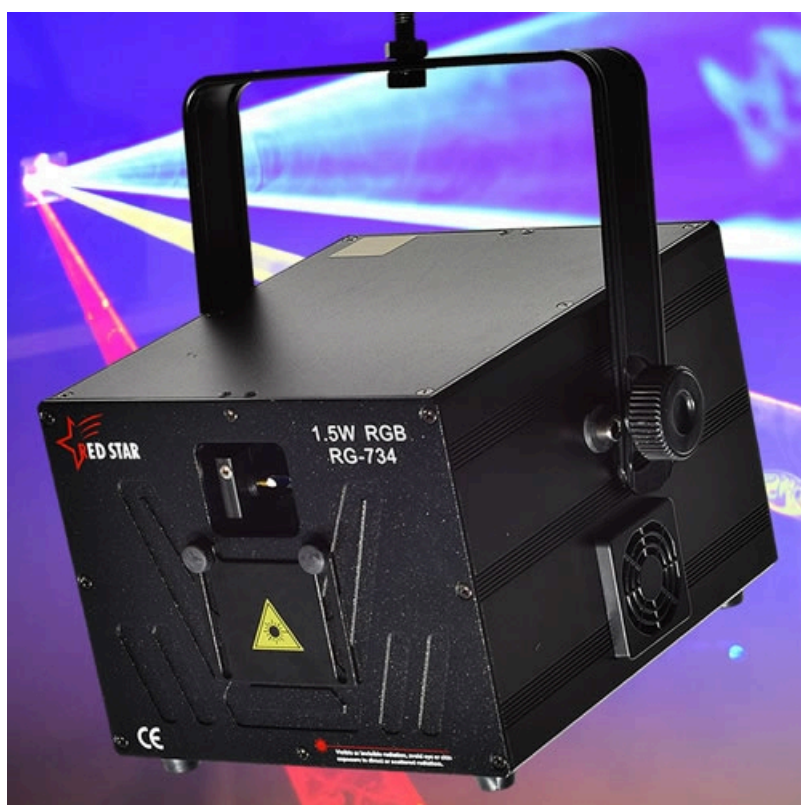


USER MANUAL

RGB laser 1,5 W, 15 kpps, DMX, ILDA

LASER280



Code LASER280
EAN 8594224720179

1 About this manual

This user manual applies to the product RGB laser 1,5 W, 15 kpps, DMX, ILDA (code LASER280).

Read this manual carefully before installing the product and putting it into operation for the first time, follow all of its instructions, and keep it for future reference. If you pass the product on to another person, include this manual.

Safety notices are marked with signal words according to the severity of the hazard: DANGER – an imminent hazard that will result in death or serious injury; WARNING – a potential hazard that could result in death or serious injury; CAUTION – a potential hazard that could result in minor injury or property damage; NOTE – additional information for correct and safe use.

2 Safety instructions

WARNING

- This device is intended for professional use. Installation, connection, setup and maintenance must be carried out only by suitably qualified persons who have read this manual.
- Use the device only for its intended purpose and as described in this manual.
- Do not open the housing and do not modify or tamper with the device. Refer all repairs to an authorized service center.
- Do not use the device if its housing, power or data cable, or a connector is damaged, if the device has been dropped, or if liquid or a foreign object has entered it. In such a case, have it checked by a service center.
- Disconnect the device from the power supply before cleaning, maintenance or any work on the connections.
- After moving the device from a cold to a warm environment, let it reach room temperature before switching it on to prevent condensation inside.
- The device is not a toy; keep it out of the reach of children.

WARNING

- This device is designed for indoor use only. Protect it from rain, splashing water, moisture and dust, and do not place containers with liquids on it.
- Do not operate the device in high humidity, near water, or where condensation can form on it.

DANGER

- This device is a Class 4 laser product according to IEC/EN 60825-1.
- Laser radiation can cause permanent eye damage, even from brief exposure to a direct or reflected beam. Never look into the beam or the laser aperture, even if the laser appears to be off.
- Never aim the beam at people, animals, aircraft, vehicles or windows, and do not view it through optical instruments (binoculars, camera lenses).
- The operator is responsible for the safe operation of the laser and must ensure that the maximum permissible exposure (MPE) to laser radiation is not exceeded anywhere people may be present (operators, performers, audience) and that operation complies with the regulations applicable at the place of use; in the Czech Republic, these limits are set by Government Regulation No. 291/2015 Coll., on the protection of health against non-ionizing radiation.
- The laser may be operated only by an instructed person who keeps the beam paths under control at all times and can stop the emission immediately, for example by disconnecting the power. Never leave the laser running unattended.

