



OWNER'S KIT · REV A · OCTOBER 2026



PIXEL ROPE SYSTEM

LUMIROPE 360

22MM BLACK · OPERATOR GUIDE

How to power, connect, rig, run and care for your LumiRope 360 pixel rope, PXL-CTRL-4 controllers, NL4 feeders and rigging rings.

● DO

● CAUTION

● NEVER

● DATA + INPUT

● POWER ONLY + OUTPUT

SUPPLIED & SUPPORTED BY



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READ THIS FIRST

Your LumiRope system is touring grade, and it is also low voltage electronics. Five minutes on this page prevents almost every failure we see.

THE COLOUR CODE

Used the same way on every page, label and diagram in this guide.

 GREEN	 AMBER	 RED	 BLUE	 GREY
DO · safe · normal	CAUTION · check first	NEVER · stop · power (+24 V and AC)	DATA · the rope INPUT end	POWER ONLY · the rope OUTPUT end

EIGHT RULES THAT PROTECT THE GEAR AND THE CREW

× NEVER

Never make or break an NL4 with power on

Switch the controller off (pull its TRUE1), and any power injector, before you plug or unplug any feeder or rope.

× NEVER

Never bend tighter than 50 mm (2 in)

Measured to the centreline of the rope. Kinks crack the pixel board inside.

× NEVER

Never hang the rope by its leads

Weight goes on rigging rings only. Leads, connectors and end caps carry nothing.

× NEVER

Never cut, pierce or modify the rope

The ends are sealed. A cut or pierced rope loses its seal and its IP67 rating.

! CAUTION

The rope is IP67. The connectors are not.

NL4 joints and controller plates must stay dry, off the ground and out of standing water.

! CAUTION

Longer than 5 m means two feeds

Every piece over 5 m gets power at both ends. See page 8.

! CAUTION

Rigging is for qualified riggers

Follow the venue and local rigging rules. Use secondary safeties.

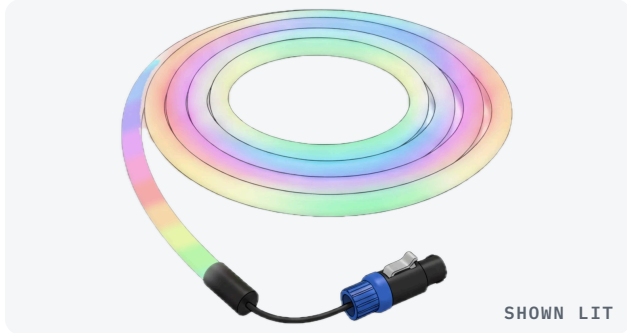
✓ DO

Test on the ground first

Light every piece at full white and in red, green and blue before it flies.

WHAT'S IN THE KIT

Four parts make the whole system. Everything plugs together with the same NL4 connector, so there is only one cable type to learn.



LUMIROPE 360 22MM BLACK

The light.

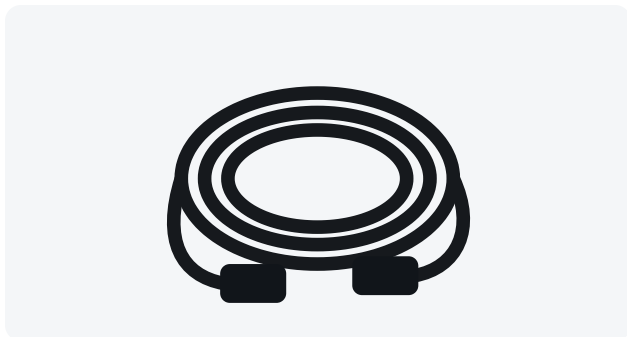
- WS2811 RGB pixels, 20 per metre
- 24 VDC, full 360° glow
- Black jacket, IP67
- NL4 lead at each end



PXL-CTRL-4 CONTROLLER

The brain and the power.

- Network data in, pixel data out
- 600 W, 24 VDC supply inside
- 4 powered NL4 outputs
- TRUE1 power in + thru



NL4 FEEDER

Carries power and data to the rope.

