Oxford NANOPORE Technologies

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# Terabases of long-read sequence data, analysed in real time

PromethION

> The PromethION is a real game changer. Combining ultra-long reads with high sequence output for the production of contiguous, high-quality reference genomes. Using this platform, we sequenced the 2.56 Gb lettuce genome at >100X coverage using just a few flow cells.

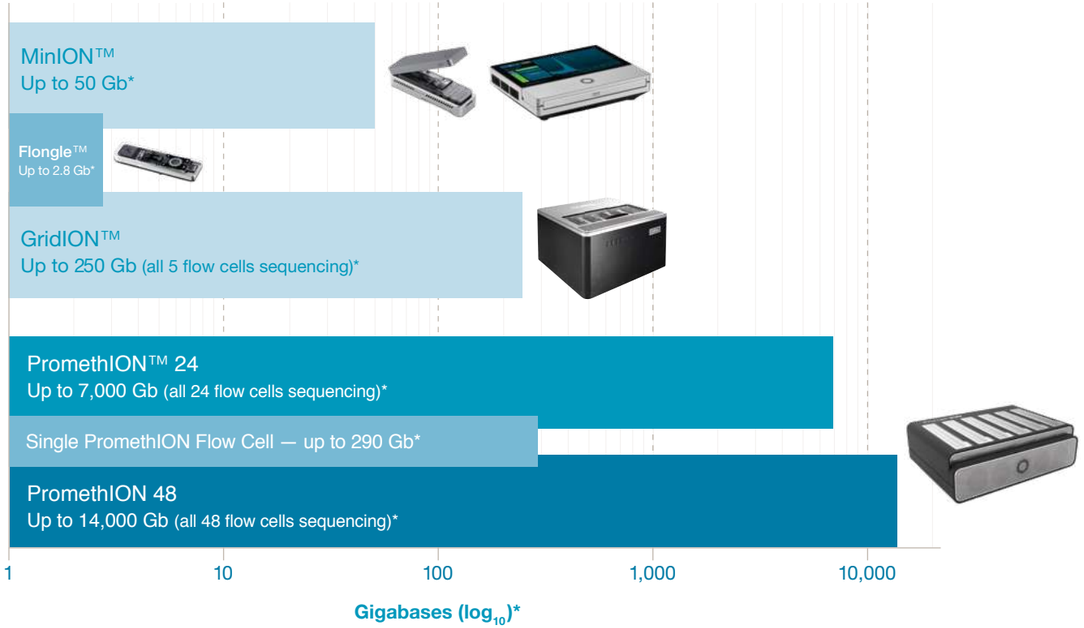
**Dr. Alexander Wittenberg**
KeyGene, PromethION service provider

> ...we completed all 2.3 terabases of nanopore data collection in nine days on one PromethION, running up to 15 flow cells simultaneously...In terms of contemporary long-read sequencing platforms, this throughput is unmatched.

**Shafin, K. *et al.***
bioRxiv 715722 (2019)

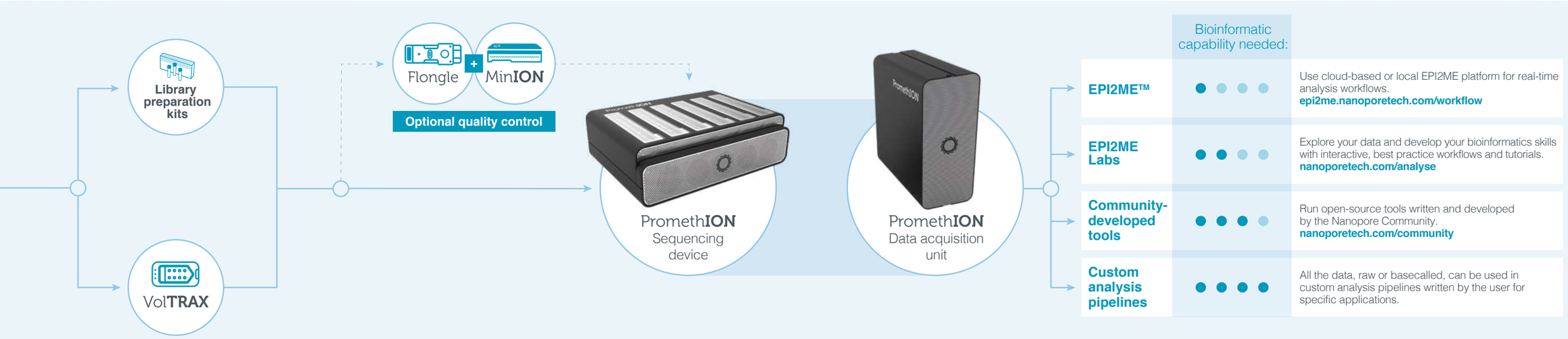
# PromethION offers high-capacity benchtop sequencing that enables the delivery of sub-$1,000 human genomes