- Do not modify the laser in any way; modifications can increase the emitted power and change the laser class. Do not remove the warning labels on the device and keep them legible.

DANGER Class 4 laser product – avoid eye or skin exposure to direct or scattered radiation. Both the direct beam and its reflections are hazardous, including diffuse reflections from matte surfaces. The beam can burn the skin and ignite flammable materials.

NOTE The semiconductor laser requires an operating ambient temperature of 15–30 °C.

CAUTION After two hours of continuous operation, turn off the fixture for 10 minutes to allow the laser to cool down completely.

CAUTION Do not turn the fixture on and off frequently, as this reduces laser life, and avoid leaving it continuously powered on for excessively long periods.

WARNING Avoid looking into the laser output through magnifying optical equipment, as this increases the risk of eye injury.

3 Product description

Package contents

- 1× Handle
- 1× Power cord
- 2× Screws
- 1× RGB laser 1,5 W, 15 kpps, DMX, ILDA

4 Installation

WARNING

- Install the laser in a fixed, stable position and secure it against shifting and falling so that the beam paths cannot change unexpectedly.
- In areas accessible to people, keep all beams at least 3 m above the floor. Aiming beams into the audience (audience scanning) is permissible only on the basis of a competent assessment showing that the maximum permissible exposure is not exceeded.
- Remove mirrors, glass, shiny metal and other reflective surfaces from the beam paths. Terminate beams on matte, non-flammable surfaces.
- Outdoors, do not project beams into open airspace; laser projection into airspace may require permission from the aviation authority (in the Czech Republic, the Civil Aviation Authority).
- Before switching the laser on, make sure that nobody is in the beam path.

WARNING

- Rigging must be carried out only by qualified persons in accordance with applicable regulations, in particular those for work at height.
- The supporting structure and fixings must safely carry the weight of all suspended devices; verify their load capacity in advance.
- Weight of the device: 3.6 kg.
- Use suitable mounting hardware (for example truss clamps) and tighten all screw connections properly.
- Always secure the suspended device against falling with a safety cable of adequate load capacity,

routed through a fixed point of the device and around the supporting structure.

- During installation and removal, keep people out of the area below the work position.
- Regularly inspect the fixings and the safety cable for damage, corrosion and loosening.

Remove the handle and attach it to the base using the screws, then tighten the two screws clockwise.

Secure the fixture to the truss using screws before powering on.

5 Connections

- Use shielded cable designed for DMX512 with an impedance of 110 Ω . Ordinary microphone cable is not suitable for DMX, especially over longer distances.
- Connect the devices in a daisy chain: connect the DMX OUT of one device to the DMX IN of the next. Do not split the line with Y-cables or wire it in a star; the line may be split only with a DMX splitter.
- Connect the shield to pin 1 only. Do not connect the shield (ground) to the metal shell of the connector; this can cause short circuits or erratic behavior.
- XLR pin assignment: pin 1 – shield (ground), pin 2 – Data- (Data Complement), pin 3 – Data+ (Data True). On 5-pin connectors, pins 4 and 5 are not connected; a 5-pin connector can be connected to a 3-pin one with a cable adapter.
- Terminate the end of the line (for impedance matching): plug an XLR connector with a 120 Ω , ¼ W resistor between pins 2 and 3 into the DMX OUT of the last device. This reduces the risk of erratic behavior.
- Connect no more than 32 devices to one DMX line. For more devices or longer runs, use a DMX splitter or booster.

6 Operation

Switching on and off

- Power on the device to automatically load LaserSystem2.8 software until software version Sof-v2.8 is displayed.

