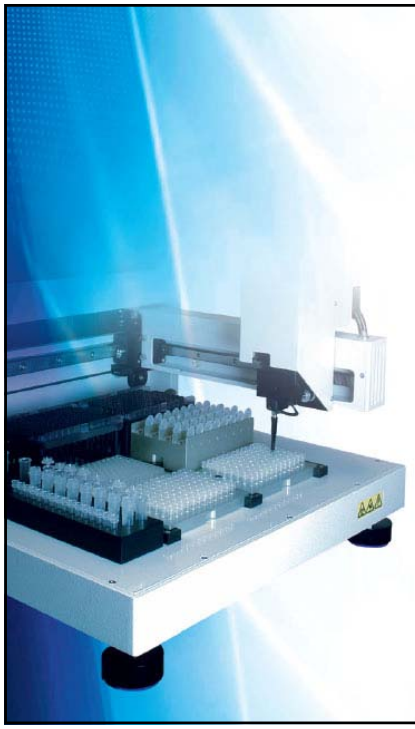

CAS-1200™

automated PCR setup

a Compact Robotic Workstation
for Precision Liquid Handling

www.PCRsetup .com

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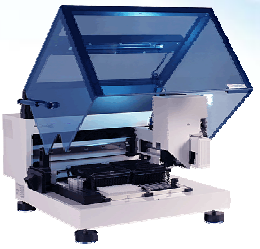
CAS-1200™

automated PCR setup

- Addresses the precision demands of quantitative PCR setup
- Compact size
- Easy to use
- Extremely versatile
- Inexpensive to own and operate

40 cm (19")

Why Automate PCR Set-Up?



- **Better reproducibility**
  day-to-day, laboratory-to-laboratory
- **Reduce artefacts from human error**
- **Reduce Costs**
  Use smaller reaction volumes
  Fewer mistakes mean fewer repeat experiments
- **Reduced risk of repetitive strain injuries for staff**
- **Set-up is the least fun, but most critical part!**
  The more experienced and careful you are the better the real-time PCR results—leaving it to a robot makes sense

CAS-1200™
automated PCR setup

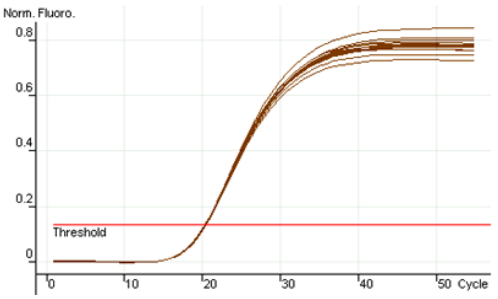
EXAMLE DATA

Real-time PCR analysis of robot-pipetted replicates

Lowest C_T 20.48

Highest C_T 20.66

C_T Std Dev 0.05



ß-actin samples from 12 wells set up in a in a 96-well plate (3 µL sample with 17 µL master mix)

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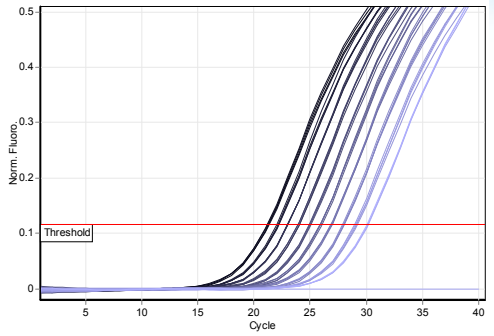
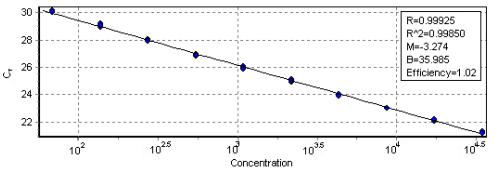
CAS-1200™
automated PCR setup

EXAMPLE DATA

Setup of a 2-fold Quantitative Amplification Series

- *Human genomic DNA template diluted into 2-fold standards by the CAS-1200*
- *Amplification reactions were set up in replicates of four by the CAS-1200 using human dilutions as template*
- *Target: human BCL-2 gene*
- *Rotor-Gene 6000 real-time rotary analyzer was used for amplification and analysis*
- *Plots show tight replicates with expected one-cycle difference between each 2-fold dilution*
- *Standard curve for this experiment is shown with statistical data (boxed)*





