Biometrics
Quality of life

LIGHTGene

Real-Time PCR System

Design to go anywhere

Biometrics Technologies, Inc.

LIGHTGene Pro

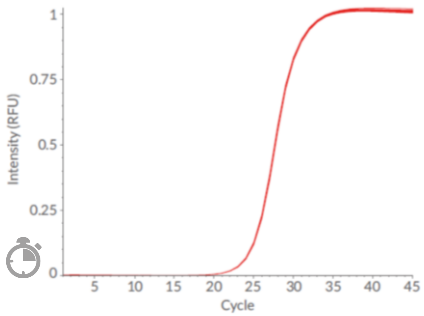
PERFORMANCE MADE EASY

LIGHTGene Mini

PERSONAL PRECISION

LIGHTGene Pro

The LIGHTGene Pro real-time PCR instrument provides performance in a convenient format. Novel Full Spectrum Optics deliver 120 optical channels of fluorescence data from every tube in parallel, with no moving parts, flexible fibres for reliable multiplex PCR. High performance Peltier elements, and solid silver blocks, provide both speed and world leading thermal uniformity. The result is rapid, precise, quantitative PCR and melting point analysis. Advanced algorithms combined with an intuitive user interface support a broad range of applications, operating systems and connection options. Performance made easy…

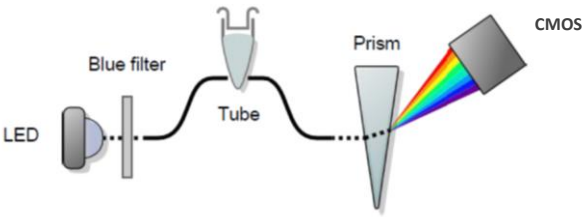


16 replicate PCR amplifications performed in 33 minutes. 45 cycles of 95°C (10 seconds), 55°C (10 seconds). Input template 10,000 copies of viral DNA.

High Performance Real-Time PCR System

RELIABILITY

The LIGHTGene Pro has been designed, with no moving parts, made and tested to exacting standards. The result is a highly reliable instrument

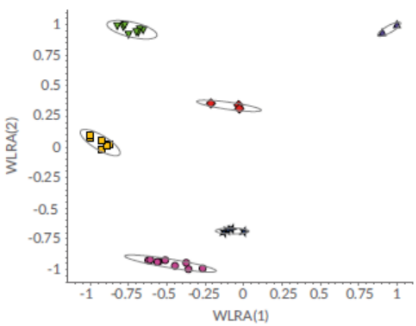


SPEED

With heating rates of 5°C per second and cooling rates of 4°C per second the LIGHTGene Pro is one of the fastest systems available. No other system matches this speed with convenient to use disposables. The system demonstrates excellent quantitative precision and speed, with 45 cycles of PCR in 33 minutes. Typical qPCR systems take much longer than this to deliver results.

EASY ANALYSIS

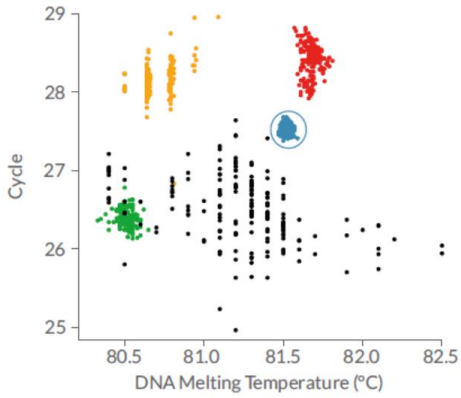
The LIGHTGene Pro system comes with easy-to-use software, and robust, high performance algorithms provide accurate results from complex data. Automated analysis of complex HRM data makes this powerful technique more accessible to non-experts, and minimize operator-dependent variability in data analysis. Automated report generation makes life easier for service providers, and users operating within GLP quality systems.