Control panel

Button	Function
MENU	–
UP	Select the required functions using the UP and DOWN buttons.
DOWN	Select the required functions using the UP and DOWN buttons.
ENTER	Confirm the selected function and return to the previous menu

Display menu

Code	Values	Function
1、 DMX-512		DMX-512 model. DMX-512 mode settings.
– 1、 Address 001		Select the fixture address. Select the DMX start address for the fixture.
2、 I play		Built-in playback mode.
– 1、 Show	001	Select performance effects.
– 2、 Music	1、 OFF / 2、 ON	Sound-active control. Enable or disable sound mode.
3、 Testing		Test mode. Testing functions for scanning and color.
– 1、 Scan	1、 Scan / 2、 15-30KPPS	Scan speed test. Scanner test options.
Code	Values	Function

- 2、Color	1、Single1-7 / 2、 RGY / 3、 RBP / 4、 GBA / 5、 RGB / 6、 WYAP	Select color test patterns.
4、 Setting		System and fixture settings.
- 1、 Light	1、 ON / 2、 ON 5S	Set the display backlight to stay continuously on or turn off after 5 seconds.
- 2、 Rasters	1, grating walk / 2, manual small grid effect / 3, manual 3D effect / 4, manual one-dimensional effect / 5 manual galactic effect / 6, manual ripple effect / 7, manual geometry effect	Raster wheel effects. Manual selection of diffraction grating effects.
- 3、 Master	1、 OFF / 2、 ON	Master mode setting. Enable or disable Master mode.
- 4、 Channel	1、 12CH / 2、 23CH	DMX Channel Mode.
5、 Default	1、 Yes / 2、 No	Restore factory defaults.

DMX mode (1、 DMX-512)

DMX-512 control mode.

Setting the DMX address

- The device occupies as many consecutive channels in the DMX universe as the selected DMX mode uses, starting at the set start address.
- Number of channels occupied in IPLAY (24CH) mode: 24.
- Choose start addresses so that the channels of individual devices do not overlap and the last occupied channel does not exceed 512. Devices with the same start address and mode respond identically.
- For several devices in a row in IPLAY (24CH) mode, you can use, for example, the start addresses 1, 25, 49, 73.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

NOTE Upon power-on, the device automatically loads LaserSystem2.8 software, then displays software version Sof-v2.8.

NOTE Channel options in the menu are listed as 12CH and 23CH, while the DMX chart sections list Channel 1 mode, IPLAY mode 13CH, and IPLAY mode 24CH.

7 DMX channels

Mode	Channels
1CH	1
IPLAY (13CH)	13
IPLAY (24CH)	24

Mode 1CH

CH	Function	DMX	Description
1	Iplay Mode	0–29	Laser closing
		30–59	Manual control
		60–89	Walk from play
		90–119	Voice activated manual control
		120–149	Sound mode
		150–179	Manual control
		180–209	Walk from play
		210–239	Voice activated manual control
		240–255	Sound mode

Mode IPLAY (13CH)

CH	Function	DMX	Description
1	Iplay Mode	0–29	Laser closing
		30–59	Self-propelled manual control
		60–89	Self play
		90–119	Voice operated manual control
		120–149	Voice play
2	Pattern Selection	0–255	Select a pattern at each of the 3 values
3	Pattern Rotation	1–127	Rotation angle selection
		128–159	30 degree rotation speed selection
		160–191	180 degree rotation speed selection
		192–223	Reverse rotational speed selection
		224–255	Selection of normal rotational speed
4	Horizontal Flip Pattern	1–127	Horizontal flip angle selection
		128–159	Horizontal flip speed selection 1
		160–191	Horizontal flip speed selection 2
		192–223	Horizontal flip speed selection 3
		224–255	Horizontal flip speed selection 4
5	Vertical Flip Pattern	1–127	Vertical flip angle selection
		128–159	Vertical flip speed selection 1
		160–191	Vertical flip speed selection 2
		192–223	Vertical flip speed selection 3
		224–255	Vertical flip speed selection 4
6	Horizontal Movement Of Pattern	1–127	Horizontal moving position selection

CH	Function	DMX	Description
7	Vertical Movement Of Pattern	128–159	Horizontal movement speed selection 1
		160–191	Horizontal movement speed selection 2
		192–223	Horizontal movement speed selection 3
		224–255	Horizontal movement speed selection 4
		1–127	Vertical move position selection
8	Pattern Scaling	128–159	Vertical movement speed selection 1
		160–191	Vertical movement speed selection 2
		192–223	Vertical movement speed selection 3
		224–255	Vertical movement speed selection 4
		1–127	Pattern size selection
9	Zoom Size	128–159	Reduced speed options
		160–191	Magnification selection
		192–223	Zoom speed select 1
		224–255	Zoom speed select 2
		1–255	Pattern resizing selection
10	Pattern Drawing	1–127	Plotting speed selection 1
		128–255	Plotting speed selection 2
11	Pattern Point	1–127	Scan speed selection 1
		128–255	Scan speed selection 2
12	Color Mode	0–63	Fixed color selection
		64–95	Color change speed selection 1
		96–127	Color change speed selection 2
		128–159	Color change speed selection 3
		160–191	Flow speed selection 1
		192–223	Flow speed selection 2
		224–255	Rendering speed
13	Motor Grating Disk	0–255	Select raster effects