**PromethION 24 (P24) and PromethION 48 (P48) are designed to run up to 24 and 48 flow cells respectively. Each flow cell can be run independently, providing flexible, on-demand sequencing to suit your specific experimental requirements. PromethION Flow Cells deliver approximately six times the sequencing capacity of MinION Flow Cells.**




* Theoretical max output when system is run for 72 hours (or 16 hours for Flongle) at 420 bases / second. Outputs may vary according to library type, run conditions, etc.

# PromethION gives you control to start sequencing individual samples as and when you wish, generating data and providing immediate insight — on demand




## Prepare

- Straightforward and streamlined library preps — in as little as 10 minutes
- Multiplex your samples with barcoding kits
- Same chemistry and kits used for Flongle, MinION, GridION, and PromethION — check your sample quality on a MinION or Flongle, before running the experiment on PromethION

## Sequence

- Define your experiment to suit you — use a single flow cell or group multiple flow cells to obtain more data
- Start your experiment when you choose — no need to wait to fill the device
- Control each individual flow cell independently — run as many or as few as you wish at the same time, or add more whilst others are running

- Read lengths are determined by your sample and experimental needs — no need to fragment your sample, therefore making assembly, structural variation detection, and phasing easier
- PromethION sequences DNA and RNA directly — meaning no amplification bias and retained modification information

## Analyse

- PromethION data acquisition unit contains a state-of-the-art basecall accelerator which gives you upwards of 200 (P24) or 400 (P48) TFLOPS of computing power
- Discover EPI2ME and EPI2ME Labs for streamlined, best practice analysis pipelines and tutorials.
- Choose to output the raw signal or basecalled .fastq files, so you can use your own custom analysis pipelines

# Choose your PromethION plan

| | PromethION 24 | | PromethION 48 | |
|---|---|---|---|---|
| | Starter Pack | CapEx* | Starter Pack | CapEx* |
| PromethION sequencing device and compute | 1 | 1 | 1 | 1 |
| Flow cells | 120 | - | 192 | - |
| Sequencing kits | 20 | - | 32 | - |
| Wash kits | 10 | - | 10 | - |
| Software licence and device warranty† | 12 months | 12 months | 12 months | 12 months |
| On-site Assurance and Familiarisation‡ | Included | Included | Included | Included |
| | **$195,455** | **$335,455** | **$285,455** | **$530,000** |

* Device purchase.
† Extended warranties available.
‡ May be provided remotely where unable to access customer site.

**Buy now** **store.nanoporetech.com**

A wide range of training and support services are available, visit **store.nanoporetech.com/services** for more information.

NANOPORE Service Certified

Service provider certification is also available for the PromethION.

# PromethION on-site set-up — everything you need to start

**On-site Assurance and Familiarisation* is included with all PromethION purchase plans — ensuring the set-up and configuration of your system is optimal. An Oxford Nanopore Technical Specialist will work with you to fully test the PromethION device after installation.**

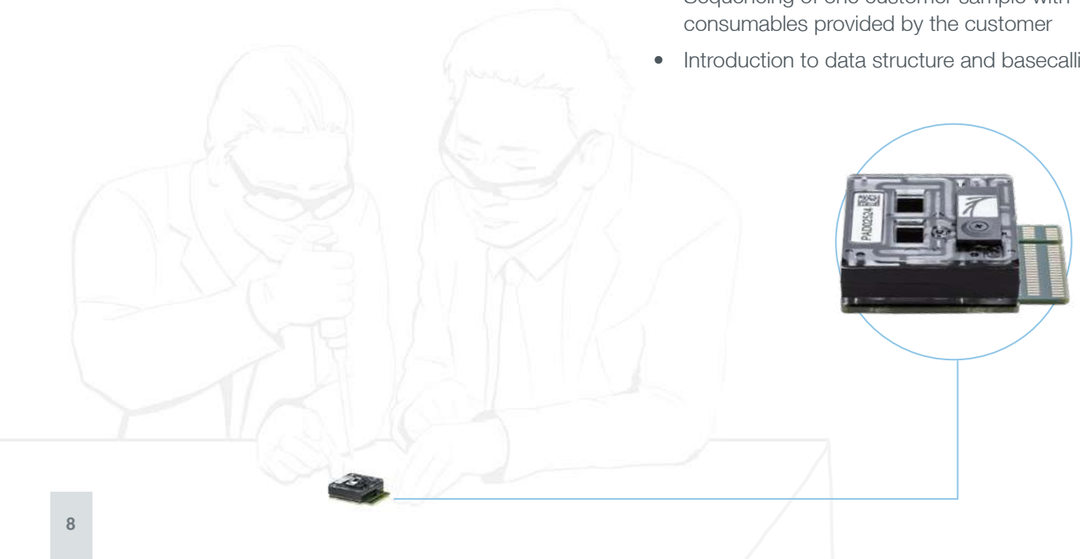
* May be provided remotely where unable to access customer site.

