

BUSINESS REFERENCES

Map of Business Cases and Customers



www.mcqinst.com
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MAIN Categories

Results from our sales history data comparison

CONTROLLED & MODIFIED ATMOSPHERES

List of Companies:

ROCHE
YALE UNIVERSITY
STANFORD UNIVERSITY
DUKE UNIVERSITY
UCLA UNIVERSITY
BERKELEY UNIVERSITY
COLORADO STATE
...MORE

TEST & SAMPLING MIXTURES

List of Companies:

SOTACARBO
EOSENSE

SENSOR CALIBRATIONS

List of Companies:

SGX SENSORTECH
PROFUSA

DILUTIONS

List of Companies:

POLYSENSE
CALITECH
NANYANG UNIVERSITY
LA SAPIENZA UNIVERSITY

CONTROLLED & MODIFIED ATMOSPHERES

ROCHE DIAGNOSTIC

F. Hoffmann-La Roche AG is a Swiss multinational healthcare company that operates worldwide. Its holding company, Roche Holding AG, has bearer shares listed on the SIX Swiss Exchange. The company headquarters are located in Basel.

Application:

Roche uses our gas blender to prepare gas mixtures **to adjust aqueous solutions** to given gas values for an analysis instrument.

Gas Type: N₂, O₂, CO₂

E-Mail Quote:

Dear Mister Canuti, what you describe is precisely what we are looking for. We would like to mix N₂, O₂, and CO₂. Thank you for the quotation. After comparing other alternatives as well, it looks like the MCQ instrument is our favorite and suits our needs. We are in discussion with our site safety group to see where and how we could install the instrument. Once this is over, we will likely place the order.

Product Purchased: GB3000: 3 Channels Standard Flow (0-5 lpm for channel

Country: SWITZERLAND



Manufacturer

Test & Measurement

Pharmaceutical

Medical Tech

Novartis International AG is a Swiss multinational pharmaceutical company based in Basel, Switzerland. It is one of the largest pharmaceutical companies by both market capitalization and sales.

Application:

Novartis creates test Gas Mixture to have different condition (Hypoxia, Hyperoxia, etc.) in a small chamber to monitoring Growing Tissue under a microscope.

“We are using the MCQ Gas Blender 100 to create blended gas concentration to change the conditions inside a small chamber to investigate the effect of drugs on different tissues”

Gas Type: N₂, O₂, CO₂, Air.

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA (Boston)

MAYO CLINIC

The Mayo Clinic is a nonprofit academic medical center based in Rochester, Minnesota, focused on integrated clinical practice, education, and research. It employs more than 4,500 physicians and scientists, along with another 58,400 administrative and allied health staff.

Under Development

Gas Type: Air, O₂, CO₂

Product Purchased: Different GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA

Life Science

Cell Culture



Life Science

Health Care

Test & Measurement

STANFORD UNIVERSITY

Medical Faculty –Department of Radiology

2nd University in the world by QS Ranking. It is an American private research university in Stanford, California. Stanford is known for its academic strength, wealth, proximity to Silicon Valley, and ranking as one of the world's top universities.

Application:

Stanford uses our gas blender to **create Hypoxia condition on tumoral cell culture.**

Gas Type: N2, Air, O2.

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA

YALE UNIVERSITY

Neuroscience Yale School of Medicine

15th University in the world by QS Ranking. It is a private research university in New Haven, Connecticut. Founded in 1701, it is the third-oldest institution of higher education in the United States and one of the nine Colonial Colleges chartered before the American Revolution.

Application:

Yale uses our gas blender to **create Hypoxia, Hyperoxy, Hypercapnia conditions on cell culture.**

Gas Type: N2, Air, O2, CO2

Product Purchased: GB3000: 3 Channels StandardFlow (0-5 lpm for channel)

Country: USA



Stanford
University

Life Science

Cell Culture

Medical Research



Yale University
School of Medicine

Life Science

Cell Culture

Medical Research

26th University in the world by QS Ranking. Duke University is a private research university in Durham, North Carolina. Founded by Methodists and Quakers in the present-day town of Trinity in 1838, the school moved to Durham in 1892.

Application:

Hyperoxia, hypercapnia condition on cell culture for medical studies on Blood Gas Analysis.

Gas Type: N2, O2, CO2.

E-Mail Quote: "I forward here the best deal I've been able to get from MCQ in Italy. Giuseppe Canuti has been a great help in this. If you have the funds I recommend the apparatus, particularly since you folks do or may have the Spectrophotometer for the assembly of the entire apparatus".
Mr. Bonaventura

Product Purchased: 3xGB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA

COEMI SRL

Coemi currently operates in the Oil & Gas, Chemical, Petrochemical, Civil, Military, Pharmaceutical, Food, Manufacturing and Alternative Energy markets.

