

ClearBand DNA Marker 1kb-Blue

Troubleshooting Guide

500 µL / 100 loads; 3 x 500 µL / 300 loads

Cat No: DM1000, DM10003

Use this guide for common loading, band-visibility, and size-reference problems encountered with ClearBand DNA Marker 1kb-Blue. The ready-to-load ladder contains 13 DNA bands from 250 bp to 10 kb; the 1,000 bp and 3,000 bp bands have increased intensity as reference points.

Before You Start - Quick Checks

1. Mix gently by pipetting up and down several times before use.
2. Load 5 µL of the ready-to-load marker directly into the gel well.
3. Expect 13 bands spanning 250 bp to 10 kb.
4. Use the brighter 1,000 bp and 3,000 bp bands as quick reference points.
5. The supplied band masses are based on a 5 µL ladder load.
6. Store at 4°C for up to 3 months or at -20°C for up to 24 months.

Problem	Most likely cause	Recommended action
Some ladder bands are faint or missing	The marker may not have been mixed before loading, too little may have been loaded, or gel/imaging conditions may not resolve the full range.	Mix gently by pipetting and load the specified 5 µL. Confirm that the gel and run conditions are suitable for resolving fragments from 250 bp to 10 kb.
The 1 kb or 3 kb band appears brighter than neighboring bands	These two bands are intentionally supplied at increased intensity as quick reference points.	This is expected. Use the 1,000 bp and 3,000 bp bands to orient the ladder pattern.
All bands appear weak	The loaded volume may be lower than 5 µL or visualization conditions may be insufficient.	Load 5 µL of the ready-to-load marker and verify the gel-staining and imaging system.
Bands appear overloaded or broad	More than the recommended marker volume may have been loaded or the well may be too small for the applied amount.	Return to the specified 5 µL loading volume and use an intact well.
Band sizes appear inconsistent	The ladder may be interpreted without accounting for gel concentration or run behavior.	Use the marker as a size reference and compare sample migration to the known 13-band pattern. Ensure the electrophoresis system can resolve the size range of interest.
DNA mass estimation is inconsistent	Band-mass information is specified for a 5 µL ladder load.	Use a 5 µL ladder load when comparing sample intensity with the provided approximate band masses.
Ladder lane is smeared	The marker may have been physically degraded, overloaded, or the gel/run may be problematic.	Use a properly stored aliquot, load 5 µL, and compare with a fresh gel or buffer if smearing affects other lanes as well.
Marker does not enter the well cleanly	The well may be damaged or loading may be too rapid.	Pipette slowly into the center of an intact well. The ladder is ready-to-load and does not require additional loading dye.
Pattern changes after storage	The marker may have been stored beyond the recommended interval or repeatedly handled.	Use the stated storage conditions: up to 3 months at 4°C or up to 24 months at -20°C.
Sample and ladder are difficult to compare	The gel may not adequately resolve the sample fragment range.	Choose electrophoresis conditions appropriate for the target sizes and use the 1 kb and 3 kb enhanced bands to orient the ladder.

Still having trouble? Mix the ladder gently, load exactly 5 µL, and verify that the gel can resolve the 250 bp-10 kb range. Use the enhanced 1 kb and 3 kb bands as pattern anchors and confirm storage history if the lane remains weak or smeared.