- 16/3 SJOOW rubber cable
- speakON NL4 plug each end
- Joins with an NL4 coupler
- 10 ft or 20 ft lengths



RIGGING RING

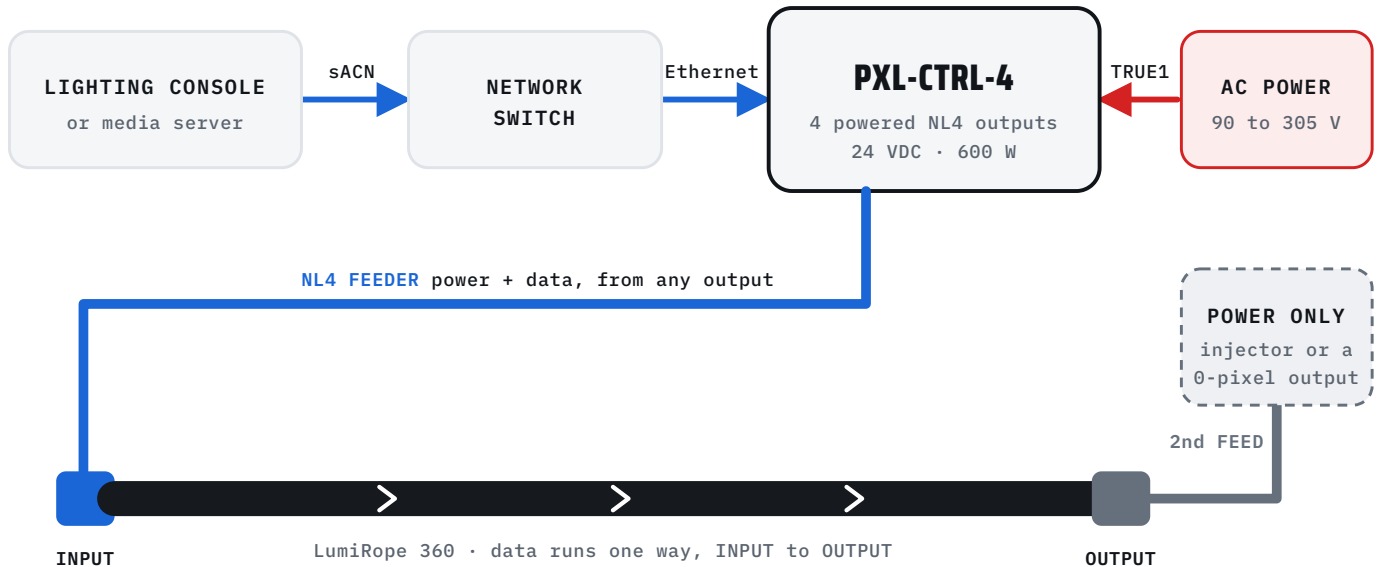
Holds the rope at a pick point.

- Collar clamps the 22 mm rope
- Eye each side for rigging
- 2 x M6 cap screws
- 5 mm hex key

Also in your kit: NL4 couplers (barrels) for joining two plugs, and road cases with a home for every piece. Keep the 5 mm hex key with the rings.

HOW IT FITS TOGETHER

One pixel output drives one rope. Data always enters at the INPUT end and travels toward the OUTPUT end.



1

Data

Your console sends sACN over the lighting network. Each controller listens for its own universes.

2

Power

AC comes in on TRUE1. The 600 W supply inside makes 24 VDC for the rope.

3

Output

Each NL4 output sends 24 V and pixel data down one feeder to one rope INPUT end.

4

Second feed

Longer pieces also get power at the OUTPUT end, from a power-only source.

× NEVER

Never feed the OUTPUT end from an output that is driving another rope

A second feed must be power only: a power injector, or a controller output set to 0 pixels.

LUMIROPE 360 22MM

A black silicone rope that reads as plain cable when off and glows full colour from every angle when on.

20 px/m PIXELS PER METRE	24 VDC INPUT VOLTAGE	23 W/m FULL WHITE, MEASURED
0.96 A/m FULL WHITE, MEASURED	50 mm PIXEL PITCH	IP67 ROPE BODY
360 ° BEAM ANGLE	0.42 kg/m WEIGHT, PLUS LEADS	WS2811 RGB PIXEL IC

READING THE END LABELS

Every rope carries a label at each end, on the lead just behind the connector.

1 INPUT	2 10M-01 3 10 m · 32 ft 10 in 200 px · 20 px/m 4 WS2811 RGB 24 VDC · 23 W/m	SLM
OUTPUT	10M-01 10 m · 32 ft 10 in 200 px · 20 px/m WS2811 RGB 24 VDC · 23 W/m	SLM

- 1. INPUT or OUTPUT:** which end you are holding. Data goes in at INPUT.
- 2. Piece number:** the same number is on both ends of the same rope.
- 3. Length and pixel count:** pixels = metres x 20.
- 4. Electrical spec:** pixel type, voltage and full-white power.



