

## OFC 02

# DEUTERIUM TREATMENT AND HYDROGEN TESTING SYSTEM





The Deuterium Treatment System is needed to ensure that the Low Water Peak Fiber's attenuation stays low throughout the lifetime of the fiber.

Line consisting of a Deuterium Treatment System (NDS) and a Hydrogen Testing System (NHS)

NDS CAPACITIES	SMALL CHAMBERS	MEDIUM CHAMBERS	LARGE CHAMBERS
Annual Fiber Capacity	50 000 - 200 000 km	250 000 - 1 000 000 km	500 000 - 2 000 000 km
Reel Capacity			
- 25 km	30	144	448
- 50 km	-	90	224
- 1000 km	-	-	18
Number of Chambers	1 - 4	1 - 4	1 - 4
Gas Mixing, Optional	•	•	•
Gas Recycling, Optional	•	•	•

## About the Hydrogen Ageing Test

- The hydrogen ageing test is a type test for optical fibers that is not done for each reel
- Hydrogen ageing is done to determine the optical fiber's hydrogen sensitivity
- Fibers are kept in a 1% hydrogen atmosphere for several days
- After the fibers have been removed from the hydrogen atmosphere, they are kept for 14 days in normal room atmosphere
- After 14 days of degassing, the 1383 nm attenuation is measured to determine permanent attenuation increase caused by hydrogen

## Nextrom NHT for Hydrogen Sensitivity Testing of Fibers

- One chamber system capable of testing 4 fiber reels simultaneously
- Fiber ends can be pulled out of the chamber so that attenuation can be measured with OTDR during the hydrogen soaking phase
- NHT system is PLC controlled and hydrogen concentration is measured automatically on-line
- NHT is designed to be used with premixed H<sub>2</sub>/N<sub>2</sub> inlet gas

The Hydrogen Testing System is needed to test if the deuterium treatment of fiber has successfully been carried out.



NHT Hydrogen Testing System