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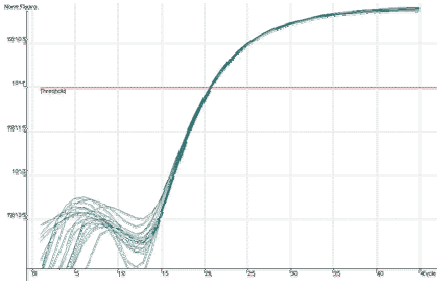
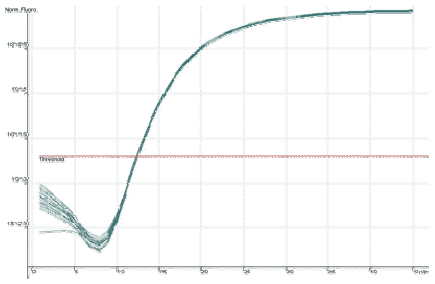
automated PCR setup

EXAMPLE DATA

Comparison of manual vs. hand pipetting

20 µL reaction volume, 18 replicates





Hand pipetting
C_T std dev 0.07

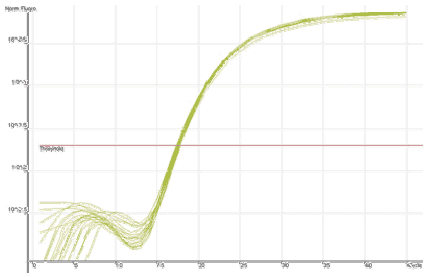
CAS-1200 robot
C_T std dev 0.05

CAS-1200™ automated PCR setup

EXAMPLE DATA

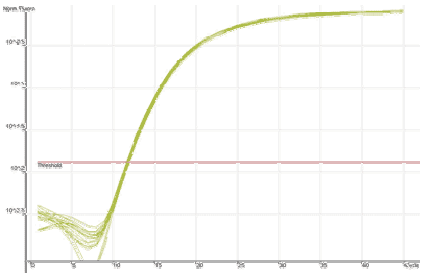
Comparison of manual vs. hand pipetting

15 µL reaction volume, 18 replicates



Hand pipetting

C_T std dev 0.11



CAS-1200 robot

C_T std dev 0.07

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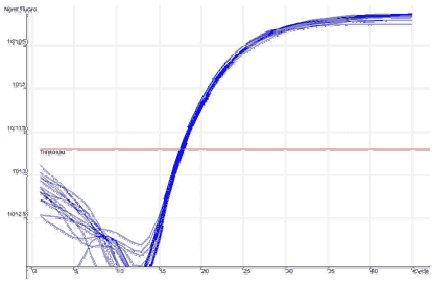
CAS-1200™ automated PCR setup