## Pre-visit remote consultation

- PromethION installation assistance
- PromethION configuration assistance

## On-site Assurance and Familiarisation*

- Installation and configuration review
- PromethION device and software introduction
- Loading PromethION Flow Cells
- Sequencing of one control sample with consumables provided by the customer
- Sequencing of one customer sample with consumables provided by the customer
- Introduction to data structure and basecalling





# PromethION Advanced Training available when you need it

**PromethION Advanced Training is a comprehensive, personalised course for up to four attendees. Two Oxford Nanopore experts will provide in-depth technology training with practical hands-on experience, running up to seven of your own samples. The training will provide participants with the tools to successfully complete nanopore sequencing experiments on PromethION devices.**

| PromethION Advanced Training | |
|---|---|
| Location | Oxford Nanopore labs or your site |
| Duration | 2 days |
| Introduction to nanopore technology | ✓ |
| Experimental planning and sample QC | ✓ |
| PromethION Flow Cell loading practical | ✓ |
| Control experiment | ✓ |
| Oxford Nanopore software | ✓ |
| User-provided samples processed | Up to 7 samples |
| Flow cells included | 8 |
| Sequencing kits included* | 2 |
| Data analysis | ✓ |
| *Third party reagents are provided only when training at Oxford Nanopore labs. | **$19,998** |

**Buy now** store.nanoporetech.com/training

# Customer network, data storage, and power requirements for PromethION operation

## PromethION connection to customer network

2 x 10 Gbps fibre **or** copper ports

## PromethION power requirements

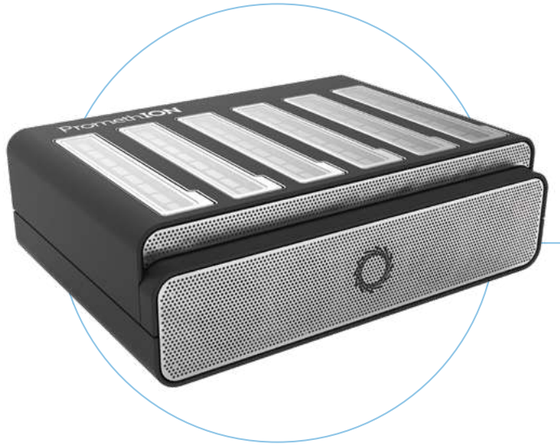
**3 x power supplies:**

- 1 x 1200 W for sequencing unit
- 2 x 2 kW for data acquisition unit

## Real time and offline storage

**Two types of customer data storage is recommended:**

1. **Real time:** high-speed data streaming to local infrastructure
2. **Local:** offline long-term data storage



**More information** nanoporetech.com/promethion-requirements.pdf

# Product specifications

## Sequencing Unit

- Up to 24 (P24) or 48 (P48) individually addressable flow cells
- Up to 72 hour run time
- Each flow cell has approximately six times the sequencing capacity of a MinION Flow Cell
- 72,000 (P24) or 144,000 (P48) channels across device can be sequencing at once
- As much as 290 Gb* per flow cell

**Weight:** 28 kg

**Dimensions:** W 590 mm, H 190 mm, D 430 mm

* Theoretical max output when system is run for 72 hours at 420 bases / second. Outputs may vary according to library type, run conditions, etc.

