

**GEM Premier 3000, now with iQM®**  
The New Standard for Critical Care Testing



# GEM Premier 3000™



pH, Blood Gas

Electrolytes

Metabolites

Hematocrit

CO-Oximetry

Coagulation



**GEM Premier 3000, now with iQM**

# Simple. Smart.

# Standard

**GEM Premier 3000 simplifies and enhances critical care testing. In addition to unique features such as its self-contained cartridge system and comprehensive menu options, the GEM Premier 3000 now offers Intelligent Quality Management (iQM), an internal, automated program that performs continuous quality management.**

### Simplicity

- Rapid whole blood testing for centralized and decentralized locations
- Disposable cartridge contains all components: sensors, solutions, waste bag, tubing, even the sampler
- Maintenance-free – just replace the cartridge two to four weeks
- Intuitive, easy-to-use touch-screen
- Basic operation learned in just minutes
- Cartridges stored at room temperature

### Customizable for Every Setting

Cartridge Size	ANALYTICAL MENU		
	Blood Gas Hct	Blood Gas Electrolytes Hct	Blood Gas Electrolytes Glu/Lac/Hct
35 Samples/4 Weeks	✓		
75 Samples/4 Weeks	✓	✓	
75 Samples/3 Weeks	✓	✓	✓
150 Samples/3 Weeks	✓	✓	✓
300 Samples/3 Weeks	✓	✓	✓
450 Samples/3 Weeks	✓	✓	✓
600 Samples/2 Weeks	✓	✓	✓



# dized.



## Reliability

- State-of-the-art planar sensors
- iQM for automatic, continuous, real-time quality control (QC)
- Analytical performance equivalent to the best traditional analyzers
- Demographic look-up and patient verification options

## Flexibility

- Standardized testing platform for use throughout the hospital – laboratory, respiratory care and point-of-care – with customized cartridges for every location
- Over 15 cartridge menu and size configurations
- CO-Oximetry and Coagulation modules

## Connectivity

- GEMweb® for remote system management from any network computer
- IMPACT™ for Critical Care total information management with scripted and EDI interface options

## Standardization for Efficiency and Cost-Effectiveness

With operating costs comparable to traditional blood gas instruments, the GEM Premier 3000 delivers superior performance and value in critical care testing.

- Identical test system, procedures and methodologies used throughout the hospital
- Ideal correlation between testing sites
- Assured laboratory-grade analytical performance throughout the hospital
- Assured cross-training of all operators
- Simplified training and supervision
- Simplified inventory management and LIS interface
- Efficient multi-use cartridges for added convenience and cost-effectiveness

pH, pCO<sub>2</sub>, pO<sub>2</sub>

Ca<sup>++</sup>, Na<sup>+</sup>, K<sup>+</sup>

Glucose, Lactate

Hct

THb, O<sub>2</sub>Hb, COHb, MetHb, RHb, SO<sub>2</sub>m<sup>†</sup>

Cit PT, PT, APTT, ACT, ACT-LR<sup>††</sup>

<sup>†</sup> with the optional GEM OPL™ or IL 682 CO-Oximeter modules  
<sup>††</sup> with the optional GEM PCL Plus Coagulation module

## GEM Premier 3000, now with iQM

# Intelligent Quality Mana

*“A new standard*

Available exclusively from Instrumentation Laboratory, iQM is an automated quality assurance system that replaces the use of conventional QC. iQM is designed to improve the quality of test results and enhance patient safety.