EXAMPLE DATA

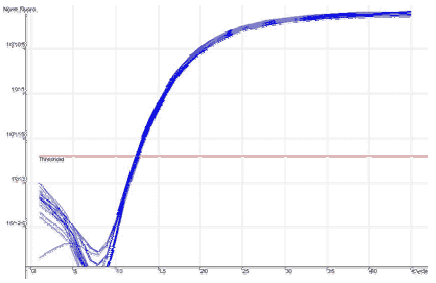
Comparison of manual vs. hand pipetting

10 µL reaction volume, 18 replicates



Hand pipetting

C_T std dev 0.12



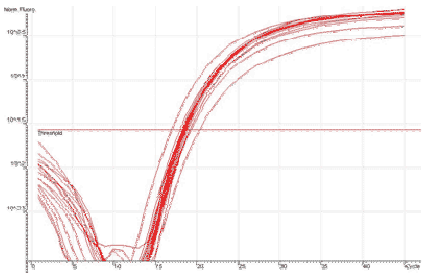
CAS-1200 robot

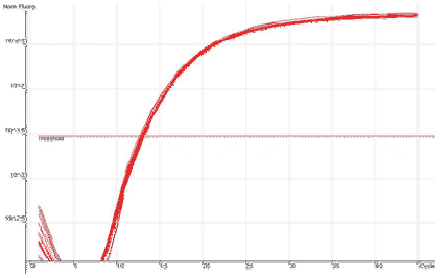
C_T std dev 0.10

EXAMPLE DATA

Comparison of manual vs. hand pipetting

5 µL reaction volume, 18 replicates

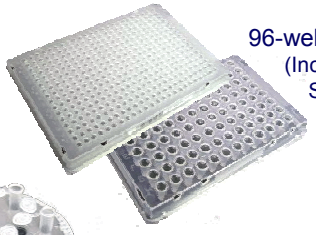




Hand pipetting
C_T std dev 0.64

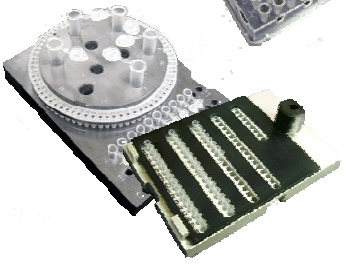
CAS-1200 robot
C_T std dev 0.12

Supports all amplification and real-time PCR formats



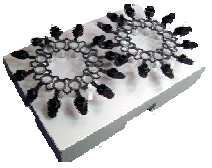
96-well and 384-well
(Incl. all ABI, Roche, Bio-Rad, Stratagene, Eppendorf etc. instruments)

SmartCycler™ Tubes



Rotor-Gene™ 0.2 mL, 0.1 mL and Gene-Disc™ formats

LightCycler™ Capillaries



Roche COBAS™

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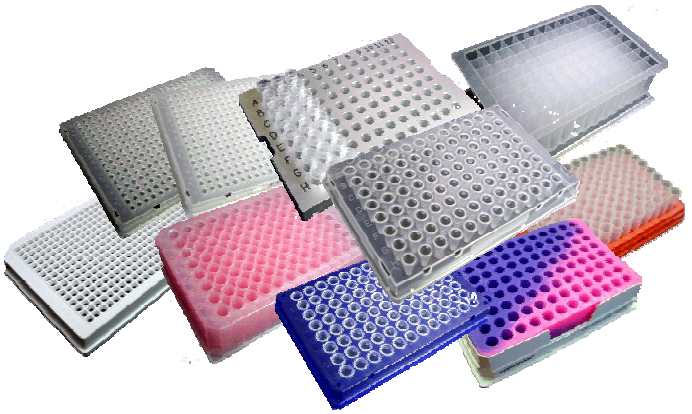
CAS-1200™
automated PCR setup

96 and 384-well support



Compatible with plates, tubes, tube racks, cooling blocks etc

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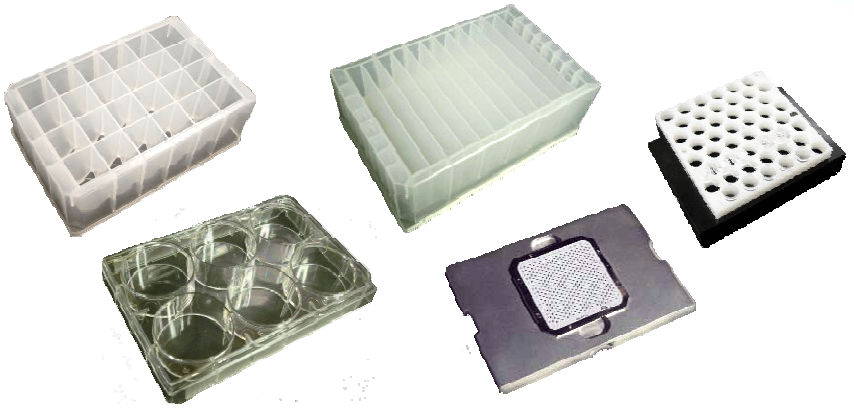
CAS-1200™
automated PCR setup

Unusual formats are also supported



Including: MALDI plates, ELISA plates, reservoir plates, etc, etc

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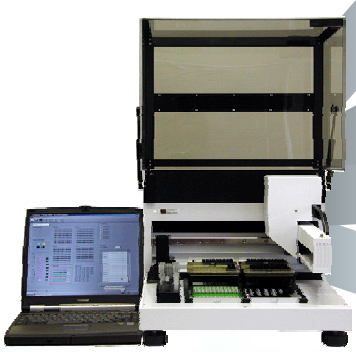
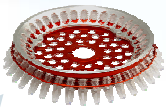
CAS-1200™
automated PCR setup

Support for Rotor-Gene rotary tube formats





0.2 mL tubes

0.1 mL tubes

Gene-Disc™ 72

Gene-Disc™ 100

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CAS-1200™
automated PCR setup

Direct setup of Rotor-Gene Gene-Disc™ tube format

Vertical tube orientation means a robot can set up all reactions directly into a Gene-Disc plate (both 72-well and 100-well discs)

Heat Sealer provides a permanent or removable seal (user selectable)