Mode IPLAY (24CH)

CH	Function	DMX	Description
1	Iplay Mode	0–29	Laser closing
		30–59	Self-propelled manual control
		60–89	Self play
		90–119	Voice operated manual control
		120–149	Voice play
2	Pattern A Selection	0–255	Select a pattern at each of the 3 values
3	Pattern A Rotation	1–127	Rotation angle selection
		128–159	30 degree rotation speed selection
		160–191	180 degree rotation speed selection
		192–223	Reverse rotational speed selection
4	Pattern A Horizontal Flip	224–255	Selection of normal rotational speed
		1–127	Horizontal flip angle selection

CH	Function	DMX	Description
5	Pattern A Vertical Flip	128–159	Horizontal flip speed selection 1
		160–191	Horizontal flip speed selection 2
		192–223	Horizontal flip speed selection 3
		224–255	Horizontal flip speed selection 4
		1–127	Vertical flip angle selection
		128–159	Vertical flip speed selection 1
		160–191	Vertical flip speed selection 2
		192–223	Vertical flip speed selection 3
6	Horizontal Movement Of Pattern A	224–255	Vertical flip speed selection 4
		1–127	Horizontal moving position selection
		128–159	Horizontal movement speed selection 1
		160–191	Horizontal movement speed selection 2
		192–223	Horizontal movement speed selection 3
7	Vertical Movement Of Pattern A	224–255	Horizontal movement speed selection 4
		1–127	Vertical move position selection
		128–159	Vertical movement speed selection 1
		160–191	Vertical movement speed selection 2
		192–223	Vertical movement speed selection 3
8	Pattern A Scaling	224–255	Vertical movement speed selection 4
		1–127	Pattern size selection
		128–159	Reduced speed options
		160–191	Magnification selection
		192–223	Zoom speed select 1
9	Pattern A Zoom Size	224–255	Zoom speed select 2
		1–255	Pattern resizing selection
10	Pattern A Drawing Gradually	1–127	Plotting speed selection 1
		128–255	Plotting speed selection 2
11	Pattern A Point	1–127	Scan speed selection 1
		128–255	Scan speed selection 2
12	Pattern A Color Mode	0–63	Fixed color selection
		64–95	Color change speed selection 1
		96–127	Color change speed selection 2
		128–159	Color change speed selection 3
		160–191	Flow speed selection 1
		192–223	Flow speed selection 2
		224–255	Rendering speed
13	Pattern B Selection	0–255	Select a pattern at each of the 2 values
14	Pattern B Rotation	1–127	Rotation angle selection
		128–159	30 degree rotation speed selection
		160–191	180 degree rotation speed selection
		192–223	Reverse rotational speed selection
		224–255	Selection of normal rotational speed

CH	Function	DMX	Description
15	Pattern B Horizontal Flip	1–127	Horizontal flip angle selection
		128–159	Horizontal flip speed selection 1
		160–191	Horizontal flip speed selection 2
		192–223	Horizontal flip speed selection 3
		224–255	Horizontal flip speed selection 4
16	Pattern B Vertical Flip	1–127	Vertical flip angle selection
		128–159	Vertical flip speed selection 1
		160–191	Vertical flip speed selection 2
		192–223	Vertical flip speed selection 3
		224–255	Vertical flip speed selection 4
17	Horizontal Movement Of Pattern B	1–127	Horizontal moving position selection
		128–159	Horizontal movement speed selection 1
		160–191	Horizontal movement speed selection 2
		192–223	Horizontal movement speed selection 3
		224–255	Horizontal movement speed selection 4
18	Vertical Movement Of Pattern B	1–127	Vertical move position selection
		128–159	Vertical movement speed selection 1
		160–191	Vertical movement speed selection 2
		192–223	Vertical movement speed selection 3
		224–255	Vertical movement speed selection 4
19	Pattern B Scaling	1–127	Pattern size selection
		128–159	Reduced speed options
		160–191	Magnification selection
		192–223	Zoom speed select 1
		224–255	Zoom speed select 2
20	Pattern B Zoom Size	1–255	Pattern resizing selection
21	Pattern B Drawing Gradually	1–127	Plotting speed selection 1
		128–255	Plotting speed selection 2
22	Pattern B Point	1–127	Scan speed selection 1
		128–255	Scan speed selection 2
23	Pattern B Color Mode	0–63	Fixed color selection
		64–95	Color change speed selection 1
		96–127	Color change speed selection 2
		128–159	Color change speed selection 3
		160–191	Flow speed selection 1
		192–223	Flow speed selection 2
		224–255	Rendering speed
24	Motor Grating Disk	0–255	Select raster effects