### Unmatched Quality Assurance

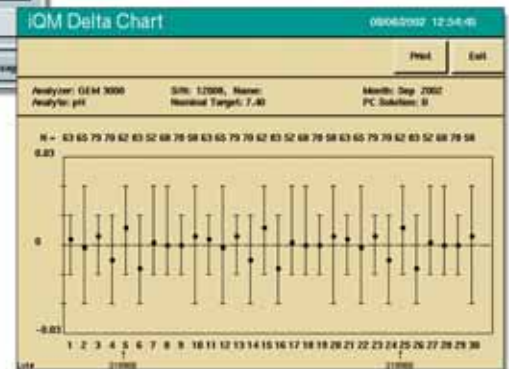
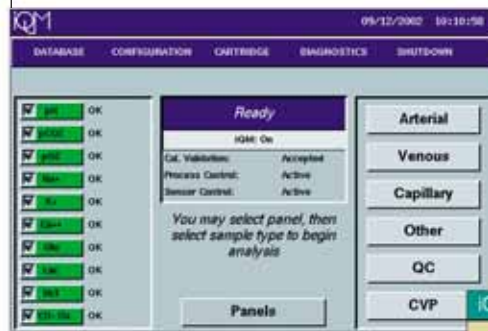
- Active, continuous, real-time quality processing
- Reduces time to error detection when compared to Auto QC
- Optimal quality control protocol followed at all times, regardless of time of day or level of operator training
- Generates reports for regulatory compliance

### Improved Patient Care

- Helps ensure the quality of each patient result
- Sensors are automatically disabled when errors are detected; and, re-enabled when errors are corrected

### Reduced Costs

- Performed automatically with no human intervention, including corrective action and documentation
- Eliminates labor costs associated with conventional QC
- Completely integrated within the GEM cartridge; eliminates external QC ampules and complex mechanical modules





# gement (iQM)

*for the future of QC”*

*James O. Westgard, PhD\**

## Reduces Error Detection Time from Hours to Minutes<sup>††</sup>

Analyte	pH	pO <sub>2</sub>	pCO <sub>2</sub>	Na <sup>+</sup>	K <sup>+</sup>	Ca <sup>++</sup>	Gluc	Lact	Hct
<b>iQM<sup>†</sup></b>	<b>3 min.</b>	<b>3 min.</b>	<b>3 min.</b>	<b>10 min.</b>	<b>3 min.</b>	<b>3 min.</b>	<b>7 min.</b>	<b>3 min.</b>	<b>3 min.</b>
<b>Traditional/Auto QC</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>	<b>≥8 hr.</b>

Statistical presentation of an average error detection time with 95% confidence.



## iQM vs. Other QC Methods<sup>††</sup>

iQM	Traditional QC	Electronic QC	Auto QC
<b>Continuous, real-time control</b>	Intermittent control	Intermittent control	Intermittent control
<b>Automatic corrective action</b>	Manual corrective action	Manual corrective action	Manual corrective action
<b>Automatic documentation</b>	Manual documentation	Manual documentation	Manual documentation
<b>Automated-operation</b>	Labor-intensive operation	Manual operation	Manual maintenance of external modules
<b>Integrated in GEM Premier 3000 cartridges</b>	Additional QC materials required	Additional QC simulators required	Additional QC and/or hardware required
<b>Total analytical system QC</b>	May leave errors undetected	Electronic component check only	May leave errors undetected  May not check the full fluidic pathway

† Represents average time to error detection during sample processing.

†† Data on file, Instrumentation Laboratory.

\* Professor, Pathology and Laboratory Medicine, University of Wisconsin and developer of “Westgard Rules.”

**GEM Premier 3000, now with iQM**

## Coagulation and CO-Oximeter Modules

### Work Consolidation Through Integrated Whole Blood CO-Oximetry and Coagulation Testing

The GEM Premier 3000 meets the demands of every testing location. The GEM PCL Plus (Portable Coagulation Laboratory) and the GEM OPL (Oxygenation Portable Laboratory) can be integrated with the GEM

Premier 3000 to create a consolidated critical care testing workstation. Testing capabilities include pH, Blood gas, Electrolytes, Glucose, Lactate, Hematocrit, CO-Oximetry and Coagulation on whole and citrated blood samples.

- Integrated QC and patient data
- Integrated interface with HIS/LIS or information management system
- Disposable cuvettes provide maintenance-free operation



**GEM PCL PLUS**

**GEM OPL**



# The Complete Solution in Critical Care Testing

Discover how the GEM Premier 3000 can help you enhance quality, increase efficiency and simplify testing in every area of your hospital.

