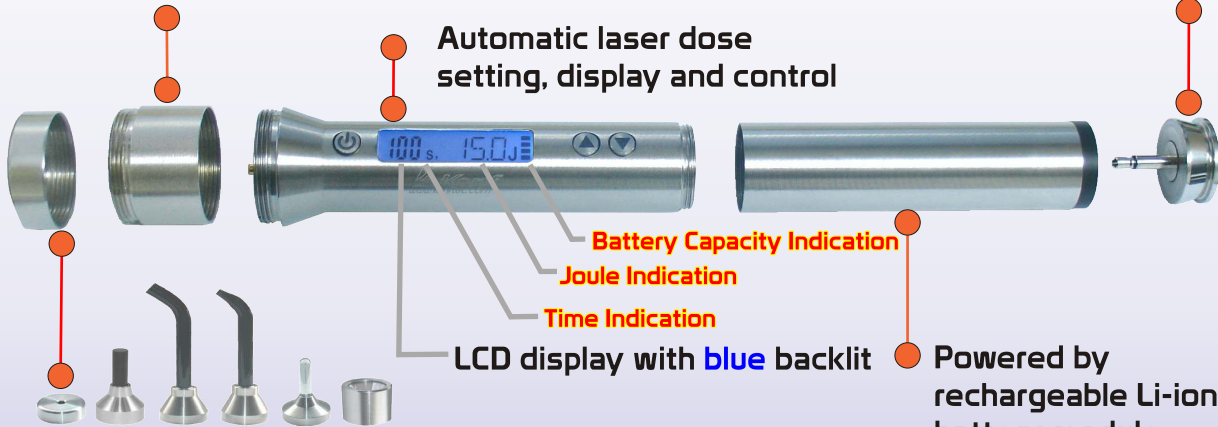
Intelligent LLLT Dose Unit

Exchangeable laser module by user

All stainless steel robust construction with compact assembly

Safety key

Automatic laser dose setting, display and control



Battery Capacity Indication

Joule Indication











Time Indication

LCD display with blue backlit











Powered by rechargeable Li-ion battery module

Exchangeable optic caps

Program mode

Step	Description	Depress Button	Display	Remarks
1	Enter Progam Mode	  		Display Flash
2	Increase Value			Value per Depress: 5 mW
	Decrease Value			
3	Back to Operation Mode			Audio Beep: Once Display Pre-set Value

Operation mode

Step	Description	Depress Button	Display	Remarks
1	Pre-start		30s, 4.5J	Display Last Setting Time (Auto Dose)
2-a	Increase Time (Dose)		32s, 4.6J	Time per Depress: 1 second (Auto Dose)
	Decrease Time (Dose)		28s, 4.4J	
2-b	Speedy Increase Time (Dose)	 > 1 second	40s, 6.0J	Time per Depress: 10 second (Auto Dose)
	Speedy Decrease Time (Dose)	 > 1 second	20s, 3.0J	
3	Start		30s, 0.0J	Audio Beep: Once
	Pause		20s, 1.5J	Display Flash
	Emergency Stop	 > 2 second	20s, 1.5J	Audio Beep: 3 times

Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-A				Laser beam spot size:		0.13 cm ²	
Dose (J/cm ³)	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength	660nm	635nm	808nm	
			Model No.	Klas - DX61	Klas - DX62	Klas - DX82	Klas - DX84
			LD Power (mW)	150	220	250	460
			End Power (mW)	135	200	220	390
			Power Density (W/cm ²)	1.04	1.54	1.69	3.00
3 J/cm ²	Surface	1		2.9	2.0	1.8	1.0
3 J/cm ³	0.5	0.6772		4	3	3	1
	1	0.4586		6	4	4	2
	1.5	0.3105		9	6	6	3
	2	0.2103		14	9	8	5
	2.5	0.1424				12	7
	3	0.0964				18	10
	3.5	0.0653				27	15
	4	0.0442				40	23
	4.5	0.0299				59	33
5	0.0203				87	49	



Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-B				Laser beam spot size: 0.5 cm ²			
Dose (J/cm ³)	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength	660nm	635nm	808nm	
			Model No.	Klas - DX61	Klas - DX62	Klas - DX82	Klas - DX84
			LD Power (mW)	150	220	250	460
			End Power (mW)	120	170	200	370
			Power Density (W/cm ²)	0.24	0.34	0.40	0.74
1 J/cm ²	Surface	1		13	9	8	4
1 J/cm ³	0.5	0.6772		18	13	11	6
	1	0.4586		27	19	16	9
	1.5	0.3105		40	28	24	13
	2	0.2103		59	42	36	19
	2.5	0.1424				53	28
	3	0.0964				78	42
	3.5	0.0653				115	62
	4	0.0442				170	92
	4.5	0.0299				251	136
	5	0.0203				369	200



Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-D				Laser beam spot size: 0.5 cm ²			
Dose (J/cm ³)	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength	660nm	635nm	808nm	
			Model No.	Klas - DX61	Klas - DX62	Klas - DX82	Klas - DX84
			LD Power (mW)	150	220	250	460
			End Power (mW)	120	170	200	370
Power Density (W/cm ²)	0.24	0.34	0.40	0.74			
1 J/cm ²	Surface	1		13	9	8	4
1 J/cm ³	0.5	0.6772		18	13	11	6
	1	0.4586		27	19	16	9
	1.5	0.3105		40	28	24	13
	2	0.2103		59	42	36	19
	2.5	0.1424				53	28
	3	0.0964				78	42
	3.5	0.0653				115	62
	4	0.0442				170	92
	4.5	0.0299				251	136
	5	0.0203				369	200



Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-E				Laser beam spot size:		0.07 cm ²	
Dose (J/cm ³)	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (second)				
			Wavelength	660nm	635nm	808nm	
			Model No.	Klas - DX61	Klas - DX62	Klas - DX82	Klas - DX84
			LD Power (mW)	150	220	250	460
			End Power (mW)	100	150	180	320
Power Density (W/cm ²)	1.43	2.14	2.57	4.57			
3 J/cm ²	Surface	1		2	1	1	1
3 J/cm ³	0.5	0.6772		3	2	2	1
	1	0.4586		5	3	3	1
	1.5	0.3105		7	5	4	2
	2	0.2103		10	7	6	3
	2.5	0.1424				8	5
	3	0.0964				12	7
	3.5	0.0653				18	10
	4	0.0442				26	15
	4.5	0.0299				39	22
	5	0.0203				57	32



Specifications and Treatment Time

Optic Cap-N Laser beam: End Dispersion				
Wavelength	660nm	635nm	808nm	
Model No.	<i>Klas-DX61</i>	<i>Klas-DX62</i>	<i>Klas-DX82</i>	<i>Klas-DX84</i>
LD Power (mW)	150	220	260	460
End Power (mW): Dispersion	120	170	210	370



Specifications and Treatment Time

Treatment Time Calculation Table							
Optic Cap-S		Laser beam spot size:				3 cm ²	
Dose (J/cm ³)	Depth of Tissue (cm)	Energy Loss Factor	Treatment Time (minute)				
			Wavelength	660nm	635nm	808nm	
			Model No.	Klas - DX61	Klas - DX62	Klas - DX82	Klas - DX84
			LD Power (mW)	150	220	250	460
			End Power (mW)	60	88	104	184
			Power Density (W/cm ²)	0.020	0.029	0.035	0.061
3 J/cm ²	Surface	1		150 sec.	102 sec.	87 sec.	49 sec.
3 J/cm ³	0.5	0.6772		4	3	2	1
	1	0.4586		5	4	3	2
	1.5	0.3105				4.6	3



About operating and storage temperatures

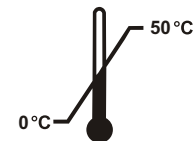
- ☑ Operate your **Klas-DX** in a place where the temperature is always between 0 and 50° C (32 to 122° F).
- ☑ Store your **Klas-DX** in a place where the temperature is always between -20 and 85° C (-4 to 185° F).

