

LEONI provides fully customized cable system for medical innovator

Knowing they needed a highly customized cable solution that required many different components, this medical innovator turned to LEONI for a solution!

Kitchener, April 7, 2021 – A medical innovator for optical microscopes was looking for a hybrid cable solution that incorporated a variety of cable components such as fiber optics, data communication via USB and instrument signaling. They had tight dimensional constraints on the product, and the fiber had to withstand crushing from a 200lbs cart. They also required the outer jacket be medically compliant, all while maintaining a very high level of flexibility for its handheld use.

Engineering worked closely with the customer over the course of several months. Many options were explored to protect the fiber optics during crushing, however many tubes that proved to be crush resistant were either too rigid to maintain cable flexibility or would kink when crushed and not recover, thereby creating a weak point for future fiber failures. The next challenge was providing a USB component that could transmit data over their 10m application while maintaining high flexibility. Lastly the jacket material had to be medically compliant, flexible yet still offer adequate protection from tears when crushed by a rigid heavy wheel of the instrument cart.

Custom full turn-key solutions

Following the completion of the cable design the customer requested the design of a custom overmold for their product, one that would permit the cable to flex unhindered but still provide the necessary strain relief all while interlocking with their equipment.

The LEONI solution is a more compact full turn-key cable solution that allowed our customer to have all their interconnection needs to be consolidated into a

single round cable assembly. By having the fiber inserted into a plastic tube the necessary micro adjustment of the fiber is easily achieved. Achieving such an all-inclusive cable package while maintaining high flexibility and flex life as well as outstanding cut/tear resistance can only be achieved by having a specialized cable solution designed by our expert design specialists.

About the Leoni Group

Leoni is a global supplier of wires, optical fibers, cables and cable systems as well as related services for the automotive sector and further industries. Leoni develops and produces technically sophisticated products from single-core automotive cables through to complete wiring systems. Leoni's product range also comprises wires and strands, standardised cables, special cables and cable system assemblies for various industrial markets. The group of companies, which is listed on the German MDAX, employs about 92,000 people in 32 countries and generated consolidated sales of EUR 4.8 billion in 2019.



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