



## Qubit fluorometers and assays

Accurate, specific, and sensitive quantification of DNA, RNA, and protein samples

# Qubit fluorometers

## Intuitive user interface coupled with accurate measurements

Invitrogen™ Qubit™ 4 and Qubit™ Flex fluorometers are benchtop microvolume fluorometers designed to accurately measure DNA, RNA, or protein quantity. Whether you are an expert or a novice, the easy-to-use touchscreen menus make it easy to perform assays, with accurate and reliable results displayed in just a few seconds. Both instruments provide flexible data exportation using a USB drive, Wi-Fi cloud connectivity, or direct USB cable connection so your quantification data is easily accessed.

## Key benefits of Qubit fluorometers

- **High sensitivity**—more sensitive than UV absorbance-based quantification
- **Accuracy and speed**—accurately quantifies DNA, RNA, or protein in less than 3 seconds
- **Ideal for precious samples**—requires as little as 1  $\mu\text{L}$  of sample
- **Optimized reagents and tubes**—Invitrogen™ Qubit™ reagents and assay tubes work best with Qubit fluorometers



Figure 1. Qubit Flex and Qubit 4 fluorometers with intuitive touchscreens and applications for specific assays.

## Qubit fluorescence technology

Qubit fluorometers and assay kits are designed to measure the intensity of the signal from fluorescent dyes bound to specific biological molecules. These optimized dyes bind selectively to DNA, RNA, or protein and only emit a fluorescent signal when bound to the target.

Qubit fluorometers use specialized curve-fitting algorithms to develop a calibration curve using standard samples with a known concentration. An unknown sample concentration of DNA, RNA, or protein is calculated by comparing the relative fluorescence units (RFUs) of the sample to the RFUs of the standards used in calibration. The detection limits of the measurements are specific to each assay.

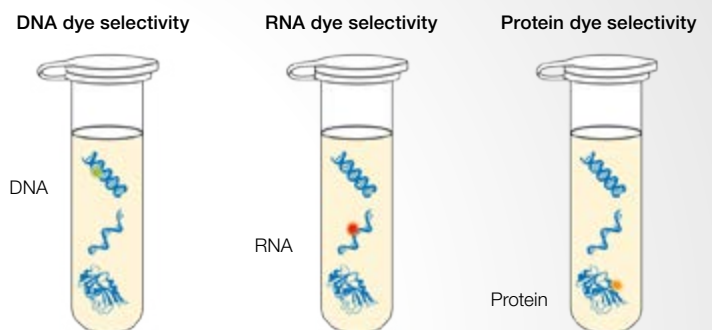


Figure 2. Fluorescent dyes selectively bind to DNA, RNA, or protein. Dyes only emit signal when bound to the target.

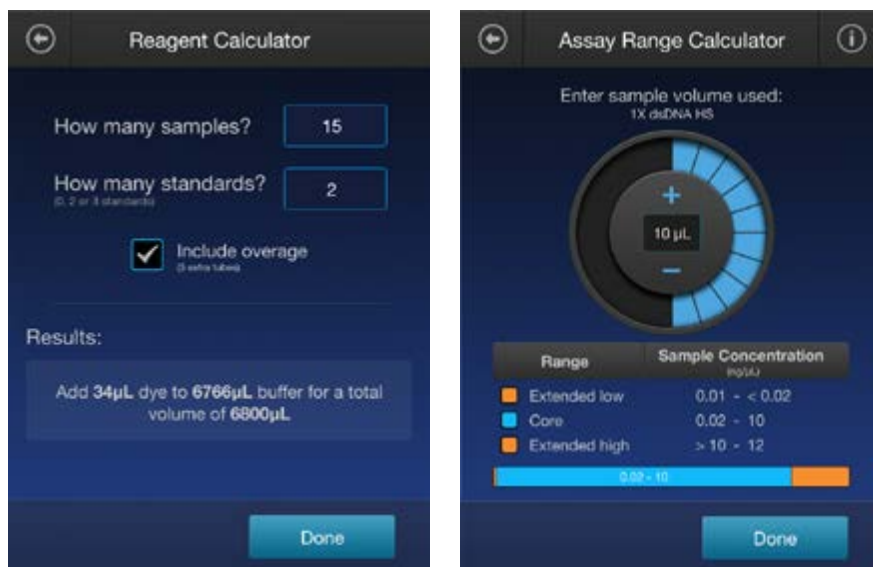
## Convenient, easy-to-use onboard calculators