Gene-Disc rotor ready for cycling

CAS-1200™
automated PCR setup

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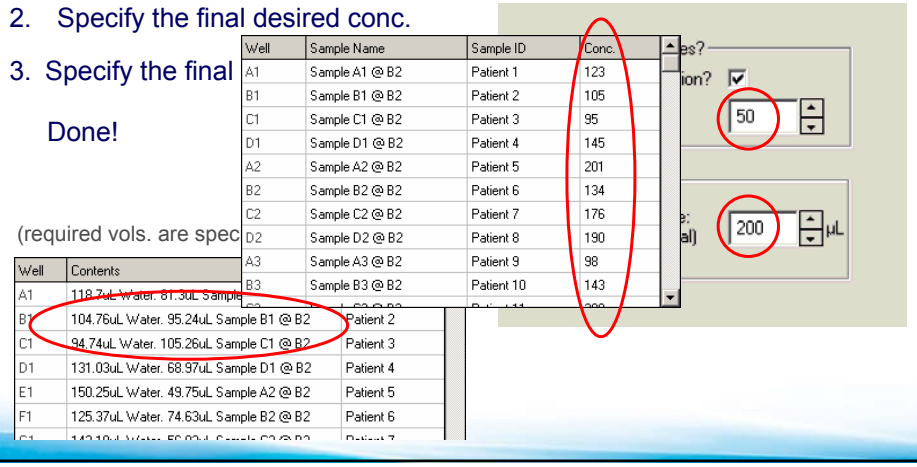
Automatic normalization of sample concentrations

1. Specify the input concs. of each starting sample in the sample sheet
2. Specify the final desired conc.
3. Specify the final

Done!



CAS-1200™
automated PCR setup

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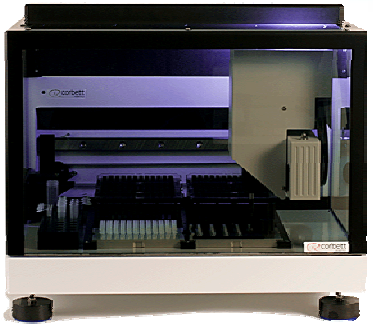
Features

- Integrated cover
- Single channel pipetting
- UV light sterilisation option
- HEPA filter option
- Variety of plate configurations
- Variety of mixing possibilities
- Software wizards to setup standard and real-time PCR



CAS-1200™
automated PCR setup

Pipetting

- Single pipetting head
- Pipette volumes as low as 1 µL
- < 1% C.V. at 5 µL vol.
- Uses filtered Tecan or Capp style 50 µL and 200 µL tips
- Conductive tips are supported with optional liquid level sensing

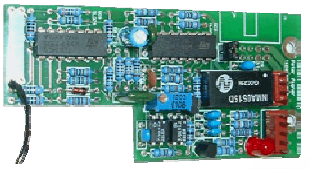
Ready-racked Capp style tips

Tecan Genesis style conductive tips

CAS-1200™
automated PCR setup

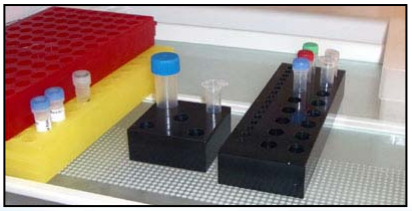
Liquid level sensing (LLS)

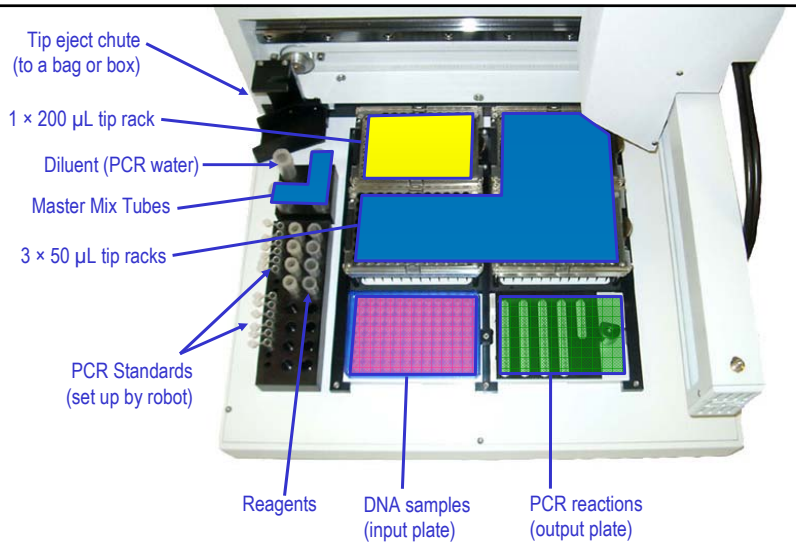
- Optional circuitry
- Uses conductive tips
  (black, carbon impregnated)
- Liquid sensing as low as 10 µL
- Curbs tip immersion artifacts