Application:

SME/CEMS, Analyzer Calibration, UNI 14181

Gas Type: N2, O2, CO2

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: ITALY

Incubator

Cell Culture



Test &
Measurement

Analyzer
Calibration

UCSF UNIVERSITY + BERKELEY

Different Departments – Shared Project between two Universities

27th University in the world by QS Ranking. The University of California, San Francisco is a public research university in San Francisco, California. It is part of the University of California system and it is dedicated entirely to health science.

Application:

Flowing mixed gases into a small environmental chamber that will cover a special device for **culturing cell**, on the stage of an automated microscope.

Gas Type: N₂, O₂, CO₂

E-Mail Quote: "The one MCQ Blender I bought two years ago is working very well. I like the machine I want two more"

Product Purchased: 3xGB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA

VANDERBILT UNIVERSITY

Department of Physics & Astronomy

Vanderbilt University is a private research university in Nashville, Tennessee. Founded in 1873

Application:

Control N₂, O₂, CO₂ for an incubator. Create different atmosphere condition inside an incubator. **Cell culture.**

Gas Type: N₂, O₂, CO₂

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA

UCSF

University of California
San Francisco



Incubator

Cell Culture



VANDERBILT
UNIVERSITY

Life Science

Cell Culture

Medical Research

UCLA UNIVERSITY + SOUTHWESTERN MEDICAL C.

Medical Faculty –Department of Neurology and Neurotherapeutics

32th University in the world by QS Ranking. The University of California, Los Angeles is a public research university in Los Angeles. It became the Southern Branch of the University of California in 1919

Application:

Creating **Hypoxia, Hyperoxy, Hypercapnia condition on cell culture.**

Gas Type: N2, Air, O2, CO2

E-Mail Quote: "He bought first GB100 when he was working in UT Southwestern Medical Center, in Texas. After 2 years he moves to UCLA and he acquires 2 new units."

Product Purchased: 3xGB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA



UT SOUTHWESTERN
MEDICAL CENTER

Incubator

Cell Culture

Medical Research

COLORADO STATE UNIVERSITY

Department of health and exercise science

It is a public research university in Fort Collins, the state's land grant university and the flagship university of the Colorado State University System.

Application:

Hypoxia and Hypercapnia Conditions.
Mixing O2 (18% -0%), CO2 (5-9%) and N2 to balance mixture for research experiment.

Gas Type: N2, O2, CO2

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA



Health Care

Cell Culture

Medical Research

Physiology

42th University in the world by QS Ranking. It is an Australian public research university in Sydney. The first Australian university and it is regarded as one of the world's leading universities.

Application:

Creating specific hypoxic environments.

The University of Sydney were seeking a solution for their study about Cell culture and intermittent hypoxia (low oxygen).

Thanks to our instruments they can now customize a timed protocol of different periods of different oxygen levels to test on their cancer cells grown in culture.

The Gas Mixer makes cancer research into the effects of low oxygen (tumor hypoxia) **much easier and with a less complicated equipment setup**

Business Case:

<https://www.mcqinst.com/wp-content/uploads/2019/03/Business-Case-University-of-Sydney-WEB.pdf>

Scientific Paper:

<https://www.mdpi.com/1424-8220/7/7/1317>

Gas Type:

N₂, O₂, Air.

Product Purchased:

3xGB100: 3Channels micro-Flow
(0-0.5 lpm for channel)

Country:

AUSTRALIA

EPFL UNIVERSITY OF LAUSANNE

School of Life Sciences, Swiss Federal Institute of Technology in Lausanne (EPFL)

22th University in the world by QS Ranking. TOP 10 in Europe

Application:

Hypoxia and Hypercapnia Conditions. Mixing O₂ (18% -0%), CO₂ (5-9%) and N₂ to balance mixture for research experiment. Stress and Host Immunity Amplify Mycobacterium tuberculosis Phenotypic Heterogeneity and Induce Nongrowing Metabolically Active Forms.

Gas Type: N₂, O₂, CO₂

Product Purchased: 4xGB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: SWITZERLAND

UNIVERSITY OF BARCELONA

Medicin Faculty – Biophysics Department

Top200 University in the world by QS Ranking

Application:

Cyclic changes in PO₂ to a PDMS (poly dimethylsiloxane) chip subject cultured cells to **intermittent hypoxia** for several days

Business Case: Coming Soon

Scientific Paper: <https://www.frontiersin.org/articles/10.3389/fphys.2016.00319/full>

Gas Type: N₂, O₂, CO₂

Product Purchased: 4xGB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: SPAIN



Life Science

Cell Culture

Medical Research



UNIVERSITAT DE
BARCELONA

Life Science

Cell Culture

Medical Research

Roskilde University is a Danish public university founded in 1972 and located in Trekroner in the Eastern part of Roskilde. The university awards bachelor's degrees, master's degrees, and Ph.D. degrees in a wide variety of subjects within social sciences, the humanities, and natural sciences.