### Reagent calculator

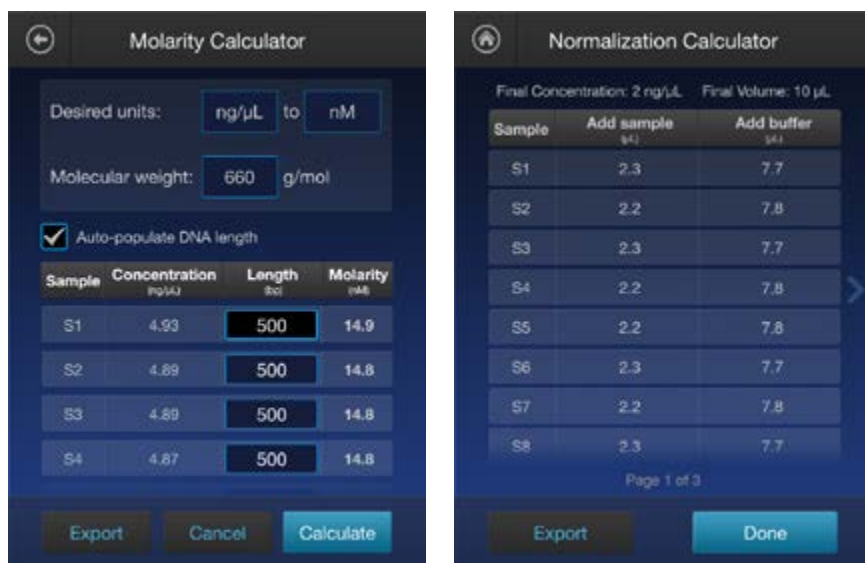
The reagent calculator conveniently calculates how much working solution to prepare based on the number of samples to quantify. Available in both the Qubit 4 and Qubit Flex fluorometer models.

### Assay range calculator

The assay range calculator displays the core sample concentration range based on the sample volume, as well as the extended low and high ranges. This aids in the selection of the appropriate Qubit assay for the most accurate quantification based on your sample volume and estimated sample concentration. This calculator is only available with the Qubit Flex Fluorometer.



**Figure 3. Reagent and assay range calculators.** Easily make working solutions for all assays that are not in 1X format using the reagent calculator. The assay range calculator aids in the determination of sample volume requirements based on required accuracy.



**Figure 4. Integrated post-results molarity and normalization calculators.** Use the molarity calculator to convert values to molarity based on nucleic acid length. Use the normalization calculator to determine how to dilute the samples to the same concentration.

## Calculators for next-generation sequencing (NGS) workflows

### Molarity calculator

Quickly calculate the molarity of your samples based on nucleic acid length and the measured concentration. The molarity calculator is only available on the Qubit Flex Fluorometer.

### Normalization calculator

Easily normalize to a desired mass, concentration, or molarity with the normalization calculator. This replaces spreadsheet calculations for standard normalization during library preparation for sequencing. The normalization calculator is only available on the Qubit Flex Fluorometer.

## Personalized workflows

### Envision and create custom assays for the Qubit 4 Fluorometer

MyQubit functionality brings your favorite fluorescence assays right to your benchtop, providing a reliable platform for many quantitation needs—from laboratory research and quality control to process monitoring and beyond. Any fluorescent reagent or assay that is spectrally compatible with the Qubit hardware can be adapted for use with the Qubit 4 Fluorometer.

## Compare Qubit fluorometers

	Qubit 4 Fluorometer	Qubit Flex Fluorometer
Sample throughput	1 sample in 3 seconds	1 to 8 samples in 3 seconds
User interface	5.7 in. color touchscreen	8 in. color touchscreen
Onboard calculators	Reagent calculator	Reagent calculator Assay range calculator Molarity calculator Normalization calculator
Informs where the sample concentration resides within the assay range	Provides quantification data for samples that are within the core and the extended range of the standard curve. Sample concentrations that are out of range are not given a measurement.	
System check	Qubit 4 System Verification Assay Kit	Qubit Flex System Verification Assay Kit
Fluorometer mode	Yes	No
Programable open format	Yes—MyQubit	No
Instrument footprint (W x L x H)	13.6 x 25 x 5.5 cm 5.4 x 10 x 2.2 in.	1.86 x 28.2 x 10.3 cm 7.3 x 11.1 x 4.1 in.
Sample data storage	1,000 samples	10,000 samples
Data export	Wi-Fi USB drive Direct to computer via USB or ethernet cable	Wi-Fi USB drive Direct to computer via USB or ethernet cable
Light sources	Blue LED (peak ~470 nm), Red LED (peak ~635 nm)	Blue LED (peak ~460–480 nm), Red LED (peak ~620–640 nm)
Excitation filters	Blue LED (430–495 nm), Red LED (600–645 nm)	Blue LED (456–484 nm), Red LED (612–644 nm)
Emission filters	Green (510–580 nm), Red (665–720 nm)	Green (513–563 nm), Far-red (671–693 nm)

## Qubit assays

Qubit assays are designed to work with Qubit fluorometers. Common contaminants such as salts, free nucleotides, RNA, solvents, detergents, and proteins are well tolerated in Qubit assays.



## Qubit 4 and Qubit Flex kits for system verification

The Invitrogen™ Qubit™ 4 System Verification Assay Kit and the Invitrogen™ Qubit™ Flex System Verification Assay Kit are fast, easy-to-use, reagent-based assays that test the performance of Qubit fluorometers. Each kit consists of three components: a blank reagent solution, a green

fluorescent reagent, and a far-red fluorescent reagent. Paired with a hardware functionality test, the assay is designed to test the internal components of the instrument to help ensure proper functionality.

