DMX REFERENCE

Sabre High CRI LED Profile

Sabre High CRI LED Profile 550W

SquareLED



Manufacturer	SquareLED
GDTF file	SquareLED_Sabre_High_CRI_LED_Profile_59854.gdtf
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1 About this manual

This document describes the Sabre High CRI LED Profile 550W by SquareLED. It was compiled from the GDTF file SquareLED_Sabre_High_CRI_LED_Profile_59854.gdtf from the GDTF-Share library.

File revision: “19032024-16 added Animation Wheel”.

The DMX modes, the channel functions and the technical data are given as the GDTF file states them. Installation, operation from the device's control panel, service and safety instructions are described in the manufacturer's original user manual, which takes precedence over this document.

This document was not issued or endorsed by SquareLED; product names and trademarks belong to their owners.

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.

> **NOTE** This product is designed for stage and effect lighting. It is not suitable for household room illumination.

2 Quick reference

Parameter	Value
Weight	32 kg

DMX modes

Mode	Channels	Units in one universe	First start addresses
37CH	37	13	1, 38, 75, 112, ...

No light? Check these channels

- 37CH: CH 7 Shutter at 16–30, 136–145, 176–185, 216–225 or 246–255 “Open”; CH 8 Dimmer above 0


Read the manual before use


Do not stare into the light


Indoor use only

3 Safety instructions



Read the manual before use



Do not stare into the light



Indoor use only

⚠ 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.

⚠ CAUTION

- This device emits intense light. Do not look directly into the light source or the beam at close range; doing so may damage your eyes.
- Do not aim the beam at the eyes of people or animals at close range, and do not view the light source through optical instruments (binoculars, camera lenses).
- Do not aim the beam at flammable or heat-sensitive materials at close range.

⚠ CAUTION

- Strobe and fast flashing light effects can trigger epileptic seizures in susceptible people (photosensitive epilepsy) and can cause nausea or disorientation.
- Inform the audience and performers in advance that strobe effects will be used, for example with a notice at the entrance, and do not use them longer than necessary.

⚠ WARNING

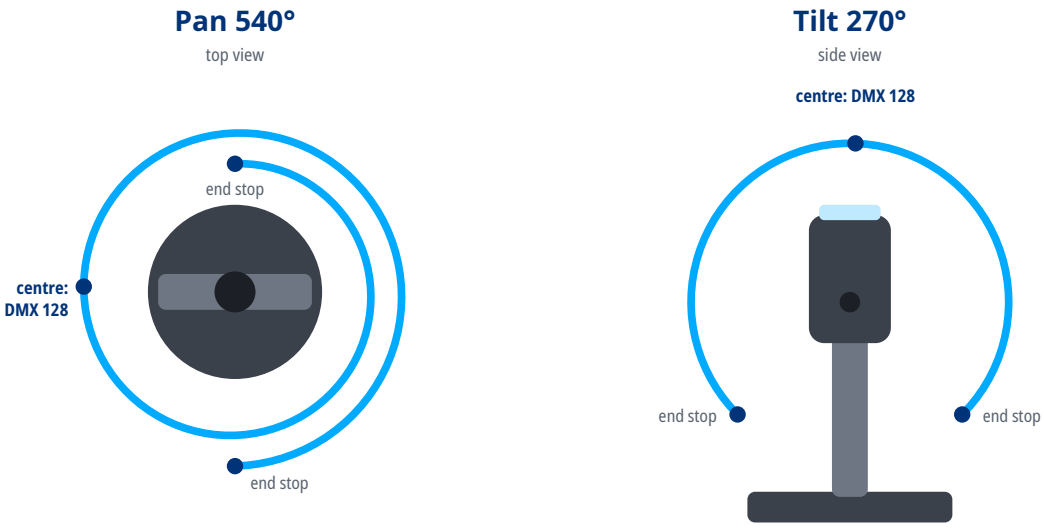
- The moving parts of the device (for example the head or arms) can move quickly and unexpectedly at any time – after power-on, during a reset, or on a command from the controller.
- Keep yourself and any objects out of the range of movement. While the device is switched on, do not touch the moving parts, move them by hand, or obstruct their movement; this can cause injury (pinching) and damage the drive.
- Do not carry the device by its moving parts. If the device has a transport lock, engage it before transport and release it before switching on.

