

MCL60

Fully Auto Chemiluminescence Analyzer



Superior immunoassay system of MCL60

Direct Chemiluminescence immunoassay (CLIA): sensitive, specific, rapid & simple

Chemiluminescence Immunoassay (CLIA) methodology, which is applicable for various clinical scenarios, has gained increasing attention because of its high sensitivity, specificity & wide linear range. There are two distinct mechanisms dictating the two types of CLIA, direct and indirect. MCL60 system applies **direct CLIA with acridinium ester (AE) label**.

The advantages of AE

Qualified Result

- ✓ Low light-emitting of background and high signal-noise ratio.
- ✓ Less disturbance from interference factors during reaction.
- ✓ Easy to conjugate with protein and doesn't result in reduction of photo yield.

Fast detection

- ✓ Quick light-emitting, high luminous efficiency and intensity.

Long Stability

- ✓ The marker has good stability which can store for one year under 2-8 °C.

More about AE label

AE is a non-enzyme chemiluminescent marker in direct chemiluminescence analysis. It can emit light in alkaline solution containing H_2O_2 and no catalyst required. The luminescent type of AE is flash light. When luminescent triggers ($NaOH$ & H_2O_2) are added, the light intensity reaches the peak in 0.4 seconds.



Advantage of MCL60

Convenience fit for Clinics & Accuracy fit for Labs



- ▶ Support whole blood, capillary blood, serum & plasma samples, equipped with integrated HCT module, support on-the-fly calibration.
- ▶ Easy to operate & straightforward user software, user friendly for non-professional operators.
- ▶ Fast & fully automated tests procedure with no need for manual sample pipetting steps.
- ▶ Stable & accurate assays with pg/mL sensitivity and a precision of $\leq 3\%$ CV, powered by direct CLIA technology.
- ▶ Up to 144 tests per hour on a 0.52x0.64 m² footprint, offering high efficiency in bench space usage.
- ▶ A comprehensive test menu that covers most assays a clinical lab requests.



Learn more about MCL60

- High throughput & small footprint
- Simple and easy operation
- Support whole blood/capillary blood/serum/plasma sample



Pipettor

- Sample/reagent pipetting with high speed and $\leq 10\mu\text{L}$ accuracy
- Automatic clot detection & liquid level detection
- Inner & external washing
- TEFLON coated probe to lower carry-over rate



Sample area

- Up to 20 samples on board
- All positions support STAT samples
- Continuous loading
- Automatic cooling
- Support different sample tubes

Reagent area

- Up to 8 reagents on board
- Built-in Automatic RFID reader for reagent info
- Continuous loading
- Automatic cooling



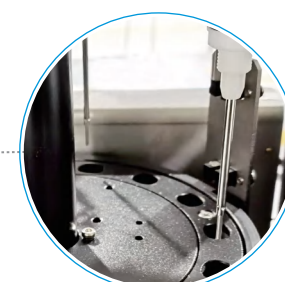
Incubator

- 36 independent incubating slots
- Constant temperature control of $37^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$



Detection module

- High-sensitivity and low-noise PMT
- Reaction vessel detection and anti-overflow function
- Light-signal reading with a precision of $\leq 1\%$ CV



Washer

- Strong magnetic field for fast & clean separation
- Three pairs of washing needles with anti-overflow function



Reaction vessel loader

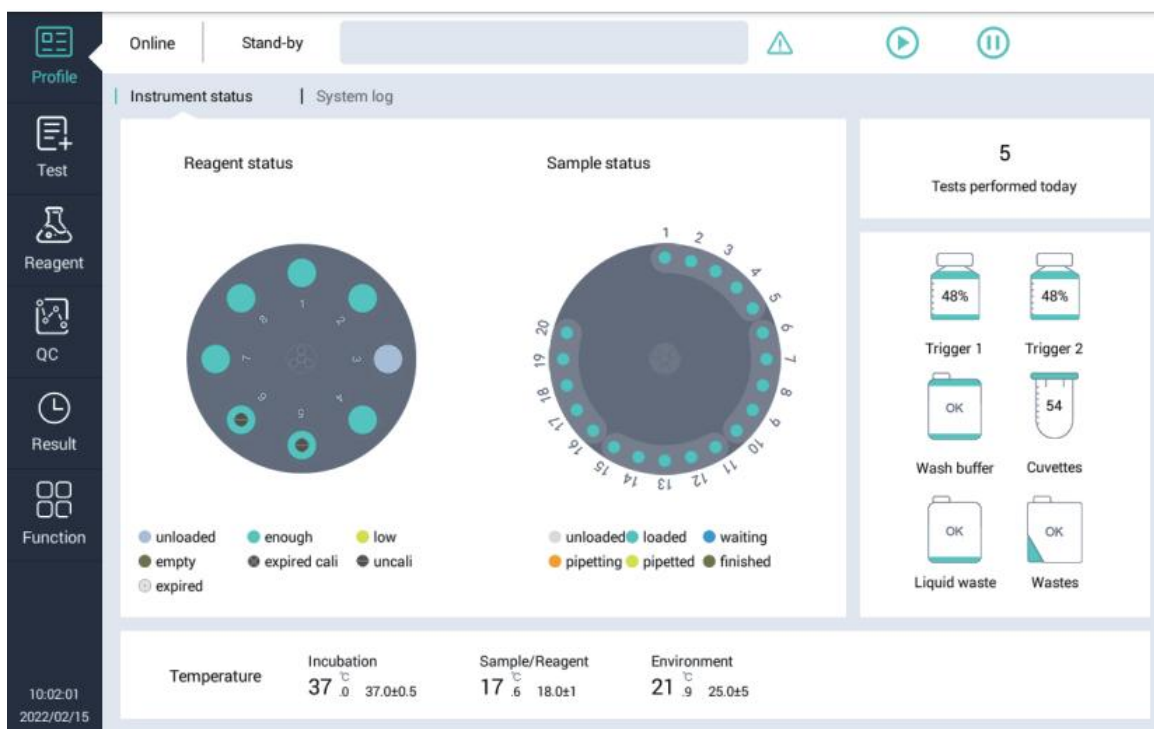
- Up to 192 independent vessels on board (2x96)
- Continuous loading with two plates alternating replenishment
- Pushing one button and adding 96 vessels in one go
- Automatically detecting empty plates
- Disposable reaction vessels