DO Pixel 1 is always at the INPUT end
Patch and program from INPUT toward OUTPUT.

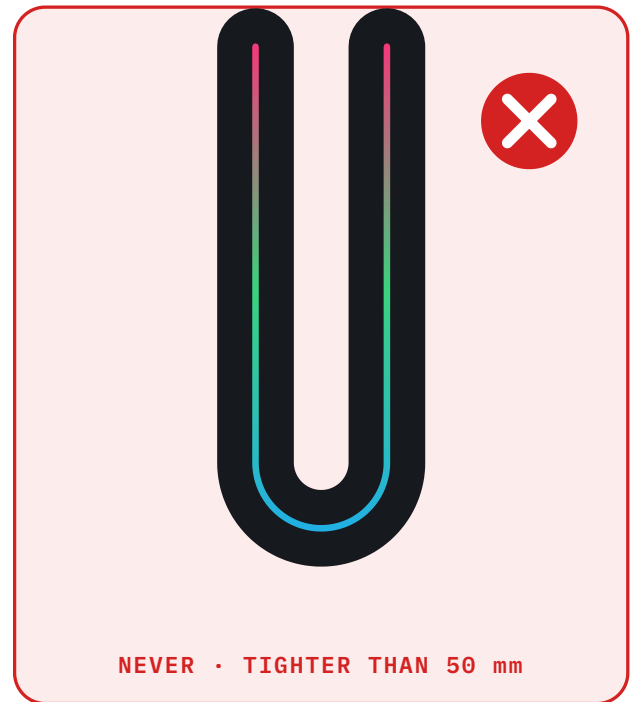
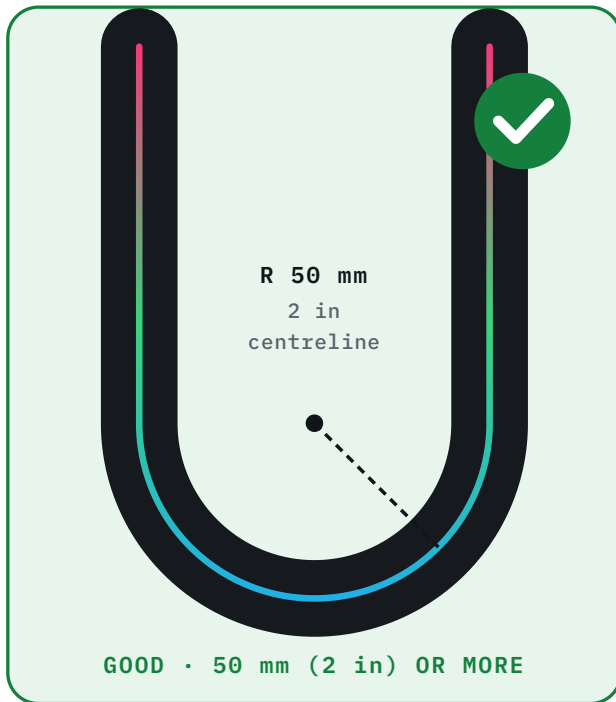


CAUTION Black jacket, hot stage

The rope is dark and absorbs heat in direct sun. Keep it off hot surfaces and lamps.

HANDLING THE ROPE

Most rope damage happens on the ground, not in the air. Treat it like a fibre optic cable: gentle curves, no kinks, no weight on the ends.



✓ DO Unroll it like a hose

Roll the coil along the floor to pay it out. Pulling loops off the side puts a twist in every turn.



✓ DO Coil in big, loose loops

About 21 in (530 mm) across, the same donut it ships in. Velcro, never tape or tight ties.



✓ DO Carry by the coil

Support the coil, not the leads. A 10 m piece weighs about 9 to 10 lb.



✗ NEVER Never step on it, roll a case over it or pinch it in a truss clamp



✗ NEVER Never drag it, or drag a connector across the deck



✗ NEVER Never twist the rope to make it lie flat

Rotate the coil instead. Twists come back as kinks.

PXL-CTRL-4 CONTROLLER

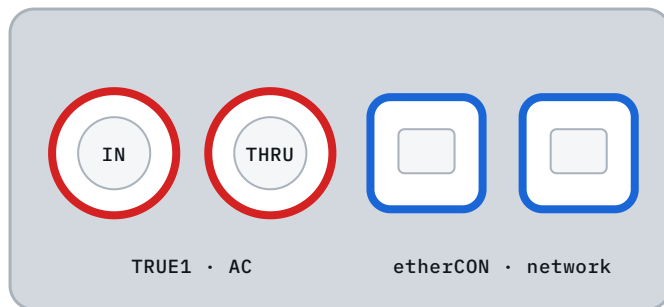
One box takes AC power and network data in, and sends 24 V power and pixel data out on four NL4 outputs.