Application:

Costant Oxygen concentration in Aquarium:

"I need gas blender(s) for aquatic laboratory set-ups.

Working with invertebrate physiology. I need gas blender(s) for e.g. 6-8 aquaria simultaneously supplied by gasses resulting in different oxygen levels in the water. I need a system with feedback facility to ensure a constant oxygen concentration in the aquarium water. We need to keep water in small chambers and up to aquaria with e.g. 50L of seawater with a certain oxygen concentration for periods of hours to weeks"

Gas Type: N2, O2, Air.

Product Purchased: 3xGB2000: 2 Channels Standard Flow (0-5 lpm for channel)

Country: DENMARK



Life Science

Marine Appl.

TEST AND SAMPLING MIXTURES

SOTACARBO SPA

Sustainable Energy Research Centre

Application:

Create different **Test & Sampling Mixtures** for:

- (GC) Gas Chromatography
- (GC-MS) Gas Chromatography
 - Mass Spectrometry
- (TGA) Thermogravimetric analysis
- UV-VIS Spectrophotometer
- TPD/R/O – FT – IR – XRD

They had difficulties to create test or calibration mixtures for the instruments above. They needed more flexibility and they wanted to avoid acquiring too many pre-mixed cylinders. With our instrument they only need pure gases, in this way they can save money, time and space

Gas Type: N₂, O₂, CO₂, CO, H₂

E-Mail Quote:

"We often work with gases and it was quite difficult to find a solution to calibrate our instruments. Currently we work with pre-mixed cylinders, but that is obsolete and expensive. We would need a gas mixer with a wide range of settings capable to mix until 4 different sources per time.

Product Purchased: GB3000: 3 Channels Standard Flow (0-5 lpm for channel

Country: ITALY



Test &
Measurement

R & D

CO₂
Hydrogenation
Reaction

Application:

Creating gas mixtures to calibrate equipment.

"We are using the MCQ Gas Blender PRO software to create blended gas concentration programs to calibrate equipment. We sample from the outlet of the blender using a Picarro G2508 Analyzer as a reference"

Gas Type: N2, O2, CO2.

Product Purchased: 3x GB100: 3 Channels micro-Flow
(0-0.5 lpm for channel)

Country: CANADA

Manufacturer

Test &
Measurement

Gas Monitoring

SENSOR CALIBRATIONS

SGX SENSOR TECH
Sensor Manufacturer

Application:

Sensor Calibration.

"we would require blending of 100% methane with air/nitrogen in 20% steps (100,80,60,40,20). We would also use 5% methane for lower concentration mixtures". "Is it possible to use ie. 5% vol. CH4 balanced nitrogen mixture on one channel and 100% nitrogen on second channel to be able to mix them to get 20% LEL? Using 100% vol. CH4 is always a risk that we would want to avoid if not necessary".

(Custom Cylinder functionality in our Software. No-one else has this feature)

Gas Type:	N2, O2, CO2, CH4, etc
Product Purchased:	GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)
Country:	UK



Manufacturer

Test & Measurement

Sensor Calibration

Manufacturer

Test &
Measurement

Sensor
Calibration

Application:

Creating gas mixtures to test and calibrate biosensors.

"We are using the MCQ Gas Blender 100 to create blended gas concentration to test and calibrate our biosensors"

Gas Type: N2, O2, CO2, Air

Product Purchased: Several GB100: 3 Channels
mico-Flow (0-0.5 lpm for channel)

Country: USA

DILUTIONS

LA SAPIENZA UNIVERSITY

Department of Chemical, Materials, and Environmental Engineering

Top 200 University in the world by QS Ranking

Application:

Semiconductor Photocatalysis – **dilution of NO_x from 400 ppm to 500 ppb** using the Gas Blender.

Mail Quote:

Standard dictates to measure the overall capacity of the photocatalyst in removing the nitrous oxide, NO_x, using an air flow containing NO and NO₂ (1 ppmv) within an average test time of 5.0 h in lighting condition and with a flow rate of 1.5 L/min. The level of exhaust used is about 500 ppbv. Given the low stability and the difficulty to find a gas test cylinder in such low concentrations, we decided to use a standard Mass Flow Controller to reduce through mixing ultrapure air at 500 ppbv of NO_x tanks as balance with standard cylinders with a concentration of 400 ppmv of NO and 400 ppmv of NO₂. Although, dynamic preparation of gas mix of this type and composition control of the mix itself with a Mass Flow Controller resulted mediocre due to the long response time and the high instability, for the long duration of the test (5h), in controlling low flow rate which, in time, led to inaccurate estimates of the efficiency of the photocatalyst and to the non-reproducibility of standard test conditions. Use of a MCQ GB 100 Series allowed to obtain the desired concentration within the photoreactor with a flow rate of 500 mL/min using ultrapure dry Air as balance gas and a NO_x mix as solute. A traditional method would require at least 2 mass flow controllers, an external control unit, a power supply, and a tubing system, plus a massive investment of time in pre-mixed ppb gas cylinders. This obsolete method would not neither solve the problem at its roots, because of a huge waste of time in gas delivering, and a substantial impossibility to dilute desired gas ratios with a certain stability. With MCQ Instruments, the Università La Sapienza required only a single Gas Blender 100 Series device and its Software in Pro Version. The simple combination of these two factors has made possible an exponential number of experiments, reducing time, efforts, investments and collecting much more results.

