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THORLABS

ADAL2 - October 11, 2016

Item # ADAL2 was discontinued on October 11, 2016. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

INTERCONNECTS AND MATING SLEEVES FOR FIBER OPTIC CANNULAE

- **Connect Optogenetics Patch Cables and Cannulae**
- **Quick-Release Interconnects Allow Simple, Low-Force Connections**
- **Lightweight (0.18 g) Ceramic Split Mating Sleeves**

ADAF2 Quick-Release Interconnect Mating a Ø400 µm Core Multimode Fiber and Ø2.5 mm Cannula

ADAL2
Interconnect for Ø1.25 mm Ferrules

ADAF2
Interconnect for Ø2.5 mm Ferrules

ADAF1
Ø2.5 mm Ceramic Mating Sleeve

ADAL1
Ø1.25 mm Ceramic Mating Sleeve

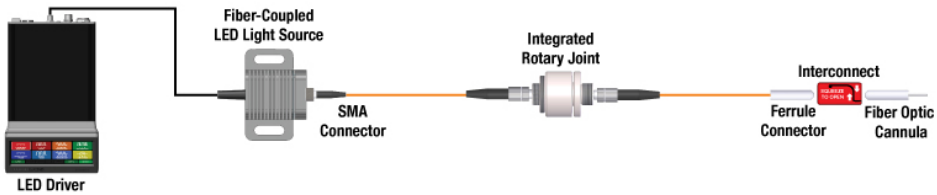
Hide Overview

OVERVIEW

Thorlabs offers interconnects and mating sleeves for making connections between our line of optogenetics patch cables and fiber optic cannulae. These ferrule-mating components provide low-loss coupling and are compatible with both stainless steel and ceramic (zirconia) ferrules. Interconnects are designed to facilitate easy connections and disconnections from an implanted cannula, requiring >80% less force to disconnect compared to mating sleeves. On the other hand, mating sleeves are preferred for very lightweight (~0.18 g), low-profile connections between a patch cable and cannula.

Interactive Optogenetics System Schematic

Click on the components or labels for more details about our optogenetics line of products. Contact Tech Support for more information about our expanding line of optogenetics products.



Optogenetics Selection Guide								
Optogenetics Overview	Fiber Optic Cannulae	Rotary Joint Patch Cables	Standard Patch Cables	Interconnect and Mating Sleeves	2x2 Fiber Couplers	LED Light Sources	Laser Light Source	Optogenetics Starter Kit

Hide Interconnect Usage

INTERCONNECT USAGE

This tab contains instructions for using an interconnect to mate an optogenetics patch cable with a Ø1.25 mm or Ø2.5 mm ferrule to a cannula. Please see the animation below for an illustration of the installation process detailed here.

Connecting the Patch Cable
Insert the patch cable ferrule into the interconnect on the side with the stainless steel setscrew. To secure the patch cable, use the included hex key [ADAL2: 0.028"; ADAF2: 0.05" (1.3 mm)] to tighten the setscrew onto the inserted ferrule.

- Ensure that the patch cable ferrule tip is clean and free of dust; we recommend the CA3 duster.
- For best results, the patch cable should be inserted past the setscrew and about halfway into the ceramic mating component within the interconnect.

Connecting the Cannula
To connect to a cannula, gently squeeze the interconnect from both sides where indicated by the engraving, then insert the cannula ferrule into the open end until physical contact with the patch cable ferrule is achieved. To lock the cannula in place, simply let go of the interconnect.

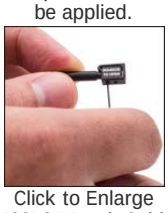
- Check that the ferrule tip of the cannula is clean and free of dust.
- If the cannula is already implanted or glued into position, adjust the cable-side ferrule, if necessary, to ensure physical contact between the ferrules.
- When using the dual core cannula and patch cable, please note the orientation of the patch cable for alignment purposes.

Disconnecting the Cannula and Patch Cable
To disconnect the interconnect from a cannula, squeeze the interconnect and gently pull the interconnect until disconnected from the cannula. The patch cable can be released by loosening the setscrew with the included hex key.

Hide Quick-Release Interconnects

Quick-Release Interconnects


Click to Enlarge
Interconnects are easily operated using a single hand and are engraved to indicate where pressure should be applied.


Click to Enlarge
M89L01 Patch Cable Secured in ADAL2 Using 0.028" Hex Key

- Interconnect Mates Ø1.25 mm or Ø2.5 mm Ferrule Patch Cable and Cannula
- Quickly Secure and Disconnect Ferrule with One-Handed Squeeze Operation
- Low-Force (<4.4 N) Disconnections Minimize Stress on Specimen
- Light-Tight Housing Prevents Light Leakage
- Constructed from Virtually Nonmagnetic Materials
- Lightweight (1 g)

Thorlabs' Quick-Release Interconnects are an easy-to-use and reliable solution for mating optogenetics patch cables and cannulae. These interconnects offer <1.0 dB (<21%) insertion loss and feature a light-tight housing that minimizes light leakage at the interconnect interface, preventing stray light from distracting a specimen. The quick-release mechanism requires >80% less force to connect or disconnect compared to mating sleeves, significantly reducing stress on a specimen when mating to a patch cable. As shown in the photo to the left, the interconnects can be operated using a single hand which ensures hassle-free mating to an implanted cannula.