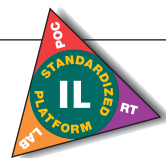
## GEM Premier 3000 Product Specifications

ANALYTES Measured Analytes	Displayed Ranges	Resolution
pH	6.80 to 7.80	0.01
pCO <sub>2</sub>	5 to 115 mmHg	1 mmHg
pO <sub>2</sub>	0 to 760 mmHg	1 mmHg
Na <sup>+</sup>	100 to 200 mmol/L	1 mmol/L
K <sup>+</sup>	0.1 to 20.0 mmol/L	0.1 mmol/L
Ca <sup>++</sup>	0.10 to 5.00 mmol/L	0.01 mmol/L
Glucose	20 to 500 mg/dL	1 mg/dL
Lactate	0.3 to 15.0 mmol/L	0.1 mmol/L
Hct	15 to 65%	1%

## GEM Premier 3000 Physical Specifications

INSTRUMENT
<p><b>Size and Weight in cm (inches)/kg (pounds)</b> Width 30.5 (12.0) Depth 30.7 (12.0) Height 43.2 (17.0) Weight 13.4 (29.5)</p>
<p><b>Power Requirements</b> Utilizes a switching power supply; accommodates 90-264 VAC, 50-60 Hz. Sixty-minute power interrupt allows transport without power. Instrument cannot be operated during power interrupt.</p>
<p><b>Temperature Control</b> Electrode chamber maintained at 37° C nominal</p>
<p><b>Data Output Port</b> 3 RS-232 Serial I/O Ports, 1 Parallel Printer Port, 1 Ethernet Port</p>
<p><b>Product Safety</b> UL listed under UL-544, complies with IEC 1010-1. Complies with European CE mark requirements.</p>
PAK
<p><b>Size and Weight in cm (inches)/kg (pounds)</b> Width 21.6 (8.5) Depth 7.6 (3.0) Height 15.2 (6.0) Weight 1.9 (4.2)</p>
<p><b>Capacity/Expiration</b> 35-, 75-test cartridges: 28-day use life (BG/Hct only) 75-, 150-, 300- or 450-test cartridges: 21-day use life 600-test cartridge: 14-day use life</p>
<p><b>Sample Volume</b> 135 µL (BG/Electrolytes/Hct); 145 µL Capillary Mode (BG/Electrolytes/Glu/Lac/Hct); 150 µL (BG/Electrolytes/Glu/Lac/Hct)</p>
<p><b>Sample Type</b> Whole blood with addition of approximately 25 USP Units/mL (IU/mL) Sodium or Lithium Heparin</p>
<p><b>Measurement Methodology</b> pH, pCO<sub>2</sub>, Na<sup>+</sup>, K<sup>+</sup>, Ca<sup>++</sup> — Potentiometric; pO<sub>2</sub>, Glu, Lac – Amperometric; Hct – Conductivity</p>
<p><b>Time to Result</b> 85 seconds from sample introduction</p>





### GEM OPL

*CO-Oximetry*  
THb, O<sub>2</sub>Hb, COHb,  
MetHb, RHb, SO<sub>2</sub>m



### IL 682

*CO-Oximetry*  
THb, O<sub>2</sub>Hb, COHb,  
MetHb, RHb, SO<sub>2</sub>m,  
FHb, SHb



### GEM PCL Plus

*Coagulation*  
Cit PT, PT, APTT,  
ACT, ACT-LR



### IMPACT for Critical Care

*Information  
Management*



## GEM Premier 3000, Now with iQM. Unrivalled Simplicity, Performance and Quality Control.

From the revolutionary iQM for quality control to its standardized testing platform, the GEM Premier 3000 delivers more. Unlike conventional QC, iQM is an internal automated program that provides continuous, real-time monitoring for unmatched quality assurance, enhanced patient care and reduced costs. And only the GEM Premier 3000 features standardization for increased simplicity, efficiency and reliability throughout your hospital. For the most advanced solution in critical care testing, discover the new standard—the GEM Premier 3000.

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