Troubleshooting

My Klas-DX won't turn on

- ☑ Make sure **Klas-DX**'s safety key is inserted.
- ☑ If that doesn't work, check the battery in closed position.
- ☑ If that doesn't work, loosen the battery and fasten again.
- ☑ If LCDs' do not light, replace the new battery.

If that doesn't work, contact your local sales office.



Learning more, service and support

There is a wealth of information about using **Klas-DX** on the Web.

For the latest information on **Klas-DX** service and support information go to www.konftec.com

Obtaining warranty service

If the product appears to be damaged or does not function properly, please follow the advice in this booklet, and the online resources. If the unit still does not function, go to www.konftec.com for instructions on how to obtain warranty service.

Important safety instructions

When setting up and using your **Klas-DX**, remember the following:

- ☑ Read user's guide carefully before you plug your **Klas-DX** Power Adapter into a power outlet.
- ☑ Keep user's guide handy for reference by you and others.
- ☑ Follow all instructions and warnings dealing with your **Klas-DX**.

Warning: Electrical equipment may be hazardous if misused.

Operation of this device, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

Warning: Laser beam

Avoid direct eye exposure to the laser beam.

Because some **Klas-DX** lasers emit invisible infrared light, the usage of laser part in the area of the face and around the eyes must proceed with appropriate care and caution.

Invisible infrared laser light penetrating the eye may cause serious harm after extended exposure. Therefore, the use of the optional laser safety goggles is advised.

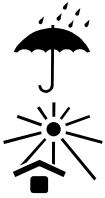


Using the power adapter/battery charger

- ☑ Use only the power adapter that came with your [Klas-DX](#). Adapters for other electronic devices may look similar, but they may damage your [Klas-DX](#).
- ☑ The only way to shut off power completely to your power adapter is to disconnect it from the power source.
- ☑ When connecting or disconnecting your power adapter, always hold the power adapter by its sides. Keep fingers away from the metal part of the plug.
- ☑ Before connecting your [Klas-DX](#) to the power adapter, make sure there are no foreign objects inside the adapter's port.
- ☑ The power adapter for your [Klas-DX](#) is a high-voltage component and should not be opened for any reason, even when the [Klas-DX](#) is off. If the power adapter needs service, see “Learning more, service, and support.”

Avoid wet locations

Warning To reduce the chance of shock or injury, do not use your **Klas-DX** in or near water or wet locations.



- ☑ Keep your **Klas-DX** and power adapter away from sources of liquids, such as drinks, wash basins, bathtubs, shower stalls, and so on.
- ☑ Protect your **Klas-DX** and the power adapter from direct sunlight and rain or other moisture.
- ☑ Take care not to spill any food or liquid on **Klas-DX** or its power adapter. If you do, unplug **Klas-DX** before cleaning up the spill.
- ☑ Depending on what you spilled and how much of it got into your equipment, you may have to send your equipment to Konftec for service. See “Learning more, service, and support.”

Do not make repairs yourself

Warning Except the battery module, do not attempt to open your **Klas-DX** or power adapter, disassemble it. You run the risk of electric shock and voiding the limited warranty. No user-serviceable parts are inside. For service, see “Learning more, service, and support.”



Cleaning

Follow these general rules when cleaning the outside of your **Klas-DX** and its components:

- ☑ Make sure your power adaptor of **Klas-DX** is unplugged.
- ☑ Use a damp, soft, lint-free cloth. Avoid getting moisture in openings.
- ☑ Don't use aerosol sprays, solvents or abrasives.

About handling

- ☑ Your **Klas-DX** may be damaged by improper storage or handling.
- ☑ Be careful not to drop you **Klas-DX** when treating or transporting the device.



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