# Qubit RNA quantification assays

There are three RNA assay kits, which offer differing detection ranges, and one microRNA assay kit:

- **Invitrogen™ Qubit™ RNA HS Assay Kit**—high sensitivity
- **Invitrogen™ Qubit™ RNA BR Assay Kit**—broad range
- **Invitrogen™ Qubit™ RNA XR Assay Kit**—extended range
- **Invitrogen™ Qubit™ microRNA Assay Kit**—highly selective for miRNA over rRNA or large mRNA (>1,000 bp)

The RNA assays are accurate for initial sample concentrations from as little as 250 pg/μL to 10,000 ng/μL. These kits are highly selective for RNA over dsDNA. Unlike other RNA assays, they do not require DNase if DNA is present in the sample for an accurate measurement.

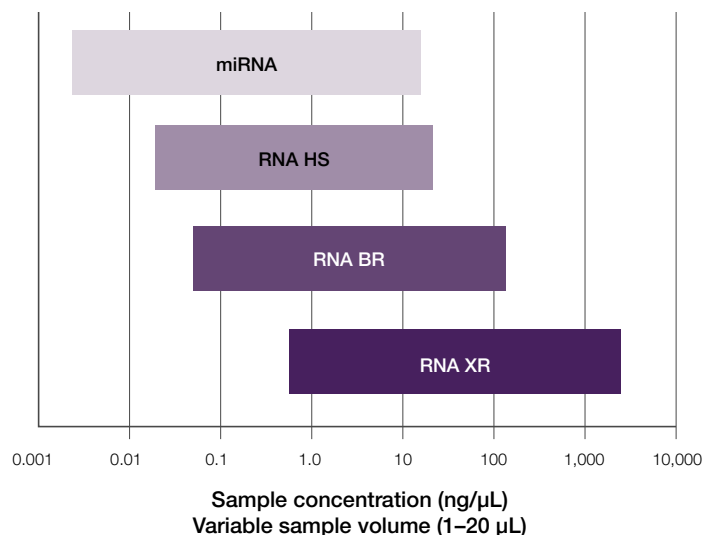


Figure 5. Quantification ranges of Qubit RNA assay kits.

# Qubit RNA integrity and quality (IQ) assay

The Invitrogen™ Qubit™ RNA IQ Assay was developed to quickly assess the quality and integrity of an RNA sample. This assay allows assessment of RNA quality at a lower cost and with an easier, simpler, and faster workflow than other solutions currently on the market.

The Qubit RNA IQ Assay utilizes two unique dyes—one that binds to large, intact, and/or structured RNA, and another that selectively binds to small, degraded RNA. Together, they are able to quickly assess the quality and integrity of an RNA sample. To use, simply add your samples to the Qubit RNA IQ working solution, then measure on the Qubit 4 or Qubit Flex Fluorometer.

Results are presented as a total value for the RNA sample integrity and quality, or RNA IQ number, and as the calculated percentage of large and small RNA in the sample. The RNA IQ number is based on a scale of 1 to 10, wherein a high IQ number indicates the majority of the sample consists of large and/or structured RNA. Conversely, a small IQ number indicates the sample comprises mainly small RNA with limited tertiary structure.



Figure 6. A proprietary algorithm is used to report a quality score representative of the ratio of small and large and/or structured RNA in the sample.

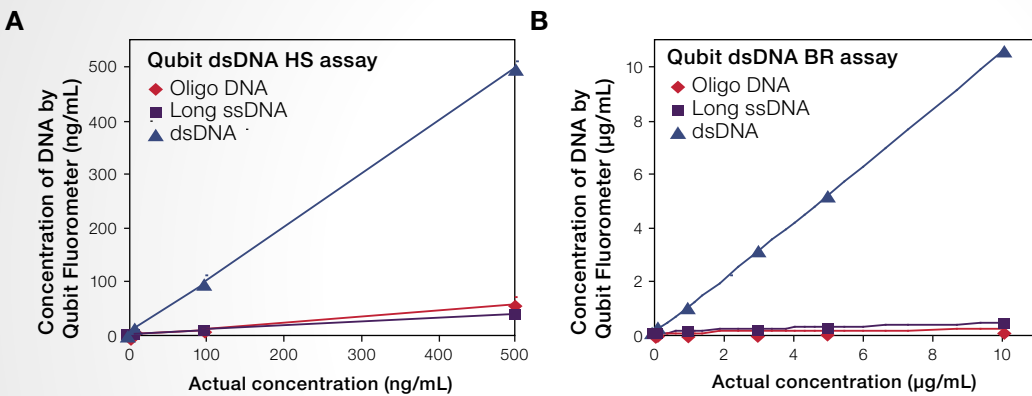
# Qubit DNA quantification assays

Invitrogen™ Qubit™ DNA assay kits are broadly categorized as double-stranded DNA (dsDNA) assays or single-stranded DNA (ssDNA) assays.

