

Patent/Utility model Licensing Opportunity:

Universal cable/tube feedthrough compatible with almost any cable and connector for dark room experiments

Industrial sector:

Cable Entry Systems

Applications:

Dark room/box & laboratory cable management

Invention executive summary

IFAE has developed and protected a novel light-tight cable feedthrough that enables the use of almost any cable/tube gauge and connector size for optical experiments in a completely dark environment, such as black boxes or rooms that need to be light-tight.

State-of-the-art

Light-tight feedthroughs are used to perform optical experiments or biological tests in a dark environment, in particular, to perform experiments involving electromagnetic radiation, including radio waves, microwaves and light.

These experiments imply a dedicated cable management associated with the specific instrumentation and their connections, which go from inside to outside the dark space, to ensure no external light is introduced into the cavity/room, forcing the user to acquire different adapters and/or connectors depending on the equipment connections. The same system could also be used to pass any tubes that might be needed for biological experiments that need a dark room.

There are several industrial solutions to pass individual cables and cable bundles through a wall, but none of them are universal regarding the cable gauge and connector size (e.g. multi-connector plate of several standard connectors; cable bushing with fixed diameter installed in a cable entry). Existing cable bushings without connectors do not always meet the requirements of light tightness. Although they accept cables of different gauges, they have difficulties in passing cables with connectors installed.

Goal

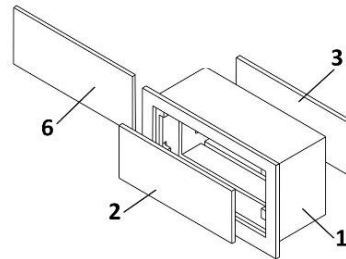
Companies dedicated to the development of dark environment activities/experiments or dark room/box construction willing to acquire this IFAE technology through a co-development and/or license agreement.

Intellectual Property Protection Status

Utility Model application number: U202430631 (OEPM). Priority date: 4 April 2024.

Invention description

The universal light-tight feedthrough comprises a couple of covers with a small gap for cable input and output. The inner cavity of the feedthrough is designed using smart materials and elements in a configuration which highly attenuates the unwanted light towards the experiment.



Invention advantages

- Drastically reduces light pass and diffuse light reflection thanks to its materials and design, while allowing the passage of different cables and connectors.
- Easy placement and removal of cables/tubes with connectors already installed due to its detachable parts.
- Universal cable/tubes and connectors compatibility. Even cables with installed connectors can be used.
- Adjustable elements depending on the optics experiment requirements.

Contact

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IFAE is a physics research center located in Barcelona, dedicated to design and develop radiation detectors and high-performance cameras for Medical/IoT/ICT sectors and fundamental research (CERN, ESA, ESO).