4 Product description

Description in the GDTF file

“Theatereinsätze stellen besonders hohe Anforderungen an Movingheads. Das diese Ansprüche nicht nur europäische Markenhersteller erfüllen können, beweist der SquareLED Sabre mit seiner kompakten Bauform, geringem Gewicht und einem Zoombereich von 4,5 ° - 53,5 ° Dieser LED Movinghead mit 800W Leistungsaufnahme ist mit diversen Features ausgerüstet, welche in dieser Qualität nur in besonders professionellen und hochpreisigen Geräten zu finden sind: Hoher CRI > 90 (optional CRI >70 mit noch höherer Lichtausbeute - Siehe Code 18691), CMY Farbmischsystem + CTO Filter, 2 Bi-directionale Goboräder mit variabler Geschwindigkeit, Autofocus, Zoom, 4-fach Prisma ein drehbares Blendenschiebermodul mit 4 Blenden - jede komplett schließend. Die Goboabbildung ist im kompletten Zoombereich absolut scharf und die Abbildung des Lichtkegels völlig homogen. Weitere Highlights sind ein zusätzliches Farbrad (6 Farben + Weiss), elektronisches Strobe, sowie ein Effektrad. Die Lichtausbeute liegt bei sensationellen 25.200 Lumen Output.”

Range of movement



5 Installation

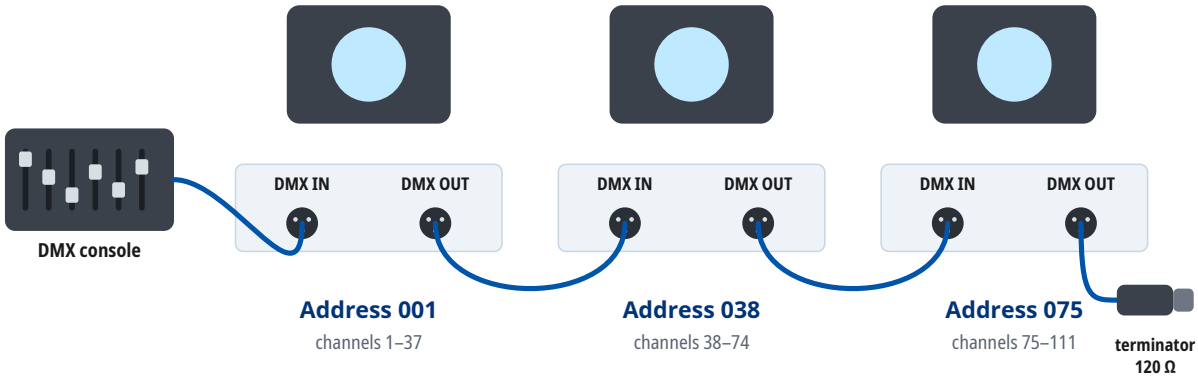
⚠ **WARNING**

- 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: 32 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.

6 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.

DMX line



Mode 37CH: every unit occupies 37 channels from its address. At most 32 units on one line; for more units or longer runs use a DMX splitter. A 120 Ω terminator closes the last DMX OUT.

7 Operation

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 the DMX mode “37CH”: 37.
- 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 the DMX mode “37CH”, you can use, for example, the start addresses 1, 38, 75, 112.
- The DMX mode set on the device must match the fixture profile (personality) used in the controller.

8 Functions at a glance

Functions in each DMX mode

	37CH 37 channels
Pan / Tilt	1, 3
Dimmer	8
Shutter / strobe	7
Color mixing	10–12
Color temperature	13
Color wheel	14
Gobo wheel	15, 18
Gobo rotation	16
Prism	21, 22
Frost	24
Zoom	25
Focus	27
Iris	19
Animation wheel	20

