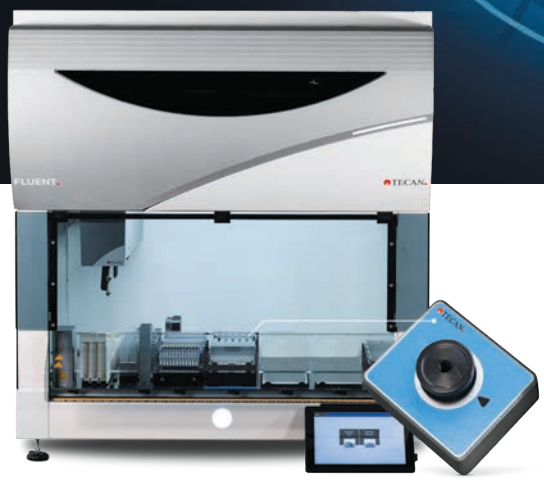
Frida Reader™

MODULE FOR FLUENT® AUTOMATION WORKSTATION
SPECIFICATIONS AND TYPICAL PERFORMANCE VALUES



The Frida Reader for Fluent measures the concentration and purity of a nucleic acid sample in a hanging drop at the end of a 50ul disposable tip. The patented method is completely free of sample loss as the hanging drop is aspirated back into the tip and directly used for further processing (e.g. a normalization).

Specifications+ for absorbance measurement

Light source	Dedicated Xenon flash lamp
Operating wavelengths	230, 260, 280 and 320 nm
OD range	6 mOD to 3.2 OD
Corresponding to a concentration range	2 ng/ul to 1000 ng/µl for dsDNA and 2 ng/ul to 800 ng/µl for RNA
Limit of detection (nucleic acids)	≤2 ng/µl
Wavelength accuracy	≤0.8 nm
OD Accuracy @ 260 nm @ 1 OD - compare 3.2 OD	≤2.5 %
OD Precision @ 260 nm @ 1 OD - compare 3.2 OD	≤2.0 %

Reproducibility values in single hanging drop (measured)

The CV value reflects the reproducibility of the measurement:

- Determined in absorption measurements
- On fluid drop samples with 1.5 to 1.6 mm diameter
- With Tecan 50ul disposable tips with filter
- Nucleic acid dissolved either in TRIS EDTA buffer or water

Assumptions:

- A 2-sigma confidence interval

ds DNA concentration range	equals a RNA concentration range	CV limit
5–10 ng/µl	4–8 ng/µl	≤10 %
>10–30 ng/µl	>8–24 ng/µl	≤6 %
>30–1,000 ng/µl	>24–800 ng/µl	≤2 %

Nominal reproducibility in a cuvette with a size of 10mm (OD 10mm)

Measurement Reproducibility within the drop size between 1,5 to 1,6 mm, calculated to an OD 10 mm value (path length = 10 mm):

- In the measurement range ≤100 ng/µl dsDNA (80 ng/µl RNA): +/-2 ng/ul
- In the measurement range >100 ng/µl dsDNA (80 ng/µl RNA): +/-1.5 ng/ul

Typical performance values++

DNA from a commercial supplier was measured in a Reference Spectrophotometer and in 3 different Frida Readers.

The difference between the measured values are compared in the following table:

Nominal target DNA concentration from supplier	Measured target DNA concentration with Reference Spectrophotometer*	Frida Reader number 1	Frida Reader number 2	Frida Reader number 3	Average difference between Frida and Reference Spectrophotometer
[ng/ul]	[ng/ul]	[ng/ul]	[ng/ul]	[ng/ul]	%
5	5.7	6.1	5.7	5.8	2.8
10	10.6	10.6	10.3	10.2	2.1
30	30.5	30.1	29.5	29.3	2.9
300	302.7	299.5	301.0	301.1	0.7
800	790.1	772.6	773.1	766.3	2.5

*Reference Spectrophotometer: Average value from 3 single measurements

+Specifications are subject to change.

++No specification requirement for accuracy performance, but typical values were determined. Typical performance values represent the average observed factory tested values.

The Frida reader is intended for use on the Fluent platform which is intended for general laboratory use.

Australia +61 3 9647 4100 **Austria** +43 62 46 89 330 **Belgium** +32 15 42 13 19 **China** +86 21 220 63 206 **France** +33 4 72 76 04 80 **Germany** +49 79 51 94 170
Italy +39 02 92 44 790 **Japan** +81 44 556 73 11 **Netherlands** +31 18 34 48 17 4 **Nordic** +46 8 750 39 40 **Singapore** +65 644 41 886 **Spain** +34 93 595 25 31
Switzerland +41 44 922 89 22 **UK** +44 118 9300 300 **USA** +1 919 361 5200 **Other countries** +41 44 922 81 11

401830 V1.0, 2021-02

www.tecan.com