

# ***Klas-DX***

**Intelligen LLLT Dose Unit**



# **User's Guide**



English

|   |    |
|---|----|
| Getting started/ Using Klas-DX          | 2  |
| Specifications and model no.            | 3  |
| Parts description                       | 4  |
| Program mode                            | 5  |
| Operation mode                          | 6  |
| Specifications and treatment time       | 7  |
| Troubleshooting                         | 13 |
| Safety instructions                     | 14 |
| Using the power adapter/battery charger | 15 |
| Cleaning                                | 16 |

## 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](http://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                          |
| <b>Battery Charger / AC Power Supply Adaptor</b> |  |
| 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

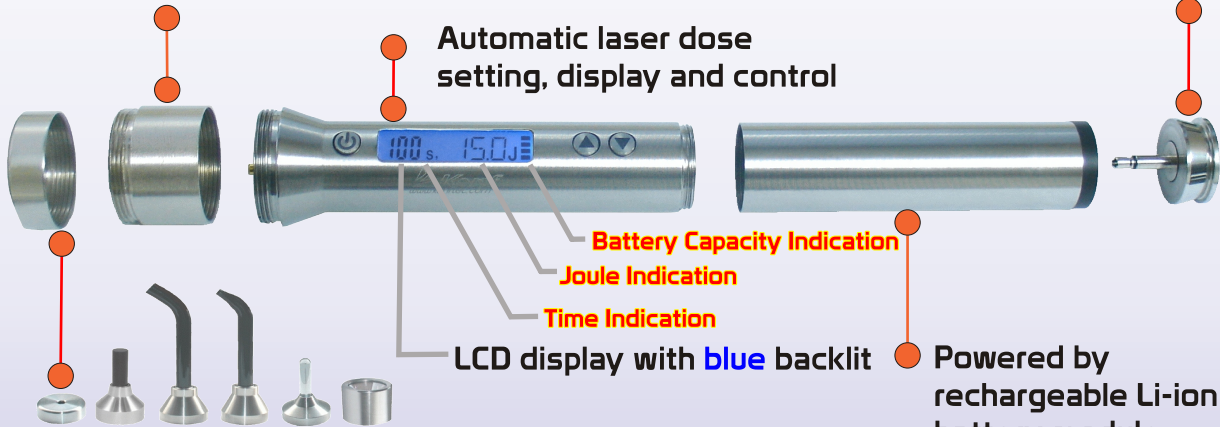
## Intelligent LLLT Dose Unit

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:<br>5 mW                |
|      | Decrease Value         |    |  |   |
| 3    | Back to Operation Mode |    |  | Audio Beep: Once<br>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 <sup>2</sup> |             |
| Dose<br>(J/cm <sup>3</sup> )     | Depth of<br>Tissue<br>(cm) | Energy<br>Loss<br>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<br>(W/cm <sup>2</sup> ) | 1.04                  | 1.54        | 1.69                 | 3.00        |
| 3 J/cm <sup>2</sup>              | Surface                    | 1                        |                                       | 2.9                   | 2.0         | 1.8                  | 1.0         |
| 3 J/cm <sup>3</sup>              | 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 <sup>2</sup> |             |             |             |
| Dose<br>(J/cm <sup>3</sup> )     | Depth of<br>Tissue<br>(cm) | Energy<br>Loss<br>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<br>(W/cm <sup>2</sup> ) | 0.24                                      | 0.34        | 0.40        | 0.74        |
| 1 J/cm <sup>2</sup>              | Surface                    | 1                        |                                       | 13  | 9           | 8           | 4           |
| 1 J/cm <sup>3</sup>              | 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 <sup>2</sup> |             |             |             |
| Dose<br>(J/cm <sup>3</sup> )          | Depth of<br>Tissue<br>(cm) | Energy<br>Loss<br>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<br>(W/cm <sup>2</sup> ) | 0.24                       | 0.34                     | 0.40                    | 0.74                                      |             |             |             |
| 1 J/cm <sup>2</sup>                   | Surface                    | 1                        |                         | 13  | 9           | 8           | 4           |
| 1 J/cm <sup>3</sup>                   | 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 <sup>2</sup> |             |
| Dose<br>(J/cm <sup>3</sup> )          | Depth of<br>Tissue<br>(cm) | Energy<br>Loss<br>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<br>(W/cm <sup>2</sup> ) | 1.43                       | 2.14                     | 2.57                    | 4.57                  |             |                      |             |
| 3 J/cm <sup>2</sup>                   | Surface                    | 1                        |                         | 2                     | 1           | 1                    | 1           |
| 3 J/cm <sup>3</sup>                   | 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 <sup>2</sup> |             |
| Dose<br>(J/cm <sup>3</sup> )     | Depth of<br>Tissue<br>(cm) | Energy<br>Loss<br>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<br>(W/cm <sup>2</sup> ) | 0.020       | 0.029       | 0.035             | 0.061       |
| 3 J/cm <sup>2</sup>              | Surface                    | 1                        |                                       | 150 sec.    | 102 sec.    | 87 sec.           | 49 sec.     |
| 3 J/cm <sup>3</sup>              | 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

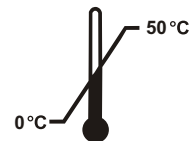
- ☑ Operate your [Klas-DX](#) in a place where the temperature is always between 0 and 50° C (32 to 122° F).
- ☑ Store your [Klas-DX](#) in a place where the temperature is always between -20 and 85° C (-4 to 185° F).

## 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](http://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](http://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.



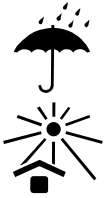
## Using the power adapter/battery charger

- ☑ 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.



***Konftec Corporation***

12F-7, No.77, Sintai 5th Rd., Sec. 1,  
Sijhih District, New Taipei City 221  
Taiwan

[www.konftec.com](http://www.konftec.com)

© 2013 Konftec Corporation. All rights reserved.

Konf, the Konf logo and Klas  
are trademarks of Konftec Corporation,  
registered in Taiwan and  
other countries.

UKDX\_30401E