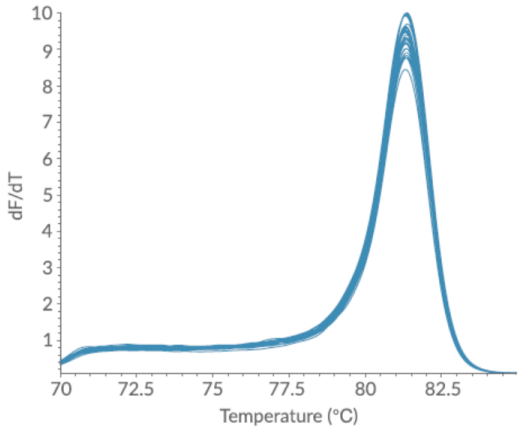
32 human DNA samples classified into 6 different genotypes by automatic clustering of HRM data.

PRECISION AND PERFORMANCE

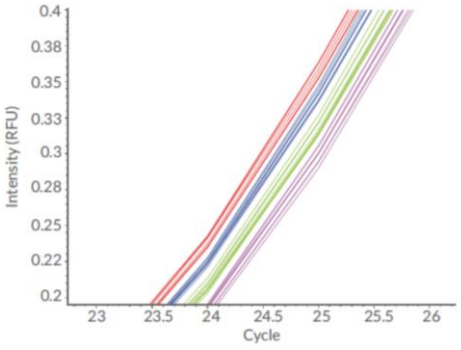
The LIGHTGene Pro demonstrates superior intra-run and inter-run analytical precision in absolute and relative DNA quantification and melting point analysis. Users can now address biological phenomena with subtle effects on gene expression, or pathogen levels, for example discriminating 10% differences in transcript concentrations. For users performing HRM based analysis of genetic variants, the combination of thermal control, optical data quality and HRM data analysis of the LIGHTGene Pro system provide compelling functionality. The system can discriminate all classes of SNP, including Class 4 SNPs via HRM.



192 replicate PCRs performed in each of five different qPCR systems, including the LIGHTGene Pro (circled).



32 replicate reactions, amplified and melted, standard deviation of Tm 0.020°C. Input template 10,000 copies of viral DNA



8 replicate PCR amplifications from 5ng (red), 4.5ng (blue), 4.05ng (green) and 3.65ng (pink) of human cDNA.

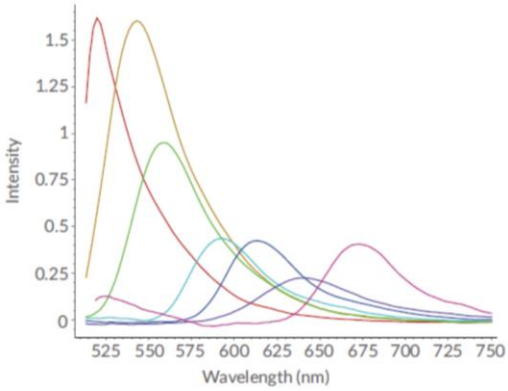
7 different targets in a single reaction

MULTIPLEX WITH FULL SPECTRUM OPTICS

Novel Full Spectrum Optics provide 120 channels of wavelength dependent optical data from every well every time. No other qPCR system offers this number of optical channels.

Full Spectrum Optics, combined with advanced matrix deconvolution technology, enable the simultaneous analysis of at least 7 different targets in a single reaction (7-Multiplex) each monitored with a different colour of fluorescent label.

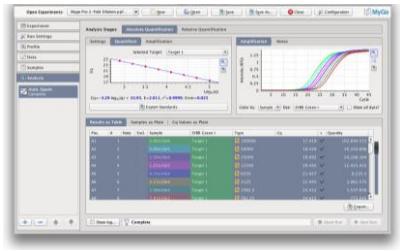
The LIGHTGene Pro comes pre-calibrated for 20 different fluorescent labels, and the software enables users to use any dye with an emission maximum between 510nm and 750nm. No other qPCR system provides the user with this level of flexibility.