## Qubit dsDNA assay kits—available in two detection ranges and two formats

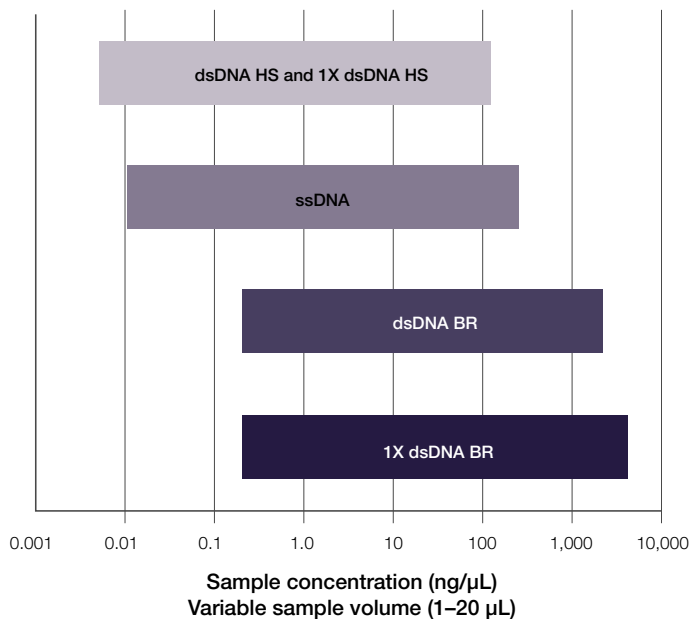
### Detection ranges: high-sensitivity and broad-range assays

- The Invitrogen™ Qubit™ dsDNA High-Sensitivity (HS) Assay Kit is for samples with a low concentration of dsDNA, making it ideal for precious samples. It has a detection range between 0.1 and 120 ng.
- The Invitrogen™ Qubit™ dsDNA Broad-Range (BR) Assay Kit is ideal for a broad range of DNA concentrations and applications. It can detect between 4 and 4,000 ng.



Use high-sensitivity (HS) assays for low concentrations and broad-range (BR) assays for high concentrations of dsDNA

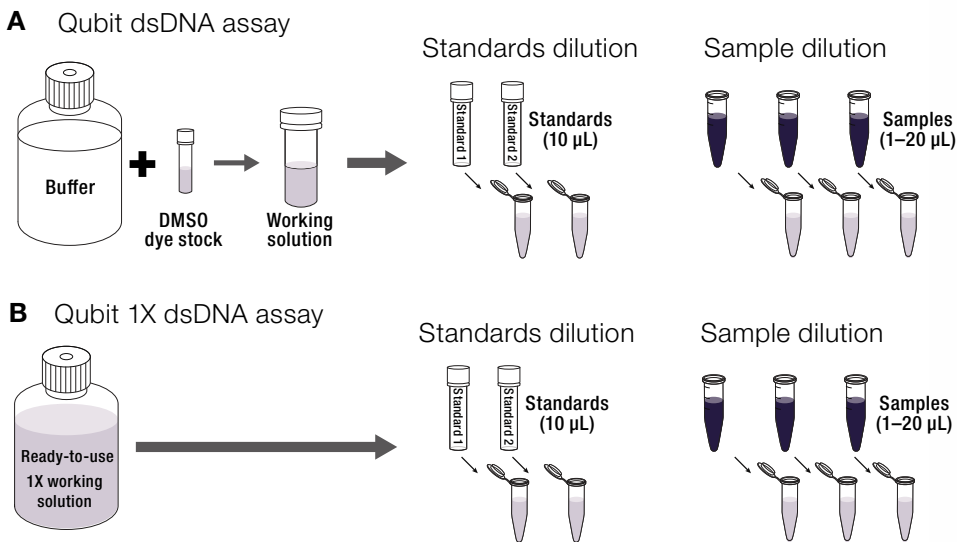
**Figure 7. Detection of double-stranded DNA by the Qubit dsDNA HS (A) and BR (B) assay kits.** Duplicate samples of long ssDNA, oligo DNA, or lambda dsDNA at concentrations of 0.5 to 500 ng/mL in the assay tube were quantified using the Qubit dsDNA HS assay, and at concentrations of 0.01 to 10 µg/mL in the assay tube using the Qubit dsDNA BR assay according to kit protocols.



**Figure 8. Quantification ranges of Qubit DNA assay kits.**

### Formats: standard assay and 1X assay

- Invitrogen™ Qubit™ standard assays require same-day mixing of the buffer with the reagent to create the working solution prior to preparing standards and samples for quantification.
- Invitrogen™ Qubit™ 1X assays eliminate the step of preparing the working solution.
  - The Invitrogen™ Qubit™ 1X dsDNA HS Assay Kit provides the same dynamic range and limit of detection as the standard assay, while the Invitrogen™ Qubit™ 1X dsDNA BR Assay Kit has a wider dynamic range than the standard assay, achieving 4,000 ng/μL in the extended range.
  - This format offers a simplified workflow while reducing the tubes in the kit, therefore reducing the amount of plastic used.
  - Simply add your sample or standard to the premixed solution, incubate, and read your results.



