Real-Time Quantitative PCR System
Superlative optics for superior results
Superior Optical Module

- Homogenous illumination with the proprietary Light Tunnel technology of Bioneer
- Difference of intensity between wells
- No need to use reference dye for normalization
- All 5 channels are used for actual experiments

Advanced Optical Module and Detection System

- Obtain fluorescence data from all 96 wells at once with our highly sensitive 2-dimensional CCD
- No time-lag between wells
- Bright, white light from our Short Arc lamp provides uniform intensities for all colors
- Light Path Mask eliminates non-well light contribution

Reproducible Cts & Wide Linear Dynamic Range
Real 5-color Multiplex PCR

<table>
<thead>
<tr>
<th>Filter</th>
<th>Excitation</th>
<th>Emission</th>
<th>Fluorescence dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>490 nm</td>
<td>520 nm</td>
<td>FAM, SYBR Green I</td>
</tr>
<tr>
<td>2</td>
<td>520 nm</td>
<td>550 nm</td>
<td>JOE, TET</td>
</tr>
<tr>
<td>3</td>
<td>550 nm</td>
<td>580 nm</td>
<td>TAMRA, Cy3</td>
</tr>
<tr>
<td>4</td>
<td>580 nm</td>
<td>610 nm</td>
<td>Texas Red, ROX, Red610</td>
</tr>
<tr>
<td>5</td>
<td>630 nm</td>
<td>680 nm</td>
<td>Cy5, Red670</td>
</tr>
</tbody>
</table>

- 5-color multiplexing is available without reserving a channel for reference dye
- Filter 4 can be used for detecting target, not reference
- Individual filter for each excitation wavelength results in maximum fluorescence for each dye
- Eliminate the fluorescence overlap between dyes when designing multiplex experiments

Powerful Data Acquisition and Processing Algorithms

Artifacts are removed from raw fluorescence data by:

- Well Quantitation Algorithm
- Fluorescence Intensity Normalization Algorithm
- Background Subtraction Algorithm
- Cross-Talk Compensation Algorithm

All the basic data analysis steps are automatically done by the following carefully designed algorithms:

- Amplification Success/Fail Decision Algorithm
  Corrects errors when any well with an amplified sample is mistakenly assigned as empty
- Baseline Decision Algorithm
  Determines the proper baseline for any possible type of amplification plot
- Threshold Decision Algorithm
  Determines the proper Ct value
Final results of data analysis are obtained by the software with the following characteristics:

- Individual probe based analysis provides flexibility in experimental design
- Statistically sound and automatic decision for all analysis modules
- Core parameters and options are user adjustable for the fine tuning of analysis results
- A flexible area detection method for Melting Curve Analysis (SYBR Green I)

Full Featured Analysis Modules with User-Friendly GUI

**Absolute Quantification**

The Ct values of samples are plotted on a standard curve to allow absolute quantification of unknown samples.

**Relative Quantification**

The relative expression levels of a target gene are compared among different samples.

**Existence/Nonexistence Assay**

The existence and nonexistence of pathogen are determined.

**SNP Genotyping**

Homozygous and heterozygous alleles are determined for a SNP site.
Well-to-well Uniformity

These data were obtained to compare temperature homogeneity of the 96-well block among the qPCR instruments. Exicycler™ 96 of Bioneer shows 0.11 Standard Deviation of temperature at around 90°C, while the others show 0.25 and 0.15, respectively.

Other Convenient and Powerful Function

- Self Diagnosis
  Detects hardware and software problems through a self-diagnosis protocol each time the system is turned on
- Motorized Loading Tray
  Supports automation using robotics for large scale experiments
- Post-Run Assignment
  The data from all 96 wells are always acquired and kept
- Time and Temperature Increment
- Uniform Block Heating
  Heat sink with thermal-tunnel guarantees uniform block heating
- Standard Format Consumables
- No moving parts except for the loading tray and filter wheel
  Reliable, quiet operation and low maintenance

Superlative Optics for Superior Results

Related products:

- Reagents
- Plasticware
- Primer and probe

*Bioneer manufactures high quality consumables optimized for Exicycler™ 96.
### Specifications

<table>
<thead>
<tr>
<th>System specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension (mm)</td>
</tr>
<tr>
<td>Weight (kg)</td>
</tr>
<tr>
<td>Sample capacity size</td>
</tr>
<tr>
<td>Sample volume</td>
</tr>
<tr>
<td>Power consumption</td>
</tr>
<tr>
<td>Operating temperature</td>
</tr>
<tr>
<td>Operating humidity</td>
</tr>
</tbody>
</table>

### Thermo module specifications

- Method of heating / cooling: Peltier
- Temperature range: 4.0 °C ~ 99.9 °C
- Temperature accuracy: ± 0.3 °C
- Temperature uniformity: ± 0.5 °C
- Heating and cooling rate: Max. 2.5 °C/sec
- Temperature increment range: 0.1 °C ~ 2.0 °C
- Time increment range: 1 sec ~ 60 sec

### Computer specifications

- Operating system: Windows XP & Windows 7 (32 - bit OS only, S/W version 3.54.4 or later)
- Processor speed: Intel Dual Core E2160 (1.8 GHz) or higher
- Memory: 1GB or higher
- Communication port: USB 2.0 high speed
- Screen resolution: 1280 x 1024 or higher

### Optics specifications

- Light source: Short arc lamp (120W)
- Sensor: 16 - Bit 2D CCD
- Excitation filter / Emission filter: 5 Sets

### Ordering Information

<table>
<thead>
<tr>
<th>Cat. no.</th>
<th>Product Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-2060</td>
<td>AccuPower DualStar™ qPCR PreMix, 20 µl reaction, 1 x 96-well plate, optical sealing film included</td>
</tr>
<tr>
<td>K-6100</td>
<td>AccuPower DualStar™ qPCR PreMix, 20 µl reaction, 12 x 8-strip tubes (96 rxns), optical sealing film included</td>
</tr>
<tr>
<td>K-6103</td>
<td>AccuPower DualStar™ qPCR PreMix, 20 µl reaction, 1 x 96-well plate, optical sealing film included</td>
</tr>
<tr>
<td>K-6110</td>
<td>AccuPower DualStar™ qPCR PreMix, 50 µl reaction, 12 x 8-strip tubes (96 rxns), optical sealing film included</td>
</tr>
<tr>
<td>K-6113</td>
<td>AccuPower DualStar™ qPCR PreMix, 50 µl reaction, 1 x 96-well plate, optical sealing film included</td>
</tr>
<tr>
<td>3111-52</td>
<td>Opaque white 96-well semi-skirted PCR plate for Real-Time PCR, 25 plates</td>
</tr>
<tr>
<td>3111-50</td>
<td>Opaque white 0.2 ml 8-strip PCR tubes for Real-Time PCR, 250 strips</td>
</tr>
<tr>
<td>3111-41</td>
<td>Adhesive Optical Sealing Film for Real-Time PCR, 100 sheets</td>
</tr>
</tbody>
</table>

The specifications of this product can be changed without notice.

### Contact Us

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