

ONSO SYSTEM SPECIFICATION SHEET

Next level accuracy with the Onso™ system

The Onso short-read sequencing system is a scalable and flexible benchtop platform that provides an extraordinary level of accuracy through its unique sequencing by binding (SBB™) technology. With inherently lower sequencing noise, the Onso system enables researchers to uncover rare variants previously missed and do so at lower sequencing depths. The accuracy provided by the Onso system will help drive groundbreaking discoveries in areas such as liquid biopsy testing for minimal residual disease (MRD), antibiotic resistance monitoring in microbial communities, off-target analysis in gene editing experiments, and many other “needle-in-a-haystack” applications where the highest level of sensitivity is desired.



Sequencing specifications

The Onso system sequencing consumables contain a flow cell (dual lane), clustering reagents, and sequencing reagent pack for supporting 200 or 300 cycles of sequencing and dual index reads.

Onso reagents	Read length	Number of reads	Output (Gb)	Approximate run time	Quality score
200 cycle sequencing kit	1 × 200 bp 2 × 100 bp	400–500M (SE) 800–1000M (PE)	80–100	32 hours	≥90% Q40+
300 cycle sequencing kit	2 × 150 bp	800–1000M (PE)	120–150	48 hours	

Application specifications

The Onso system is a midrange short-read sequencer capable of supporting a wide range of applications required for most laboratories.

Sample	Read format	Number of samples/run**
Target enrichment panel (1 Mb, 6,000× mean depth)	2 × 150	20–25
Single-cell RNA-Seq (10K cells, 20K reads/cell)	2 × 100*	2–3
Targeted amplicon panel (160 genes / 500× mean depth)	2 × 150	48–60

* Application-specific read format varies; supported by the Onso 200 cycle sequencing kit

** Numbers shown are estimates based on expected output per kit. Actual number of samples will vary depending on sample type, quality, and experimental objectives

Instrument specifications

Operating environment	
Temperature	18–26°C (64–79°F)
Humidity	20–80% relative humidity, non-condensing
Altitude	Below 2,000 m (6,562 ft)
Sequencer dimensions	
W × D × H	37 in (94 cm) × 27 in (68.6 cm) × 30 in (76.2 cm)
Weight	272 lb
Crated W × D × H	52" × 38" × 41"
Crated weight	224 lb (crate) + 272 lb (sequencer)
Cluster generator dimensions	
W × D × H	16 in (39.6 cm) × 26 in (65.2 cm) × 18 in (45.5 cm)
Weight	99 lb
Crated W × D × H	22" × 33" × 28"
Crated weight	110 lb
Electrical power	
Power requirements	100–240 VAC at 50/60 Hz

Compute	
Network connection	1 Gbps
ICC ¹ operating system	Windows 10 Enterprise
Output file format	FASTQ
Output file size	80–110 GB
Analysis PC	
W × D × H	8 in (20.3 cm) × 18.4 in (46.7 cm) × 18.1 in (45.9 cm)
Weight	33 lb

¹ICC = instrument control computer



Ordering information

Part number	Item	Description
102-837-000	Onso system	Sequencing instrument
102-837-100	Onso cluster generator	External cluster generator
102-860-200	Onso 200 cycle sequencing kit	Complete kits with flow cell, clustering reagents, and sequencing reagents
102-860-300	Onso 300 cycle sequencing kit	

Research use only. Not for use in diagnostic procedures. © 2023 Pacific Biosciences of California, Inc. ("PacBio"). All rights reserved. Information in this document is subject to change without notice. PacBio assumes no responsibility for any errors or omissions in this document. Certain notices, terms, conditions and/or use restrictions may pertain to your use of PacBio products and/or third-party products. Refer to the applicable PacBio terms and conditions of sale and to the applicable license terms at pacb.com/license. Pacific Biosciences, the PacBio logo, PacBio, Circulomics, Omniome, SMRT, SMRTbell, Iso-Seq, Sequel, Nanobind, SBB, Revio, and Onso are trademarks of PacBio.

102-326-553 REV04 17AUG2023