**Figure 9. Workflow comparison for the (A) Qubit dsDNA and (B) Qubit 1X dsDNA assays.**

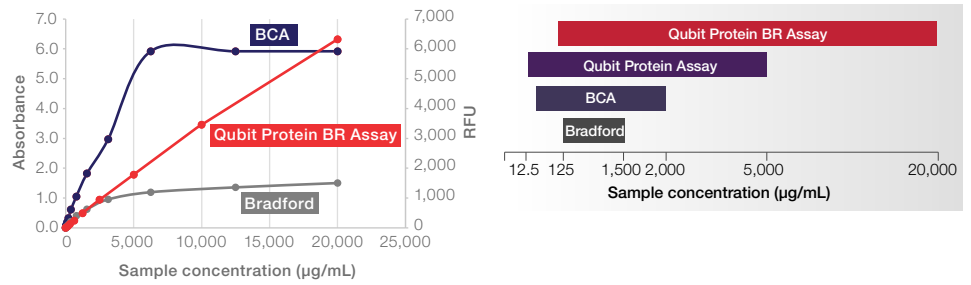
Standard Qubit dsDNA High Sensitivity (HS) and Qubit dsDNA Broad Range (BR) assay kits include a fluorogenic dye, buffer, and dsDNA standards. Prior to each assay, a fresh aqueous working solution needs to be prepared by diluting the dye stock in the provided buffer in a 1:200 ratio. Qubit 1X dsDNA assay kits eliminate this step by providing a ready-to-use working solution.

### Qubit ssDNA and oligos quantification assays

The Invitrogen™ Qubit™ ssDNA Assay Kit is ideal for quantifying single-stranded DNA or oligonucleotides. It is accurate for initial sample concentrations from 50 pg/μL to 200 ng/μL, providing an assay range of 1–200 ng.

# Qubit protein quantification assays

Invitrogen™ Qubit™ protein assay kits are designed to make protein quantification easy and fast. The assays provide low protein variability, rapid quantitation, and high sensitivity. Common contaminants, such as reducing reagents (DTT, β-mercaptoethanol), salts, free nucleotides, amino acids, solvents, DNA, and detergents (Invitrogen™ Qubit™ Protein BR Assay only), are well tolerated in the assays. The assays' wide dynamic ranges make it easy to determine the concentrations of a wide range of samples compared to standard colorimetric protein assays.



	Qubit Protein BR Assay	Qubit Protein Assay
<b>Platform</b>	Qubit 4	Qubit 4, Qubit Flex
<b>Compatibility</b>	Detergents, reducing agents	Reducing agents
<b>Quantitation range</b>	100 µg/mL to 20 mg/mL	12.5 µg/mL to 5 mg/mL

Figure 10. Quantification ranges of protein assays.

## Need higher throughput for your nucleic acid or protein samples?



Qubit assays are ideal when the number of samples you measure at one time is low enough not to warrant a microplate reader. With larger sample batches requiring a fluorescence microplate reader, use Invitrogen™ Quant-iT™ assay kits and reagents, which are designed to use with microplate readers for nucleic acid or protein quantification.

Learn more about Quant-iT assays at [thermofisher.com/quantit](http://thermofisher.com/quantit)

Learn more about microplate readers at [thermofisher.com/platereaders](http://thermofisher.com/platereaders)



# Frequently asked questions

**Q. I already have a Thermo Scientific™ NanoDrop™ instrument; why should I use a Qubit fluorometer?**

**A.** NanoDrop instruments use UV absorbance to measure DNA and RNA concentrations. Absorbance-based measurements have limitations in distinguishing between DNA, RNA, and free nucleotides, which absorb at 260 nm.

Qubit assays are fluorescence-based. They are designed to only quantify the target analyte. Additionally, fluorescence-based nucleic acid quantification provides a more sensitive dynamic range than absorbance-based instruments.

When used with Qubit assays, Qubit fluorometers can accurately measure low concentrations of sample, while NanoDrop spectrophotometers can detect the presence of common contaminants.

**Q. Do I have to use new standards every time?**

**A.** For each assay, you have the choice to run a new calibration or to use the values from the previous calibration. As you first use the instrument, perform a new calibration each time. As you become familiar with the assays, the instrument, your pipetting accuracy, and significant temperature fluctuations within your laboratory, you can determine the level of comfort you have using the calibration data stored from the last time the instrument was calibrated. We do recommend running a new calibration curve every time you prepare a new working solution.

**Q. Is there a difference in signal between supercoiled and relaxed plasmid DNA when using a Qubit fluorometer?**

**A.** Yes, we have seen a 20–30% difference. For the different forms of plasmid DNA, we recommend using a standard that more closely represents the composition of the plasmid DNA in the sample.