An Advatek PixLite A4-S Mk3 pixel controller and a Mean Well 600 W, 24 V supply, in a hard case with stainless connector plates.

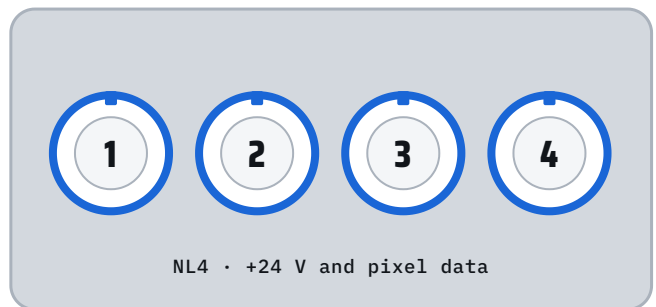
Smart fusing, nothing to replace. Each output has electronic protection. If it trips, it resets itself once the fault is cleared. There are no fuses inside to change.

LEFT PLATE • POWER + NETWORK



IN AC from the circuit **THRU** AC on to the next box
NET either jack, the second one links to the next box

RIGHT PLATE • OUTPUTS



OUT 1 to 4 one rope feed per output
 7 A max per output • schematic, not to scale

7 A MAX PER OUTPUT	25 A MAX ALL OUTPUTS, 600 W	600 W 24 V SUPPLY	90-305 VAC AC INPUT	-20 to 70 °C OPERATING
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! CAUTION

Not rated for rain

Keep the lid latched, keep the box covered and out of standing water, and shade it from direct sun. It runs warm at full load.

× NEVER

Never open the case

Mains voltage inside. Service by KG3 only.

POWER AND FEEDING

Pixel rope drops voltage along its length. Feeding both ends of a long piece keeps the colour even and keeps every output inside its limit.

THE FEED RULE

5 m OR SHORTER
one feed



LONGER THAN 5 m
feed BOTH ends



10 m and 11 m pieces always take two feeds

NL4 PIN USE

1+ **+24 V**
red conductor

1- **DATA**
yellow conductor

2- **GROUND (0 V)**
black conductor

2+ **not used**

The same on every feeder, rope lead and output. Power-only feeds use the same pins.

LOAD AT FULL WHITE

PIECE	PIXELS	FULL WHITE	POWER	PER FEED	FEED
1 m	20	0.96 A	23 W		per metre
5 m	100	4.8 A	115 W	4.8 A	☒ INPUT ONLY
10 m	200	9.6 A	230 W	4.8 A x 2	☒ BOTH ENDS
11 m	220	10.6 A	253 W	5.3 A x 2	☒ BOTH ENDS

! CAUTION

Budget per output

Plan no more than 5.6 A (80% of 7 A) on any one output.

! CAUTION

Budget per controller

Plan no more than 480 W, about 20 m of rope at full white, on one box.