Prism

1

Open
DMX 0–15

2



4 facets
4-facet Prism
DMX 16–255

Gobo wheel 1

1

Rotating Gobo: Open
DMX 0–7

2



Rotating Gobo: Gobo 1
DMX 8–15

3



Rotating Gobo: Gobo 2
DMX 16–23

4



Rotating Gobo: Gobo 3
DMX 24–31

5



Rotating Gobo: Gobo 4
DMX 32–39

6



Rotating Gobo: Gobo 5
DMX 40–47

7



Rotating Gobo: Gobo 6
DMX 48–55

8



Gobo 7
DMX 56–64

Gobo wheel 2

1 Static Gobo: Open
DMX 0–7

2  Static Gobo: Gobo 1
DMX 8–15

3 Static Gobo: Gobo 2
DMX 16–23

4 Static Gobo: Gobo 3
DMX 24–31

5 Static Gobo: Gobo 4
DMX 32–39

6 Static Gobo: Gobo 5
DMX 40–47

7 Static Gobo: Gobo 6
DMX 48–55

8 Gobo 7
DMX 56–64

Color wheel

1 Open
DMX 0–15

2 Red linear
DMX 16–29

3 Blue linear
DMX 30–50

4 Green linear
DMX 51–70

5 Orange linear
DMX 71–91

6 CTB linear
DMX 92–111

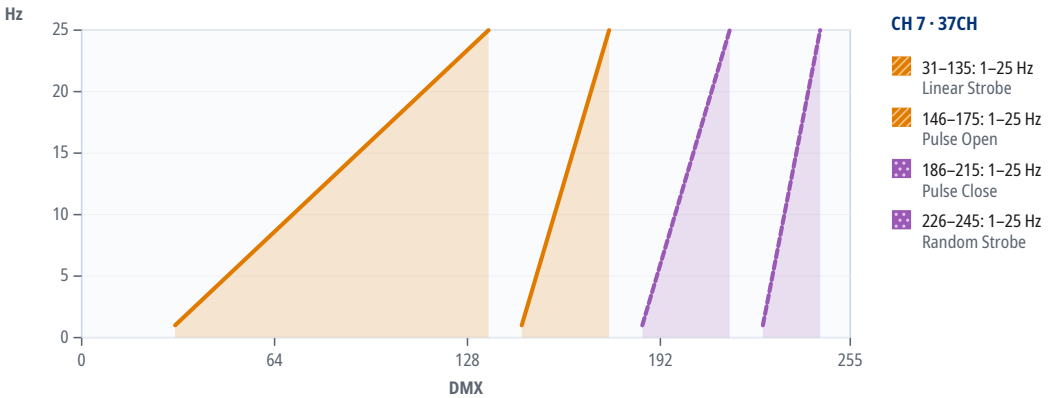
7 UV linear
DMX 112–131

Animation wheel

1 Open

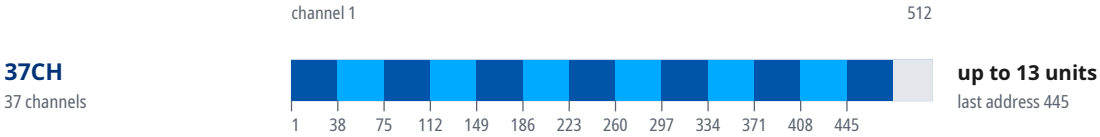
2  Animation

Strobe rate



9 DMX channels

Units in one DMX universe



Start addresses of 20 units in the mode “37CH”

Unit	Start address	Unit	Start address	Unit	Start address	Unit	Start address
1	1	6	186	11	371	16	U2 · 75
2	38	7	223	12	408	17	U2 · 112
3	75	8	260	13	445	18	U2 · 149
4	112	9	297	14	U2 · 1	19	U2 · 186
5	149	10	334	15	U2 · 38	20	U2 · 223

Where a DMX universe is full, the next units continue in the next universe: “U2 · 1” is address 1 in the second universe, counted from the universe of the first unit.

Mode 37CH

16-bit parameters use two channels, coarse and fine: value = 256 × coarse value + fine value.

If the device receives DMX in this mode but gives no light, check these channels: CH 7 Shutter at 16–30, 136–145, 176–185, 216–225 or 246–255 “Open”; CH 8 Dimmer above 0. The GDTF file gives these values for a console's Highlight function: CH 7 Shutter 255, CH 8 Dimmer 255, CH 10 Cyan 0, CH 11 Magenta 0, CH 12 Yellow 0.