**Q. Does the Qubit Protein Assay or Qubit Protein BR Assay work well in the presence of detergents?**

**A.** The Qubit Protein BR Assay is compatible with samples that contain up to 5% detergents. The Qubit Protein Assay is not recommended if detergent is present.

**Q. Why are some of the instrument setting menu options not available on my Qubit 4 or Qubit Flex device?**

**A.** To adhere to cybersecurity legal standards, the latest firmware for Qubit 4 and Qubit Flex fluorometers will require users to log in to access certain menu options (such as instrument settings, software update, and system verification). When not logged into a user profile, these menu options will appear to be inactive.

**Q. Is there a way to verify that my Qubit 4 or Qubit Flex fluorometer is functioning properly?**

**A.** Qubit 4 and Qubit Flex System Verification Assay Kits offer a fast, easy-to-use, reagent-based method to test the internal components of a Qubit fluorometer. Perform the system verification when a problem with the instrument is suspected. It is not necessary to perform verification regularly.

**Q. How long does the lamp last?**

**A.** There are two LED light sources in the Qubit 4 and Qubit Flex fluorometers. They are expected to last 5 years.



# Support documents

Qubit fluorometer technical resources are below—gain quick access to user guides, technical and application notes, and citations. Learn more at [thermofisher.com/qubitresources](http://thermofisher.com/qubitresources).

invitrogen
Qubit Flex Fluorometer

APPLICATION NOTE

### Accurate and precise quantification of up to 8 samples simultaneously using the Qubit Flex Fluorometer

**Introduction**  
Fluorescence and UV absorbance are the basis of two methods that are typically used to quantify DNA, RNA, and protein. The Invitrogen™ Qubit™ family of fluorescence-based quantification instruments has a new member: the Qubit™ Flex Fluorometer. Like the Invitrogen™ Qubit™ 4 Fluorometer, the Qubit Flex Fluorometer is a benchtop device designed for highly accurate quantification of DNA, RNA, and protein. Both the Qubit 4 Fluorometer and the new Qubit Flex Fluorometer use highly specific Invitrogen™ Qubit™ assay reagents, which contain a highly selective dye that emits fluorescence only when bound to the target molecule. Qubit assay reagents are available for dsDNA, ssDNA, RNA, and protein. Additionally, these optimized assays have been formulated to cover a broad concentration range of the target molecule.

The Qubit Flex Fluorometer increases quantification throughput with the ability to measure up to 8 samples simultaneously (Figure 1). The time it takes to generate quantification measurements compared to single-sample readers is significantly less, due in part to a 50% reduction in hands-on time. In addition to saving time, the ability to measure 8 samples simultaneously helps reduce variability, resulting in highly reproducible data.

**Materials and methods**  
**Speed of quantification**  
To measure the time needed to quantify an increased number of samples, the Invitrogen™ Qubit™ 1X dsDNA HS Assay Kit (Cat. No. Q3283) was tested on the Qubit 4 Fluorometer and the Qubit Flex Fluorometer. The Invitrogen™ Qubit™ dsDNA HS Assay Kit (Cat. No. Q3284) was tested using another supplier's single-channel fluorometer that does not offer a 1X reagent solution workflow. Lambda DNA was diluted to 4 concentrations (0.1, 1, 5, and 10 ng/μL) and prepared and measured in replicates of 2, 6, 12, and 24 to obtain the desired final number of samples. The time required to prepare and quantitate 1, 6, 24, 48, and 96 samples on the Qubit 4 Fluorometer, Qubit Flex Fluorometer, and another supplier's single-channel fluorometer was recorded. The sample volume was 10 μL, and the working solution volume was 100 μL.

**Results**  
**Assay comparison**  
The Qubit Flex Fluorometer and Qubit 4 Fluorometer utilize three standards consisting of a blank, a small degraded DNA, and a large intact DNA. Samples are introduced using the multiplexed pipette method, and the two emission regions are combined using a proprietary algorithm to yield a quality score representative of the size of the sample. The Invitrogen™ Qubit™ 4 Fluorometer method is easy to use, and the working solution volume was 100 μL.




Figure 1. The Qubit Flex Fluorometer increases throughput to quantify DNA, RNA, or protein from 1-8 samples simultaneously.

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**Application note: Accurate and precise quantification of up to 8 samples simultaneously using the Qubit Flex Fluorometer >**

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Qubit RNA IQ Assay Kit

APPLICATION NOTE

### Qubit RNA IQ Assay: a fast and easy fluorometric RNA quality assessment

**Abstract**  
The quality of RNA samples is paramount to any downstream application involving the nucleic acid. The ability to quickly and easily measure RNA quality is essential for the most sensitive and accurate results. These methods are time-consuming, expensive, and prone to errors in handling. To overcome these challenges, our response to nucleic acid quality was developed to generate an accurate, robust, and easy-to-use assay for the Invitrogen™ Qubit™ 4 Fluorometer that enables fast and easy measurement of RNA quality.