HCT module

- Real-time HCT calculation and online calibration for whole blood & capillary blood tests
- Takes only $15\mu\text{L}$ of sample for an accurate HCT value
- Works simultaneously with incubation to not slow down the sample test - time saving

User software



Main features

- User-friendly interface
- Built-in color touch screen computer
- Real-time statuses monitoring of each test
- Reagents & consumables usage monitoring
- Comprehensive smart alarms

QC & Calibration

- Automatic control & calibrator info reading with one swipe of RFID tag
- 2-point calibration with stability of 28 days
- Easy and simple operations

Pre/post defined dilution function

- Automatic on-board dilution with both pre or post defined dilution ratio

Maintenance Guide

- Smart maintenance with step by step guide to reduce unnecessary service calls
- Detailed instruction for daily, weekly, or monthly maintenance

Test summary

- Easy to read test summary for test management (including system test, sample test, calibration info, QC info, sample info, and reruns)
- Easy search and review test information

Two-way LIS connection

- Two-way LIS connection by TCP/IP serial port and ASTM

Test Menu

Cardiac

whole blood/serum/plasma

NT-proBNP
Myoglobin
hs-cTnT
CK-MB
D-Dimer
Lp-PLA2
ST2

Inflammation

capillary blood/whole blood/serum/plasma

PCT
HBP
IL-6
IL-8
IL-10
TNF α
IL-1 β
IL-2R

Thyroid

serum/plasma

TSH
TT3
TT4
FT3
FT4
Anti-Tg*
Anti-TPO*

Alzheimer's Disease

serum/plasma

P-tau-181*
A β 1-42*

Preeclampsia

whole blood/serum/plasma

PIGF
sFlt-1

Tumor

serum/plasma

CEA
AFP
HE4
CYFRA21-1
CA50
CA125
CA242
CA15-3
CA19-9
CA72-4
SCC
NSE
ProGRP*

Thrombotic Disease

whole blood/serum/plasma

TAT
PIC
TM
tPAI · C
FDP
D-Dimer

Cerebral Injury

whole blood/serum/plasma

S-100

Stomach Function

capillary blood/whole blood/serum/plasma

G-17
PGI
PGII

COVID-19

serum/plasma

SARS-CoV-2 NAbs
SARS-CoV-2 IgG
SARS-CoV-2 IgM
SARS-CoV-2 RBD

Growth & Development

capillary blood/whole blood/serum/plasma

GH
IGF-I
IGFBP-3
25-OH VD
Ferritin

Anemia

capillary blood/whole blood/serum/plasma

Ferritin
VB12*
FA
RBC FA

Reproductive Function

serum/plasma

AMH
Inhibin B*

Sex Hormones

serum/plasma

FSH
LH
PRL
PROG
E2
TEST
HCG/ β -HCG

Glycometabolism

whole blood/serum/plasma

C-peptide
Insulin
HbA1c

Kidney Function

serum

Ngal

* currently under development



Fully Auto Chemiluminescence Analyzer

Key parameters	
General features	Test principle: direct chemiluminescence (acridinium ester label) Throughput: up to 144 tests/hour 24 hrs ready to use Time to first result: 13 minutes
Operation mode	STAT, batch and random
Sample chamber	20 samples on board Continuous loading All positions support STAT sample Support different types of sample containers
Reagent chamber	8 reagents on board Continuous loading Automatic info read in by RFID barcode & reader Refrigerated reagent area
Reagent description	Ready-to-use, no pretreatment required Including calibrators and controls 50-100 tests per kit RFID tag with built-in master curve 2-point calibration Calibration stability: Max 28 days
Other features	Automatic clot detection Built-in HCT module Liquid level detection Constant 37°C incubation
Operation system	Touch screen Android system, sqlite database
Interconnections	Support two-way LIS
Dimensions&weight	590*645*510mm, 65kg
Power requirement	Rated power: 500VA Circuit breaker specification: F6AL250V Power supply voltage: AC 100-240V, 50/60Hz
Performance	Linear correlation: $R^2 > 0.99$



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