Channel functions at a glance



CH	Function	DMX	Description
1	Pan	0–127	Pan 1
		127	Center
		128–255	Pan 1
2	Pan Fine	0–255	Fine adjustment of CH 1
3	Tilt	0–127	Tilt 1

CH	Function	DMX	Description
3	Tilt (continued)	127	Center
		128–255	Tilt 1
4	Tilt Fine	0–255	Fine adjustment of CH 3
5	Speed Pan/Tilt	0–2	Slow
		3–252	Slow ... Fast
		253–255	Fast
6	Special Function	0–255	
7	Shutter	0–15	Shutter: Closed
		16–30	Shutter: Open
		31–35	Linear Strobe: Slow
		36–130	Linear Strobe: Slow ... Fast
		131–135	Linear Strobe: Fast
		136–145	Open
		146–147	Pulse Open: Slow
		148–173	Pulse Open: Slow ... Fast
		174–175	Pulse Open: Fast
		176–185	Open
		186–187	Pulse Close: Slow
		188–213	Pulse Close: Slow ... Fast
		214–215	Pulse Close: Fast
		216–225	Open
		226–227	Random Strobe: Slow
		228–243	Random Strobe: Slow ... Fast
		244–245	Random Strobe: Fast
		246–255	Open
8	Dimmer	0–255	
9	Dimmer Fine	0–255	Fine adjustment of CH 8
10	Cyan	0–255	Cyan
11	Magenta	0–255	Magenta
12	Yellow	0–255	Yellow
13	CTO	0–255	
14	Colors	0–15	Open
		16–29	Red linear
		30–50	Blue linear
		51–70	Green linear
		71–91	Orange linear
		92–111	CTB linear
		112–131	UV linear
		132–141	Red static
		142–151	Blue static
		152–161	Green static
		162–171	Orange static

CH	Function	DMX	Description
14	Colors (continued)	172–181	CTB static
		182–191	UV static
		192–222	Cycle CW
		223–224	Stop
		225–255	Cycle CCW
15	Gobo 2	0–7	Rotating Gobo: Open
		8–15	Rotating Gobo: Gobo 1
		16–23	Rotating Gobo: Gobo 2
		24–31	Rotating Gobo: Gobo 3
		32–39	Rotating Gobo: Gobo 4
		40–47	Rotating Gobo: Gobo 5
		48–55	Rotating Gobo: Gobo 6
		56–63	Rotating Gobo: Gobo 7
		64–95	CW (5–0 °/s)
		96–97	Wheel Spin: Stop
		98–129	CCW (0–5 °/s)
		130–147	Gobo Shake: Gobo 1
		148–165	Gobo Shake: Gobo 2
		166–183	Gobo Shake: Gobo 3
		184–201	Gobo Shake: Gobo 4
		202–219	Gobo Shake: Gobo 5
		220–237	Gobo Shake: Gobo 6
		238–255	Gobo Shake: Gobo 7
16	Gobo 2 Rotation Speed	0–255	
17	Gobo 2 Rotation Speed Fine	0–255	Fine adjustment of CH 16
18	Gobo	0–7	Static Gobo: Open
		8–15	Static Gobo: Gobo 1
		16–23	Static Gobo: Gobo 2
		24–31	Static Gobo: Gobo 3
		32–39	Static Gobo: Gobo 4
		40–47	Static Gobo: Gobo 5
		48–55	Static Gobo: Gobo 6
		56–63	Static Gobo: Gobo 7
		64–95	CW
		96–97	Wheel Spin: Stop
		98–129	CCW
		130–147	Shake: Gobo 1 (0–2 Hz)
		148–165	Shake: Gobo 2 (0–2 Hz)
		166–183	Shake: Gobo 3 (0–2 Hz)
		184–201	Shake: Gobo 4 (0–2 Hz)
		202–219	Shake: Gobo 5 (0–2 Hz)
		220–237	Shake: Gobo 6 (0–2 Hz)