**Introduction**  
Using two dyes with two separate emission channels, one that selectively binds to degraded RNA and another that selectively binds to large and intact RNA, we have developed a fluorometric assay based method to quickly assess the integrity of RNA within a sample. To enable this assay, the Qubit system was adapted as the Qubit 4 Fluorometer (allowing multiplexed assays and new user interface features on the instrument), which enables use of a single size in nucleic acid workflow. As a result, the use of RNA assessment assay kit enables the measurement of RNA quality in as little as 10 minutes.

**Results**  
**Assay comparison**  
The Qubit Flex Fluorometer and Qubit 4 Fluorometer utilize three standards consisting of a blank, a small degraded RNA, and a large intact RNA. Samples are introduced using the multiplexed pipette method, and the two emission regions are combined using a proprietary algorithm to yield a quality score representative of the size of the sample. The Invitrogen™ Qubit™ 4 Fluorometer method is easy to use, and the working solution volume was 100 μL.



Figure 1. RNA IQ assay workflow on the Qubit 4 Fluorometer.

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**Application note: Qubit RNA IQ Assay: a fast and easy fluorometric RNA quality assessment >**

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Qubit 1X dsDNA assays

TECHNICAL NOTE

### Qubit 1X dsDNA assays: simplified workflow and improved performance

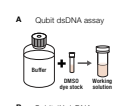
**Introduction**  
Nucleic acid quantification is a critical component of genomic research techniques, including next-generation sequencing (NGS), gene expression analysis, and polymerase chain reaction (PCR). Often, fluorescence is used to obtain accurate and precise measurements of DNA concentration prior to these methods. Invitrogen™ Qubit™ instruments and assays enable rapid and reliable fluorescence-based quantification of nucleic acids with as little as 1 μL of sample.

Both standard Qubit assay kits and the latest 1X assay kits are highly selective for dsDNA over RNA, ssDNA, and free nucleotides. Additionally, these assays tolerate many contaminants common to nucleic acid isolation and purification workflows. Here we demonstrate the performance of the standard Invitrogen™ Qubit™ dsDNA high sensitivity (HS) and dsDNA broad range (BR) assays and the latest Qubit 1X dsDNA HS and BR assays.

To further simplify the nucleic acid quantification workflow, Invitrogen™ Qubit™ 1X assays were developed. These assays feature ready-to-use working solutions, each with a specially formulated fluorescent dye and assay buffer (Figure 1). The 1X formulations enable users to simply combine their DNA samples with the provided 1X working solution without the need for assay preparation. The 1X working solution can be used reliably for 6 months after receipt, while working solutions prepared from standard Qubit dsDNA assay kits are intended to be used within 3 hours of preparation.

Both standard Qubit assay kits and the latest 1X assay kits are highly selective for dsDNA over RNA, ssDNA, and free nucleotides. Additionally, these assays tolerate many contaminants common to nucleic acid isolation and purification workflows. Here we demonstrate the performance of the standard Invitrogen™ Qubit™ dsDNA high sensitivity (HS) and dsDNA broad range (BR) assays and the latest Qubit 1X dsDNA HS and BR assays.

**Workflow comparison for (A) Qubit dsDNA and (B) Qubit 1X dsDNA assays.**  
Standard Invitrogen™ Qubit™ dsDNA High Sensitivity (HS) and Qubit™ dsDNA Broad Range (BR) Assay Kits include a fluorescent dye, buffer, and dsDNA standards. Prior to each assay, a fresh aqueous working solution needs to be prepared by diluting the dye stock in the provided buffer in a 1:200 ratio. Qubit 1X dsDNA assay kits eliminate this step by providing a ready-to-use working solution.



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**Technical note: Qubit 1X dsDNA assays: simplified workflow and improved performance >**

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### DNA reference guide


Sample preparation and purification solutions

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### RNA reference guide

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Qubit Library Quantification Kit

TECHNICAL NOTE

### Understanding library quantification assays for next-generation sequencing applications

**Introduction**  
Next-generation sequencing (NGS) has become an important method for applications ranging from genotyping to whole genome sequencing. To perform an NGS experiment, users must prepare a sequencing library from a purified nucleic acid sample. Library preparation for Illumina™ NGS systems involves adaptation of the nucleic acid sample with read oligonucleotides, strand IV and PT detection, that can take 1-2 days.

With the increasing capacity of NGS instrumentation contributing to this, researchers are able to pool more samples, or libraries, into a single sequencing run, greatly reducing the per sample cost of sequencing. However, NGS library concentrations vary widely, based on the amount and quality of nucleic acid of sample inputs, as well as the target enrichment method that is used. In order to ensure that each pooled library is sequenced to the desired depth, NGS libraries must be carefully quantified and normalized so that each sample achieves the required number of reads.

Common library quantification methods include fluorometric, spectrophotometric, and quantitative PCR (qPCR). While both methods provide relatively accurate measurement of library concentration, there are associated considerations associated with these techniques. In this document, we provide a comparison of two library quantification techniques: the Invitrogen™ Qubit™ dsDNA HS Assay Kit and the Invitrogen™ Qubit™ Library Quantification Kit, which utilize qPCR as the backbone. Qubit™ fluorometric, respectively Qubit™ HS also provide a comparison of the Qubit™ Library Quantification Kit and the Qubit™ Library Quantification Kit for Illumina platforms.