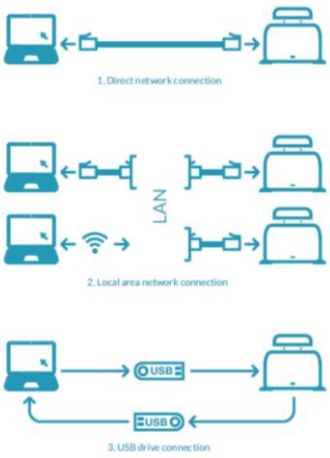


Fluorescence emission of 7 different hydrolysis probes acquired during qPCR

COMPATIBILITY

The LIGHTGene Pro software can be installed on Mac OS X, Windows and Linux operating systems. Use your computer and your choice of operating system.
The LIGHTGene Pro software does not require a dedicated computer, so users do not need to find the space, or money for an additional computer to run the system. In addition the software enables the user to control multiple instruments and simultaneously analyse multiple runs with one computer.





SOFTWARE ANALYSIS

QUANTIFICATION

Determine accurate quantities of template or relative expression levels of genes using **Absolute Quantification** or **Relative Quantification**

GENOTYPING

Use TaqMan Probes or High Melting Resolution to perform SNP genotyping using **Automatic Endpoint Genotyping** or **Automatic High Resolution Melt (HRM).**

MELTING

Automatically determine the melting temperature of your amplicons using **Automatic Tm Calling (Melting Curve Analysis).**

SPECIFICATION

Dimensions	W 25cm × D 27cm × H 23cm
Weight	7kg
Operating noise	<40 dB
Electrical Voltage Frequency Power	 100-240V AC ±10% 50-60Hz ±10% 170W
Number of reactions	32 for 0.1ml tubes and/or 8-tube strips
Reaction Volume	10-100µl
Temperature control Method Range Speed	 Peltier 37-99°C 5°C/s heating / 4°C/s cooling
Run time	< 40 minutes
Temperature control Resolution Uniformity Accuracy	 0.01°C 0.05°C (SD) ±0.25°C

Fluorescence excitation	495-505nm (blue LED)
Fluorescence detection	510-750nm (CMOS camera)
Fluorescence channels	120 optical channels
Sensitivity	Single copy detection
Dynamic Range	9-log
Precision	1.1 fold discrimination
Factory calibrated dyes	SYBR Green I, ResoLight, FAM, VIC, HEX, Yellow 555, Red 610, Texas Red, Cy5, CAL 540, CAL 560, CAL 590, CAL 610, CAL 635, JOE, Pulsar 650, Quasar 570, Quasar 705, ROX, TAMRA, TET
Dye compatibility	ABY, NED, Cy3, JUN, Mustang Purple
User chosen custom dyes	Yes
Supported assay formats	Inter-chelating dyes (e.g. SYBR Green I), Hydrolysis Probes, Molecular Beacons, SimpleProbes, HybProbes
Connection options	LAN, Direct connection to computer (RJ45), PC-free(USB stick)

LIGHTGene Mini

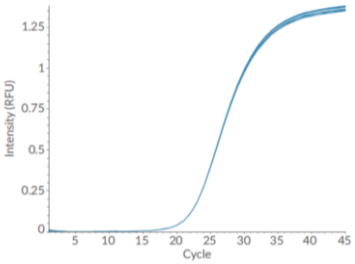
The LIGHTGene Mini is the world's most compact real-time PCR instrument, with no moving parts, enabling silent operation and maximum reliability. High performance Peltier elements, and solid silver blocks, provide both speed and world leading thermal uniformity. It provides users with great results over a broad range of applications. Personal precision…

EASY ANALYSIS

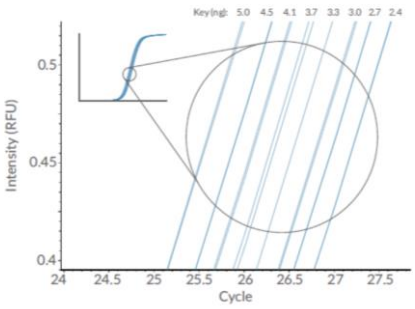
The LIGHTGene Mini system comes with easy-to-use software, and robust, high performance algorithms which provide accurate results from complex data.