Reagents and Master Mixes

- Removable Master Mix and Reagent block
- Can be refrigerated to keep reagents cool
- Many configurations available
- Custom versions available for master mix and reagent positions





Typical deck layout for PCR set-up

CAS-1200™
automated PCR setup

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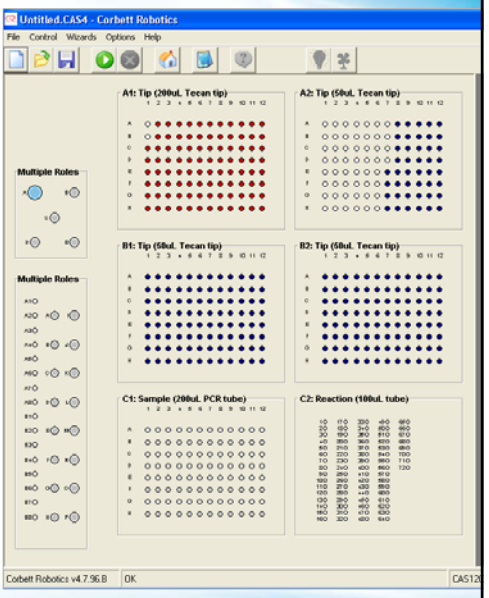
CAS-1200™

automated PCR setup

Software

- Intuitive layout—simple to learn
- Standard PCR components included
- Prepare Master Mixes and controls
- Set-up of standards (dilution series)
- Normalize sample concentrations
- Tip re-use options
- Import/Export of sample names
- Pre- and Post run reports
- Virtual mode aids new protocol testing
- Most versatile software available



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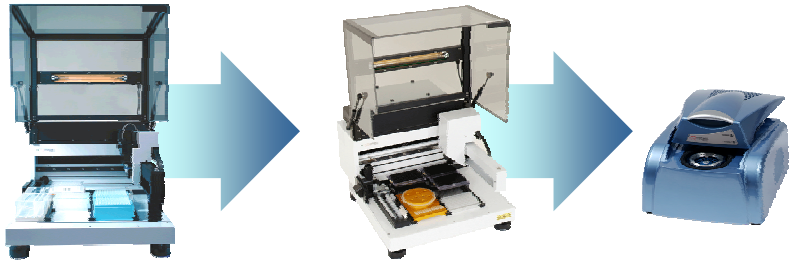
Robotic Workflow for Real-Time Analysis



X-tractor Gene™
automated nucleic acid extraction

CAS-1200™
automated sample setup

Rotor-Gene™
real-time rotary analyzer

"Extraction-to-Reaction"

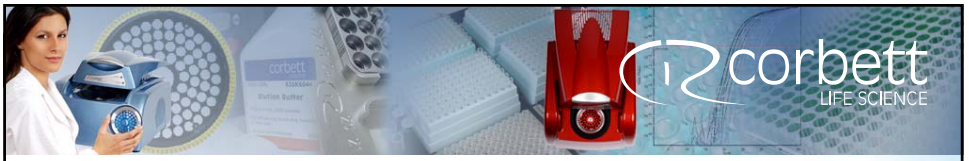
Standard objections to robotics

- Luxury—only for big labs
  - CAS-1200 costs less than a real-time instrument
  - Introduces a new generation of *personal* robotic workstation
- Running costs are too high
  - Robotic tips are now similar in cost to regular tips
  - In fact, overall ***savings*** can be made on reagents & fewer repeat expts.
- Robots are too big—"we have no space"
  - Only 49 cm (19.3″) wide—a fraction the size of similar equipment
- Difficult to use/can't be bothered learning to use it
  - Try the software and see! We are happy to arrange a demonstration.

CAS-1200™
automated PCR setup

Summary

- Low cost, small, simple to operate personal robot
- High precision for real-time PCR setup
- Low volume reaction setup saves reagent cost
- Useful for many laboratory projects
- Reduce human error and repetitive strain injury issues
- Versatile; set up in 96-well, 384-well or wide range of other tube types
- Single head for precision and cherry-picking of any sample
- Optional Liquid Level Sensing, UV light sterilization & HEPA filter options



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