As seen in the animation to the right using the ADAF2 as an example, an interconnect holds a patch cable ferrule on one end using a cup-point setscrew that does not damage the ferrule surface, and holds a cannula on the other end using a quick-release squeeze mechanism. First, insert a patch cable ferrule into the interconnect and secure by tightening the setscrew using the included hex key [ADAL2: 0.028"; ADAF2: 0.05" (1.3 mm)], as seen in the image to the lower left. Then, squeeze the quick-release lever and insert the cannula until it makes physical contact with the ferrule. Finally, release the lever to lock the cannula into place. The interconnects are engraved to indicate where squeeze pressure should be applied. To release the cannula (or disconnect from an implanted cannula), squeeze the quick-release lever and pull the interconnect away from the cannula; only light force is needed to disconnect the interconnect. Please see the *Interconnect Usage* tab above for additional guidelines.

These interconnects are designed to be used with our optogenetics patch cables and cannulae and are not intended for use with patch cables terminated with standard connectors.

Item #	Compatible Ferrule Size	Insertion Loss	Length	Weight	Disconnect Force[b]
ADAL2	1.25 mm Outer Diameter	<1.0 dB Typical Loss (Multimode)[c]	9.4 mm	0.4 g	<4.4 N (<1.0 lbf) Typical[d]
ADAF2	2.5 mm Outer Diameter	<1.0 dB Typical Loss (Multimode)[e]	13.6 mm	1 g	<4.4 N (<1.0 lbf) Typical[f]

a • Force needed to disconnect a ferrule when the quick-release mechanism is not engaged.
b • Force needed to disconnect a ferrule when the quick-release mechanism is engaged.
c • Tested using Ø200 µm core, 0.22 NA multimode fiber and an LED source at 532 nm.
d • Tested using a Ø1.25 mm FC/PC-type ferrule.
e • Tested using Ø400 µm core, 0.39 NA multimode fiber and an LED source at 532 nm.
f • Tested using a Ø2.5 mm FC/PC-type ferrule.

Part Number	Description	Price	Availability
ADAL2	Customer Inspired!Quick-Release Interconnect for Ø1.25 mm Ferrules	$40.00	Lead Time
ADAF2	Customer Inspired!Quick-Release Interconnect for Ø2.5 mm Ferrules	$30.00	Today

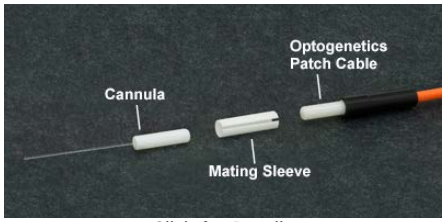
Hide Ceramic Mating Sleeves

Ceramic Mating Sleeves

Click to Enlarge
ADAF1 Mating Sleeve with Optogenetics Patch Cable and Cannula

- Ceramic Mating Sleeves for Ø1.25 mm and Ø2.5 mm Ferrules
- Connect Optogenetics Patch Cables and Cannulae
- Very Lightweight (~0.18 g)
- Sold Individually or in Packs of 5

The ADAL1 and ADAF1 ceramic (zirconia) mating sleeves are perfect for connecting our optogenetics patch cables with ferrule connectors to our implantable fiber optic cannulae (see photo to the right). Additionally, they are capable of connecting any terminated fiber with a Ø1.25 mm or Ø2.5 mm ferrule, such as LC/PC, FC/PC, ST®/PC, and SC/PC connectors.



Click for Details
In the photo above, the ADAF1 is used to connect a cannula with a 2.5 mm ferrule to the ferrule end of a M81L01 patch cable.

This mating sleeve is compatible with both stainless steel and ceramic patch cables and cannulae. Cannulae and patch cables with different ferrule materials can be mixed and matched without significant additional signal losses.

These mating sleeves are available individually or in packages of five at a significant savings over the individual price.

Item #	Compatible Ferrule Size	Insertion Loss	Length	Weight	Disconnect Force	Material
ADAL1	1.25 mm Outer Diameter	<0.5 dB Typical (Single Mode)[a] <1.0 dB Typical (Multimode)[b]	6.8 mm	0.18 g	11.4 N (2.6 lbf) Max[c] 7.2 N (1.6 lbf) Typical[c]	Ceramic (Zirconia)
ADAF1	2.5 mm Outer Diameter	<0.2 dB Typical (Single Mode)[d] <1.0 dB Typical (Multimode Fiber)[e]	11.4 mm	0.18 g	53 N (12 lbf) Max[f] 25 N (5.6 lbf) Typical[f]	

a • Tested using SM600 fiber at 635 nm with LC/PC connectors.
b • Tested using Ø200 µm core, 0.39 NA multimode fiber with LC/PC connectors and an LED source at 617 nm.
c • Tested using an LC/PC-type ferrule.
d • Tested using SMF28 fiber at 1550 nm with FC/PC connectors.
e • Tested using Ø200 µm core, 0.39 NA multimode fiber with FC/PC connectors and an LED source at 617 nm.
f • Tested using an FC/PC-type ferrule.

Part Number	Description	Price	Availability
ADAL1	Ceramic Split Mating Sleeve for Ø1.25 mm (LC/PC) Ferrules	$4.50	Today
ADAL1-5	Ceramic Split Mating Sleeves for Ø1.25 mm (LC/PC) Ferrules, 5 Pack	$18.00	Today
ADAF1	Ceramic Split Mating Sleeve for Ø2.5 mm (FC/PC, ST®/PC, or SC/PC) Ferrules	$5.00	Today
ADAF1-5	Ceramic Split Mating Sleeves for Ø2.5 mm (FC/PC, ST®/PC, or SC/PC) Ferrules, 5 Pack	$20.00	Today

Visit the *Interconnects and Mating Sleeves for Fiber Optic Cannulae* page for pricing and availability information:
https://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=8783