PRECISION AND PERFORMANCE

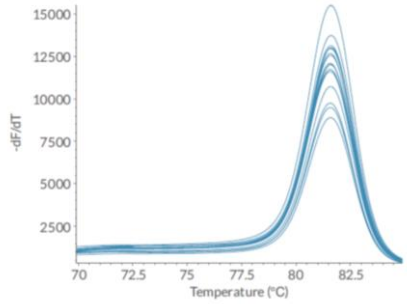
The LIGHTGene Mini demonstrates superior intra-run and inter-run analytical precision in DNA quantification and melting point analysis.



16 replicate PCR amplifications of a human gene target. Input template 5ng of total human cDNA per reaction. Average Cq 21.4 cycles, standard deviation 0.015 cycles.



Duplicate PCR amplifications for 6 different concentrations of human cDNA, from 5ng per reaction to 2.4ng per reaction, in a 1.1 fold dilution series.



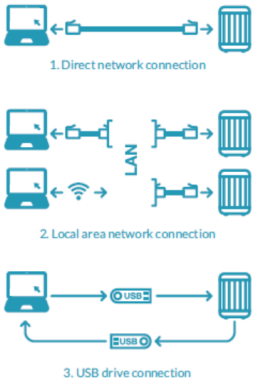
16 replicate reactions, amplified and melted. Input template 10,000 copies of viral DNA per reaction. Average Tm 81.7ºC, standard deviation 0.015ºC.

SOLID-STATE RELIABILITY

The LIGHTGene Mini is the world's first completely solid-state real-time PCR machine, with no moving parts. The LIGHTGene Mini has been designed to last, then made and tested to exacting standards. The result is a silent, highly reliable instrument, with the option of a 3 year extended warranty.

CONNECTIVITY

The LIGHTGene Mini software does not require a dedicated computer, unlike some competitor instruments. So users do not need to find the space or money for an additional computer to run the system, and they can run the operating system that they are familiar with. In addition the LIGHTGene Mini software enables the user to control hundreds of instruments whilst simultaneously analyzing run data on one computer. No other qPCR system offers these benefits to the user.



COMPATIBILITY

The LIGHTGene mini software can be installed on Mac OS X, Windows and Linux operating systems. Use your computer and your choice of operating system.

SPECIFICATION

Dimension	W 12cm × D 12cm × H 16cm
Weight	2.5 kg
Operating noise	Silent
Electrical Voltage Frequency Power	 100-240V AC ±10% 47-63Hz 90W
Number of reaction	16
Format	0.1ml tubes
Reaction volume	10-100µl (20µl recommended)
Temperature control Method Range Speed	 Peltier 37-99°C 3°C/s heating, 1.5°C/s cooling
Run time	< 60 minutes
Temperature control Resolution Uniformity Accuracy	 0.01°C 0.05°C (SD) ±0.25°C
Fluorescence Excitation Detection	 495-505nm (blue LED) 510-560 (CMOS camera)
Multiplex level	Duplex
Sensitivity	Single copy detection
Dynamic range	9-log

Precision	1.1 fold discrimination
Factory calibration dyes	SYBR Green I, ResoLight, FAM, VIC, HEX, CAL540, CAL560
User selected custom dyes	Yes
Supported assay formats	Intercalating dyes (e.g. SYBR Green I), Hydrolysis Probes
Connection option	LAN, Direct connection to computer (RJ45), PC-free (USB stick)

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