CH	Function	DMX	Description
18	Gobo (continued)	238–255	Shake: Gobo 7 (0–2 Hz)
19	Iris	0–1	Open
		2–134	Open ... 50%
		135	50%
		136–253	50% ... 5%
		254–255	5%
20	Animation Wheel	0–15	Open
		16–17	Max CW
		18–133	Max CW ... Min CW
		134–135	Min CW
		136–137	Min CCW
		138–253	Min CCW ... Max CCW
		254–255	Max CCW
21	Prism	0–15	Open
		16–255	4-facet Prism
22	Prism Rotation Speed	0	Autorotation
		0	Rotation Clockwise
		0	Rotation Counterclockwise
		1–255	Prism 1 Pos Rotate 1
23	Prism Rotation Speed Fine	0–255	Fine adjustment of CH 22
24	Frost	0–15	Open
		16–99	Frost 1 linear
		100–127	Frost 1 static
		128–227	Frost 2 linear
		228–255	Frost 2 static
25	Zoom	0–127	Min ... Med
		127	Med
		128–255	Med ... Max
		255	Max
26	Zoom Fine	0–255	Fine adjustment of CH 25
27	Focus	0–255	Focus
28	Focus Fine	0–255	Fine adjustment of CH 27
29	Blade Rotation	0–1	-45deg
		2–126	-45deg ... Center
		127	Center
		128–253	Center ... 45deg
		254–255	45deg
30	Blade 1 A		Upper Frame A
		0–255	Upper Frame A
31	Blade 1 B		Upper Frame B
		0–255	Upper Frame B
32	Blade 2 A		Left Frame A

CH	Function	DMX	Description
32	Blade 2 A (continued)	0–255	Left Frame A
33	Blade 2 B		Left Frame B
		0–255	Left Frame B
34	Blade 3 A		Below Frame A
		0–255	Below Frame A
35	Blade 3 B		Below Frame B
		0–255	Below Frame B
36	Blade 4 A		Right Frame A
		0–255	Right Frame A
37	Blade 4 B		Right Frame B
		0–255	Right Frame B

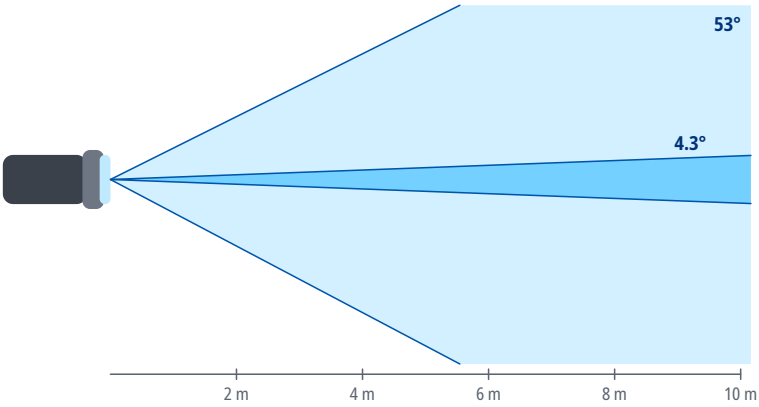
10 Technical specifications

Parameter	Value
Light	
Light source	LED
LED power	550 W
Luminous flux	25,200 lm
Color temperature	6,100 K
Color rendering index (CRI)	100
Optics	
Zoom	4.3–53°
Movement	
Pan	540°
Tilt	270°
Dimensions and construction	
Weight	32 kg
Operating environment	
Operating temperature	0 to 45 °C

Speeds and ranges

Parameter	Value
Strobe frequency	1–25 Hz
Gobo wheel 1 rotation	up to 5 °/s (0.8 rpm)
Gobo wheel 2 rotation	up to 5 °/s (0.8 rpm)

Spot diameter



Distance	Ø 4.3°	Ø 53°
2 m	0.15 m	2 m
4 m	0.3 m	4 m
6 m	0.45 m	6 m
8 m	0.6 m	8 m
10 m	0.75 m	10 m
15 m	1.1 m	15 m

Spot diameter square to the beam axis, calculated from the beam angle.

11 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.

12 Troubleshooting

Problem	Remedy
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. For the DMX modes for which the sources state it, the chapter DMX channels gives under the mode's heading which channels must be open.
Movement is reversed	Check whether Pan/Tilt inversion is enabled in the device menu or in the controller.
Moving parts do not reach the correct position after power-on or transport	Switch the device off and on again to reset the position, and make sure the transport lock, if any, is released. If this does not help, contact a service center.
Movement is jerky	Check the value of the Pan/Tilt speed channel, if the device has one, and the stability of the DMX signal.

13 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.

Recycle the packaging materials according to their type.