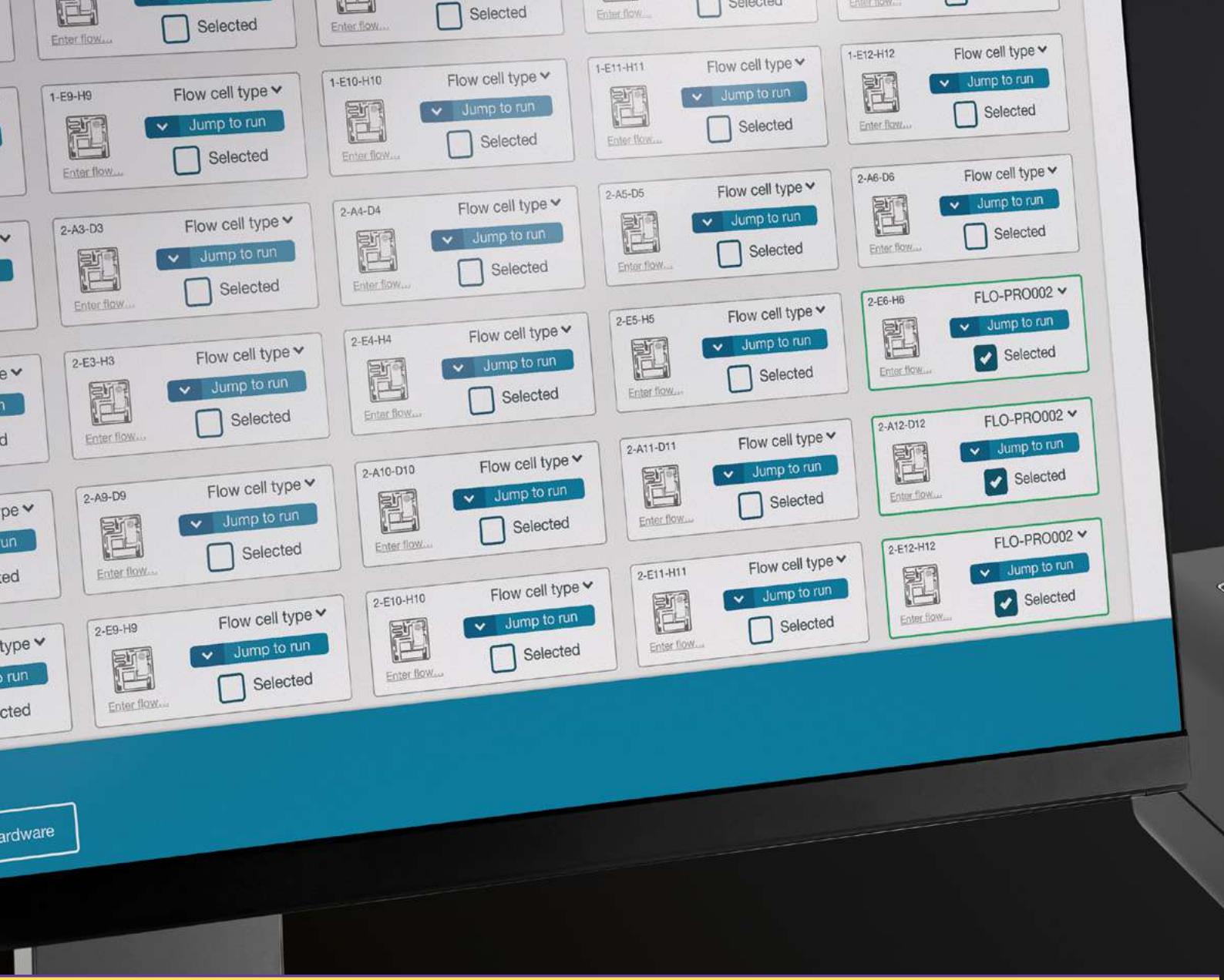
## Data Acquisition Unit

- 2 kW max power consumption
- 32 TB (P24) or 64 TB (P48) SSD data storage
- 384 GB RAM
- Latest generation CPU for OS and orchestration
- State-of-the-art basecall accelerators
- Preloaded with Linux OS, PromethION OS, and MinKNOW
- Dual 10 Gbps fibre or ethernet connection (20 Gbps bandwidth)

**Weight:** 25 kg

**Dimensions:** W 178 mm, H 440 mm, D 470 mm

**Buy now** store.nanoporetech.com





**ООО «Диаэм»**

**Москва**
ул. Магаданская, д. 7, к. 3 ■ тел./факс: (495) 745-0508 ■ sales@dia-m.ru

**www.dia-m.ru**

**С.-Петербург**
+7 (812) 372-6040
spb@dia-m.ru

**Новосибирск**
+7(383) 328-0048
nsk@dia-m.ru

**Воронеж**
+7 (473) 232-4412
vrn@dia-m.ru

**Йошкар-Ола**
+7 (927) 880-3676
nba@dia-m.ru

**Красноярск**
+7(923) 303-0152
krsk@dia-m.ru

**Казань**
+7(843) 210-2080
kazan@dia-m.ru

**Ростов-на-Дону**
+7 (863) 303-5500
rnd@dia-m.ru

**Екатеринбург**
+7 (912) 658-7606
ekb@dia-m.ru

**Кемерово**
+7 (923) 158-6753
kemerovo@dia-m.ruu

**Армения**
+7 (094) 01-0173
armenia@dia-m.ru