**Table 1. Comparison of Qubit and another library quantification assay.**

Assay	Qubit Assay	Another Assay
Quantification	Fluorescence	qPCR
Sample Input	1-10 μL of library prep	10-100 μL of library prep
Reaction Time	1-2 min	1-2 hr
Reaction Temp	37°C	60-65°C
Time to process 96 samples	10 min	30 min
Time to process 96 samples	10 min	30 min

The Qubit dsDNA HS assay is a fluorometric assay that uses dsDNA binding dyes in order to accurately determine NGS library concentration and benefits from a simple workflow that takes just a few minutes per sample. With the Qubit dsDNA HS assay, there are good accuracy and variability, the system is designed to meet samples one at a time and the workflow does not scale well above 20-30 samples.

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**Technical note: Understanding library quantification assays for next-generation sequencing applications >**

# Ordering information

Instruments and accessories	Unit size	Cat. No.
<b>Qubit 4 Fluorometer</b>		
Qubit 4 Fluorometer (w/ Wi-Fi)	1 instrument	Q33238
Qubit 4 Quantitation Starter Kit (w/ Wi-Fi)	1 kit	Q33239
Qubit 4 NGS Starter Kit (w/ Wi-Fi)	1 kit	Q33240
Qubit 4 RNA IQ Starter Kit (w/ Wi-Fi)	1 kit	Q33241
Qubit 4 Protein BR Assay Starter Kit (w/ Wi-Fi)	1 kit	A51292
Qubit Assay Tubes	500 tubes	Q32856
Qubit 4 System Verification Assay Kit	50 assays	Q33237
<b>Qubit Flex Fluorometer</b>		
Qubit Flex Fluorometer	1 instrument	Q33327
Qubit Flex NGS Starter Kit	1 kit	Q45893
Qubit Flex Quantitation Starter Kit	1 kit	Q45894
Qubit Flex Assay Tube Strips	125 tube strips	Q33252
Qubit Flex Assay Reservoirs	100 reservoirs	Q33253
Qubit Flex System Verification Assay Kit	50 assays	Q33254

Product	Initial sample concentration (ng/μL)	Quantitation range (ng)	No. of assays	Cat. No.
<b>DNA quantification assays</b>				
<b>dsDNA HS assays</b>				
Qubit 1X dsDNA HS Assay Kit	0.005–120	0.1–120	100	Q33230
			500	Q33231
Qubit dsDNA HS Assay Kit	0.005–120	0.1–120	100	Q32851
			500	Q32854
Qubit 1X dsDNA HS Assay Lambda Standard	-	-	-	Q33233
<b>dsDNA BR assays</b>				
Qubit 1X dsDNA BR Assay Kit	0.2–4,000	4–4,000	100	Q33265
			500	Q33266
Qubit dsDNA BR Assay Kit	0.2–2,000	4–2,000	100	Q32850
			500	Q32853
Qubit 1X dsDNA BR Assay Lambda Standards	-	-	-	Q33263
<b>ssDNA and oligos assay</b>				
Qubit ssDNA Assay Kit	0.05–0.2	1–200	100	Q10212

Product name	Initial sample concentration	Quantification range	No. of assays	Cat. No.
<b>RNA quantification assays</b>				
Qubit RNA HS Assay Kit	250 pg/μL and 100 ng/μL	5–100 ng	100	<b>Q32852</b>
			500	<b>Q32855</b>
Qubit RNA BR Assay Kit	1 ng/μL to 1 μg/μL	20–1,000 ng	100	<b>Q10210</b>
			500	<b>Q10211</b>
Qubit RNA XR Assay Kit	10 ng/μL and 10,000 ng/μL	200–10,000 ng	100	<b>Q33223</b>
			500	<b>Q33224</b>
Qubit microRNA Assay Kit	50 ng/mL to 100 μg/mL	1–1,000 ng	100	<b>Q32880</b>
			500	<b>Q32881</b>

Product name	Size	Cat. No.
<b>RNA IQ assays</b>		
Qubit RNA IQ Assay Kit	75 assays	<b>Q33221</b>
	275 assays	<b>Q33222</b>
Qubit RNA IQ Standards	1 set	<b>Q33235</b>

Product name	Instrument	Initial sample concentration	Size	Cat. No.
<b>Protein assays</b>				
Qubit Protein Assay Kit	Qubit Flex, Qubit 4	12.5 μg/mL to 5 mg/mL	100	<b>Q33211</b>
			500	<b>Q33212</b>
Qubit Protein BR Assay Kit	Qubit 4	100 μg/mL to 20 mg/mL	100	<b>A50668</b>
			500	<b>A50669</b>

Find out more at [thermofisher.com/qubit](https://thermofisher.com/qubit)