



**The NEPTUNE Canada Junction Box - Interfacing science  
instruments to sub-sea cabled observatories**

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**Abstract**

As the use of cabled ocean observatories expands, there is an opportunity to develop a standard interface between a wide variety of scientific instruments and the cabled observatory power, data and control systems. The NEPTUNE Canada Junction Box developed by Oceanworks International is rated to 3000m depth and can interface up to 10 science instruments to a cabled observatory. The Junction Box has been specifically designed to be modular, with a highly flexible, custom configurable architecture that can be used on a variety of projects. With an emphasis on reliability and fault resilience, the Junction Box uses a mixture of off-the-shelf technology and custom designed electronics to provide conditioned power and communications to science instruments. Following rigorous testing and qualification, the Junction Box is expected to have operational life in excess of 10 years.

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