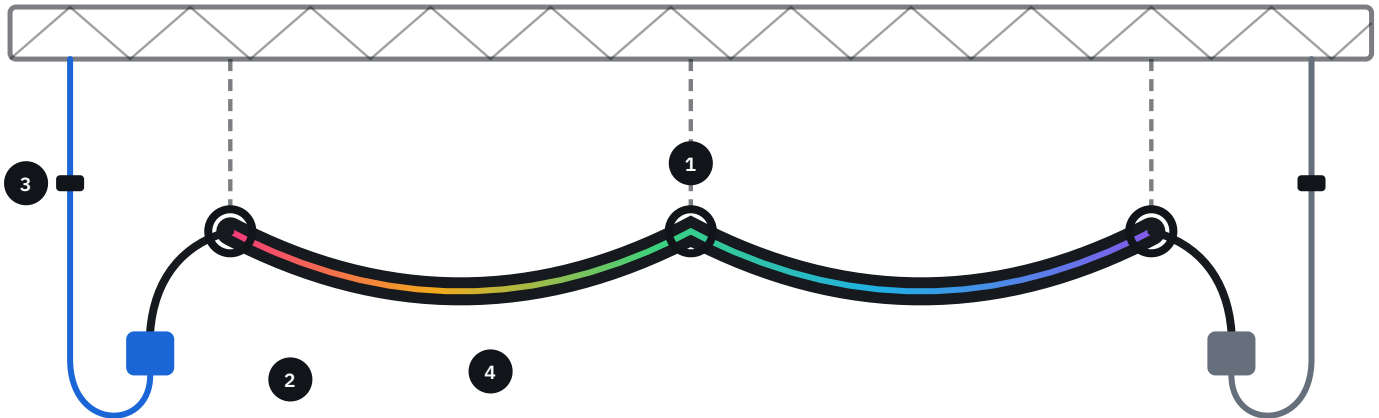
! CAUTION

Budget per AC circuit

Allow 700 W per box. On a 20 A circuit loaded to 80%: 2 boxes at 120 V, 4 boxes at 208 V.

RIGGING

The rope is light, about 0.42 kg per metre, but it is not a rigging cable. Rings carry it, everything else hangs free.



1. **Rings take the weight.** Three rings per 10 m or 11 m piece: one close to each end, one in the middle. Shorter pieces: one close to each end. Your rigging plan sets the exact points.
2. **Service loop at each end.** Leave the lead in a relaxed loop below the ring, never pulled tight.
3. **Tie off every NL4 joint** to the truss with tie-line, so no connector hangs on a lead.
4. **Gentle sag only.** Keep every curve, including at the rings, to 50 mm (2 in) radius or more.



DO Fitting a ring

Open the collar, seat the rope, then tighten the two M6 cap screws evenly with the 5 mm hex key. Stop when the ring will not slide under the rope's own weight. Firm, not forced.



NEVER Never crush the jacket

If the rope bulges or flattens at the collar, back the screws off. Over-tightening damages the pixels under the ring.



CAUTION Rings hold the rope only

Never hang anything else from a ring. Use rated rigging hardware and a secondary safety at every pick, per venue rules.

CONTROLLER SETUP

Your console only needs to know each controller's IP address and universes. Everything else lives inside the box.

TYPICAL SETTINGS

PROTOCOL	sACN (E1.31)
PIXEL IC	WS2811
COLOUR ORDER	RGB, confirm with a test
DATA SPEED	800 kHz
PIXELS PER UNIVERSE	170 (510 channels)
PIXELS PER OUTPUT	rope metres x 20
PIXEL 1	at the rope INPUT end
NETWORK	static IP, one unique address per box
FIRMWARE	PixLite Mk3 3.15.0 as shipped

CHANGING A SETTING

1. Connect a laptop to the same network switch.
2. Open **Advatek Assistant** (free, Mac and Windows). It finds every PixLite on the network.
3. **Save a backup** of the controller's settings before you touch anything.
4. Change only what you need: IP address or start universe.
5. Save to the controller, then run the test pattern.



Test pattern reads red, green, blue

If red and green swap, fix the colour order on the controller output. Never fix it in the console patch.



Run it as delivered

Each box ships set up and labelled. Change settings only when your show needs it, and back up first.



Never update firmware during a show period

Firmware changes are a bench job. Ask KG3 first.

Running without a console? The controller can play a stored show from its microSD card. Ask KG3 to set this up.

CHECKLISTS

Tick these off every time. They take minutes and catch nearly every problem before an audience does.

BEFORE IT FLIES

- ☐ Jacket: no cuts, flat spots or kinks
- ☐ End caps and leads intact
- ☐ NL4 plugs clean, latch with a click
- ☐ Rings fitted and snug, not crushing
- ☐ Piece lights at full white end to end
- ☐ Red, green, blue each look correct

POWER UP

- ☐ All NL4 joints made with power OFF
- ☐ Network cable in, switch powered
- ☐ Console sending, or blackout set
- ☐ Apply AC to each controller and injector
- ☐ Run a low level test, then full white
- ☐ Walk every piece: no dark pixels

SHUT DOWN

- ☐ Blackout from the console
- ☐ Remove AC from each controller and injector
- ☐ Wait for the rope to go fully dark
- ☐ Only now disconnect NL4 feeders

EVERY DAY OF THE RUN

- ☐ Look for rub points on truss edges
- ☐ Check connectors are dry and tied off
- ☐ Check rings have not slipped
- ☐ Look for any dim or flickering section

TROUBLESHOOTING

Start with the simplest thing. Nine times out of ten it is a connector or a setting.

