








Base pairs Nanogram in loading (ul)

		10ul	5ul	2ul	1ul
2k		200	100	40	20
1k		100	50	20	10
700		70	35	14	7
500		50	25	10	5
300		30	15	6	3
100		10	5	2	1
50		10	5	2	1

Number of bands: There are 7 DNA bands totally. Only a high percentage gel ($\geq 2.5\%$) will separate and detect 50 and 100 bp DNA bands.

Range of molecular weight: 50 bp to 2k bp

Storage conditions: 4 °C for 6 month or room temperature for 6 weeks.

Recommended Loading: 5ul/lane

Loading: It is supplied in ready-to-load buffer. No further mixing with dyes or glycerol is required. It is stored at liquid condition. No thawing and refreezing are needed. Different loading volume will give different quantity of DNA in each band while the size of each band will remain the same.

Staining: The gel is stained by EtBr in both the agarose gel and its running buffer at 0.5 ug/ml. Similar results will be obtained from other DNA staining procedures.

FAQs about QuantDNA™50-2k

How much should it be loaded?

Recommended loading for this DNA standard is 5 ul. However other volumes may be loaded depending on gel and loading well sizes. For large gel with big loading wells, 10 to 20 ul may be loaded. For mini gel with small wells, 2 to 2.5 ul may be loaded. Most agarose gel can detect 1 ng DNA band (Molecular Cloning, Sambrook et al). Under most electrophoretic conditions, most DNA bands in QuantDNA™50-2k DNA standard can be detected with EtBr staining even 1 ul is loaded. Some of the low amount DNA bands such as 50, 100, and 200 bp bands may not be clearly visible by naked eyes, but they can be detected by a regular digital camera.

How accurate is the quantity determination?

QuantDNA™50-2k DNA standard is prepared by CsCl double banding. Extensive efforts have been made to ensure its quantity accuracy. If a UV reading gives different quantity than it is determined by our standards, our quantification is more accurate. This is simply because of contaminations of DNA samples with impurities in the UV readings. These

contaminations will not affect the quantity determination when using our standards.

Can we use this standard on buffer-less gel?

Yes. When you load this standard on a buffer-less gel, make sure you add some water in the same well to fill half of the well. Otherwise the DNA bands can not be well separated.

Can we use a density scanner to determine quantity with this standard?

Of course. Make sure the gel is evenly stained when you compare different DNA bands on the gel. If the gel is not evenly stained or EtBr is running off the bottom of the gel, the quantity will not be accurate. Our standards may be used to calibrate a density scanner.

Why are low or high molecular weight (MW) DNA bands sometimes not resolved or detectable?

Above figures are prepared from an 1% agarose gel with our gel buffer (cat # 41001). When regular buffers are used, only high percentage gels ($\geq 2\%$) will separate and detect low MW DNA bands.

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