8 Technical specifications

Parameter	Value
DMX channels	12/15
Power	1500 mW
Dimensions	20 x 23.5 x 17 cm (W x D x H)
Weight	3,6 kg
Laser class	4
Diodes	red 600 mW/638 nm, green 200 mW/532 nm
Scanner	15 kpps

9 Maintenance and cleaning

- Before cleaning and maintenance, switch the device off, disconnect it from the power supply and let it cool down.
- Clean the housing with a soft, dry or slightly damp cloth. Do not use solvents, abrasive cleaners or pressure washers, and make sure no liquid gets into the device.
- Clean optical parts (lenses, front glass), if the device has any, with a soft lint-free cloth and a cleaner intended for optics or glass.
- Regularly inspect the housing, cables, connectors and fixings. Have damaged parts replaced by a service center.
- How often to clean depends on the environment; dust, smoke and fog make the device dirty much faster.

CAUTION

- Keep the laser aperture window clean; dirt scatters the beam and can create unwanted reflections.
- Clean the window only with the laser switched off and disconnected, using a soft lint-free cloth and an optics cleaner. Do not look into the aperture, even while cleaning.

10 Troubleshooting

- The device does not switch on – check the supply voltage, the cables and the fuse, if the device has one.
- The device does not respond to DMX – check the start address, the selected DMX mode and whether it matches the profile in the controller, the cable connection to DMX IN, and the controller output (universe).
- The device behaves erratically or flickers – check the terminator at the end of the line, the condition and wiring of the cables (shield on pin 1 only), the number of devices on the line (32 at most), and that the line is not split without a splitter.
- Only some devices on the line respond – check the cable and connectors between the last working and the first non-working device, and make sure all devices on the line are switched on.
- Devices respond to the wrong channels or affect each other – check that the addresses do not overlap and that the DMX mode on the devices matches the patch in the controller.
- The device or the connected load does not light up although it receives DMX – check the values of the dimmer, shutter and strobe channels against the DMX channel table.

11 Disposal

The crossed-out wheeled bin symbol on the product, in the manual or on the packaging means that the product must not be disposed of with unsorted household waste at the end of its life.

Take the end-of-life equipment to a collection point, for example a municipal collection site or a retailer. Proper disposal enables materials to be recycled and helps prevent possible negative effects on the environment and human health.

Follow the regulations applicable in your country; in the Czech Republic, take-back is governed by Act No. 542/2020 Coll., on End-of-Life Products.

SOH Sound & Lights s.r.o. provides take-back through the collective compliance scheme ASEKOL a.s. (Československého exilu 2062/8, 143 00 Praha 4 – Modřany, www.asekol.cz).

Recycle the packaging materials according to their type.

12 Warranty and service

For products purchased from SOH, a buyer who is a consumer may, under the Czech Civil Code, notify the seller of a defect that becomes apparent within 24 months of taking delivery; this statutory right is not affected by any warranty. Defect claims for these products and out-of-warranty repairs are handled by sending the goods to SOH's premises or bringing them in person: SOH, Antala Staška 242/14, 140 00 Praha 4, Czech Republic. Further information (in Czech) is available at eshop.soh.cz/casto-kladene-otazky.

Statutory rights in respect of defects and the warranty are governed by applicable law and the seller's terms and conditions.

Submit any claim to the seller from whom you purchased the product. Enclose proof of purchase and as precise a description of the fault as possible.

Neither the statutory rights nor the warranty cover defects caused by the buyer, for example by installation or operation contrary to this manual, mechanical damage or unskilled tampering. Wear caused by normal use is not a defect either.

Service and technical support are provided by SOH Sound & Lights s.r.o., Antala Staška 242/14, 140 00 Praha 4.

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