YOU SEE	CHECK, IN THIS ORDER
A whole rope is dark	Is the controller powered? Is the feeder latched at both ends? With AC off, swap in a known good feeder or move to another output.
Rope lit but ignores the console	Network link light on? Controller IP on the same subnet? Universe in the console matches the controller?
Red and green are swapped	Colour order on that controller output. Fix it there, never in the patch.
Dark from one point onward	Data stops at that pixel. Check the rope for damage at that spot. Do not cut it. Call KG3.
Far end dim or warm at full white	Whites turn orange or pink toward the end: the OUTPUT end has no power. Check the second feed and its connectors.
Flicker or random colours	A loose or wet NL4 joint, or a damaged feeder. With AC off: reseal, dry, or swap the feeder.
An output keeps shutting off	Too much load or a short. With AC off, unplug the rope, inspect the feeder, check the load is under 7 A. It resets on its own.



Swap, then diagnose

During a show, kill AC to that box, swap the feeder or move to a spare output, then power up. Find the cause afterwards.



Never open a rope, connector or controller

There are no user-serviceable parts. Tag it, set it aside and call KG3.

CALLING KG3? HAVE THIS READY

1

The piece number from the rope label

2

The controller label and output number

3

What you see, and when it started

4

A photo or short video of the fault

CARE, STORAGE AND TRANSPORT

Looked after, LumiRope lasts for years of touring. Most of that is simply keeping it dry, clean and loosely coiled.

CLEAN

Wipe the jacket with a damp cloth and mild soap. Let it dry fully before coiling.

✗ NEVER

No solvents, alcohol or pressure washers

STORE

Indoors, dry, out of direct sun. Coiled loosely in its 21 in donut, lying flat. Nothing heavy stacked on the coils.

! CAUTION

Dry connectors before casing

Moisture trapped in an NL4 corrodes the contacts.

TRANSPORT

Pack it the way it arrived. Every piece has a home in the road cases, so nothing rides loose.

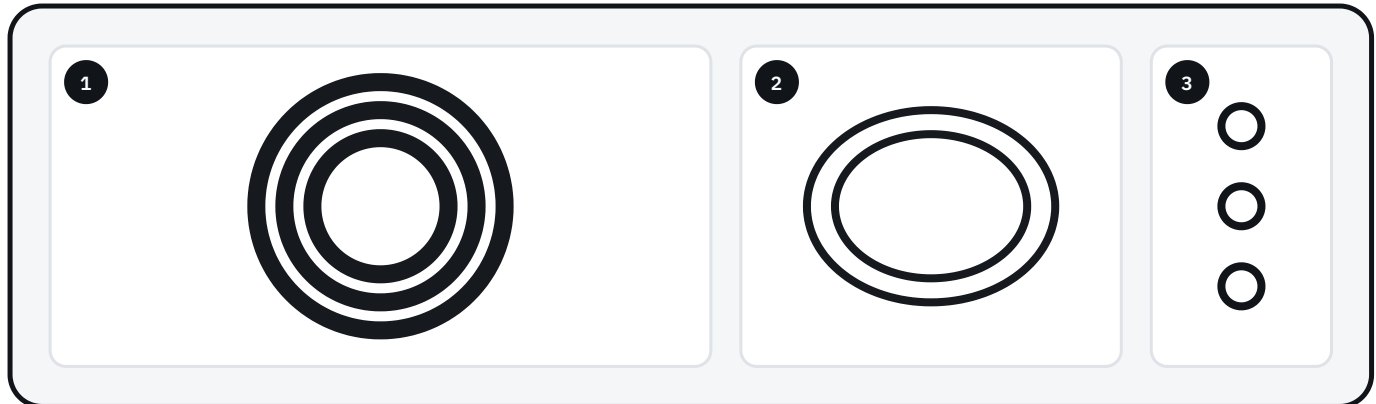
✓ DO

Photograph each case when it arrives

The photo is the best packing guide you will ever have.

PACKING A ROPE CASE

Typical layout. Your cases may differ, so follow the photo you took on arrival.



ROPE BAY • flat coils

CABLE BAY • feeders

TROUGH

1. Rope coils lie flat in the rope bay, leads tucked into the middle of each coil.
2. Feeders coiled over-under, in the cable bay.
3. Rings, hex key and NL4 couplers together in the trough.
4. Controllers in their own space, lids latched, never under rope.

SUPPLIED & SUPPORTED BY



Custom LED lighting and scenic fabrication, Nashville, Tennessee.
Questions, repairs, more rope or a hand on site: talk to us.

EMAIL

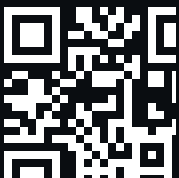
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