Business Case:

Read it now! ([Click here](#))

Gas Type:

N₂, Air, O₂, CO₂

Product Purchased:

2xGB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country:

ITALY



SAPIENZA
UNIVERSITÀ DI ROMA

R & D

Test &
Measurement

Sensor
Calibration

Analyzer

NANYANG UNIVERSITY

School of Materials Science and Engineering - Singapore

12th University in the world by QS Ranking (1st in Asia)

Application:

Dilution & Sampling Systems for Spectrometers, Gas Chromatography machine, etc.

Gas Type: N₂, O₂, CO₂

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: SINGAPORE

CALTECH UNIVERSITY

Environmental Science & Engineering

4th University in the world by QS Ranking. The California Institute of Technology is a private doctorate-granting research university in Pasadena, California. Known for its strength in natural science and engineering, Caltech is often ranked as one of the world's top-ten universities

Application:

Dilution & Sampling Systems for Spectrometers, Gas Chromatography machine, etc.

Gas Type: N₂, O₂, CO₂

Product Purchased: GB100: 3 Channels micro-Flow (0-0.5 lpm for channel)

Country: USA



NANYANG
TECHNOLOGICAL
UNIVERSITY

Chromatography

Test &
Measurement

Analyzer



Chromatography

Test &
Measurement

Analyzer

Application:

Dilution&Sampling Systems for Portable Hydrocarbon Spectrometers

The real time and in-situ analysis of natural gas composition is a powerful tool in oil&gas industry for estimating reserves, rock characterization and assisted drilling. The gas blender GB100 Series turned out to be a reliable and compact device for diluting the gas sample and generate a controlled flow to be directly fed to the spectrometer. With this configuration the sensor is able to operate in a comfortable range, measure the hydrocarbon concentrations and re-calculate the actual values according to the dilution ratio used.

Gas Type: N2, O2, CH4

Product Purchased: GB100: 3 Channels mico-Flow (0-0.5 lpm for channel)

Country: ITALY

AGC INSTRUMENTS

Gas Chromatographs & Analyzer Manufactures

Under Develpment

Gas Type: N2, O2, CO2

Product Purchased: GB100: 3 Channels mico-Flow (0-0.5 lpm for channel)

Country: UK

R&D

Test &
Measurement

Analyzer

Manufacturer

Test &
Measurement

Analyzer

Chromatography

GB 100 Series

3 Channels GAS Mixer

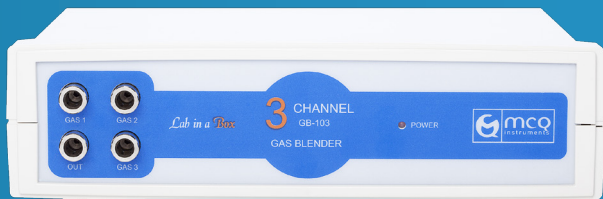
Each Channel: 0 - 500 mL/min

Accuracy: 1.0%

Repeatability: 0,16% of reading

Response time: 50 ms

Software bundle.



For MICRO Flows

Total Mixture Flow Rate: Up to 1,5 L/min



MCQ Instruments offers the best, cheapest & fastest solutions to manage, control, measure and create Gas Mixtures or Dilutions.

We produce advanced, certified, interconnected, & trusted technologies that can help you to achieve your goals without any efforts. From laboratories to industrial needs, we have the right product that will manage your gas processes with automation and an incomparable precision.

Contact us for any of your questions .

 <https://www.mcqinst.com>

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GB 6000 Series

6 Channels GAS Mixer

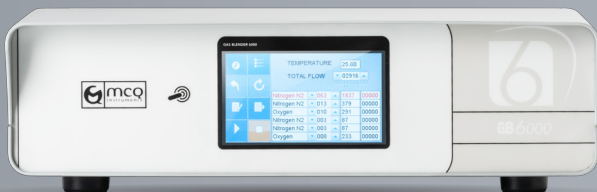
Each Channel: 0 – 5000 mL/min

Accuracy: 1.0%

Repeatability: 0,10% of reading

Response time: 500 ms

Software bundle / Touch Display.



For STANDARD Flows

Total Mixture Flow Rate: Up to 30 L/min

