
COPAN
Innovating Together™

UniVerse

## WHY WAS UNIVERSE DEVELOPED?

To answer some of the most critical challenges faced by laboratories during the current covid-19 pandemic:

- Enormous increase of number of samples to test
- Increase in potentially dangerous samples
- Systems cross–contamination
- Safety of the operators
- Human errors given by highly repetitive manual work
- Need to keep a rigorous traceability of samples

# PROJECT DEVELOPMENT TIMELINE

| Covid-19 hits Italy | Project Kick Off | 1st Prototype | 1st Installation in Italy | Market Launch | 10 Installations in US and EMEA | New Features Development |
|---|---|---|---|---|---|---|
| Mar 2020 | Apr 2020 | Sept 2020 | Oct 2020 | Nov 2020 | Dec 2020 | 2021 |

FROM CONCEPTING TO FIRST INSTALLATION

**LESS THAN 8 MONTHS**

# LABORATORY WORKFLOW – where is UNIVERSE?

SAMPLE COLLECTION

UniVerse

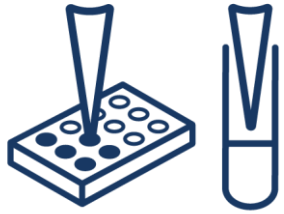
SAMPLE PREPARATION

MOLECULAR ASSAY

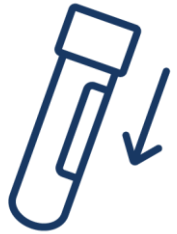
ID SCAN

VORTEXING

DECAPPING



ALIQUOTING



RECAPPING

LABELLING

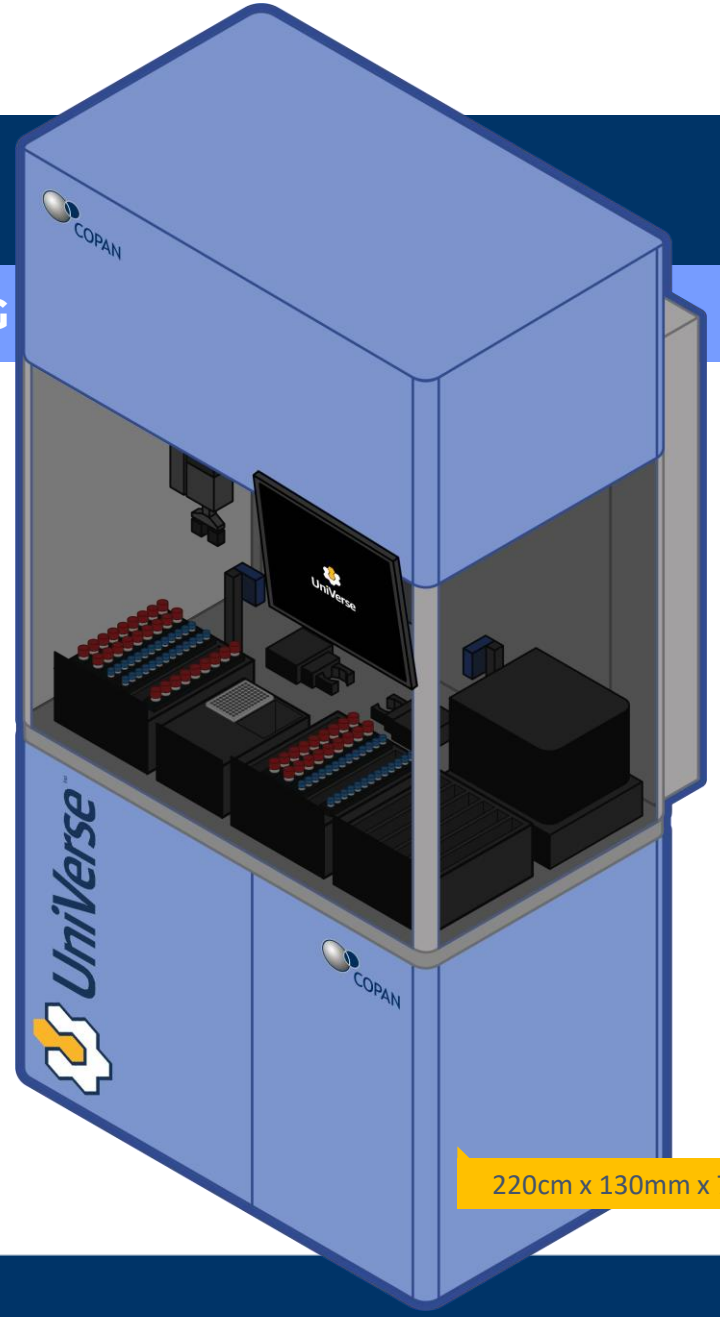
# WHAT IS UNIVERSE?

## **FLEXIBLE** & **OPEN SAMPLE** PREP STATION FOR **MOLECULAR TESTING**

UNIVERSE IS A **HIGH-THROUGHPUT AUTOMATION** SYSTEM THAT AUTOMATICALLY PREPARES VOLUME OF SAMPLES RECEIVED IN THE LABORATORY **FOR MOLECULAR DIAGNOSTIC TESTING**

**FULLY AUTOMATED** SYSTEM CONSOLIDATES, INTEGRATES AND STANDARDIZES THE PRE-ANALYTICAL PROCESS TO STREAMLINE LAB OPERATIONS

**COMPATIBLE** WITH **ANY MOLECULAR PLATFORMS**



# UNIVERSE KEY ADVANTAGES

UniVerse™ does not require the swab removal from the tube.

Reducing manual touchpoints and hands-on time by 90%, UniVerse avoids the risk of cross-contamination and errors.

labeling and barcode printing functions

The HEPA BSL-2 filtration system grants the complete safety of your staff.

# UNIVERSE KEY ADVANTAGES - COMPATIBILITY FIRST

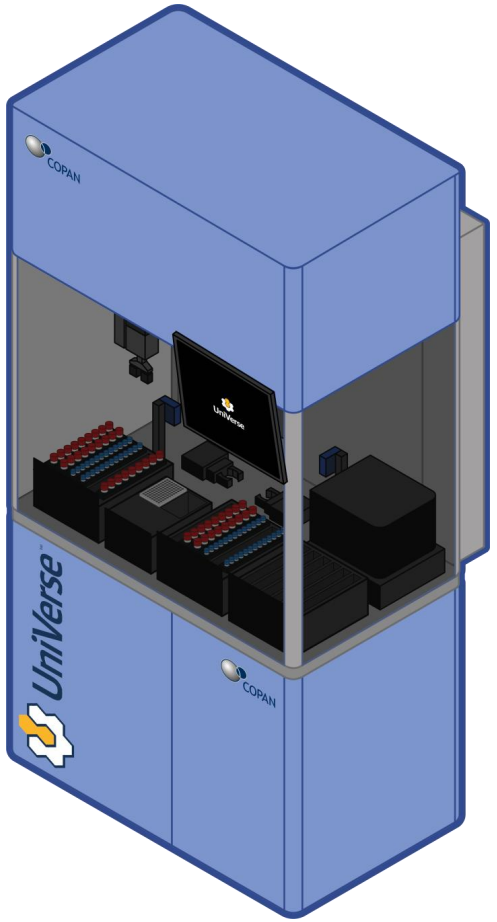
**MULTI SAMPLE**


eNat®


UTM®


FecalSwab®


Other

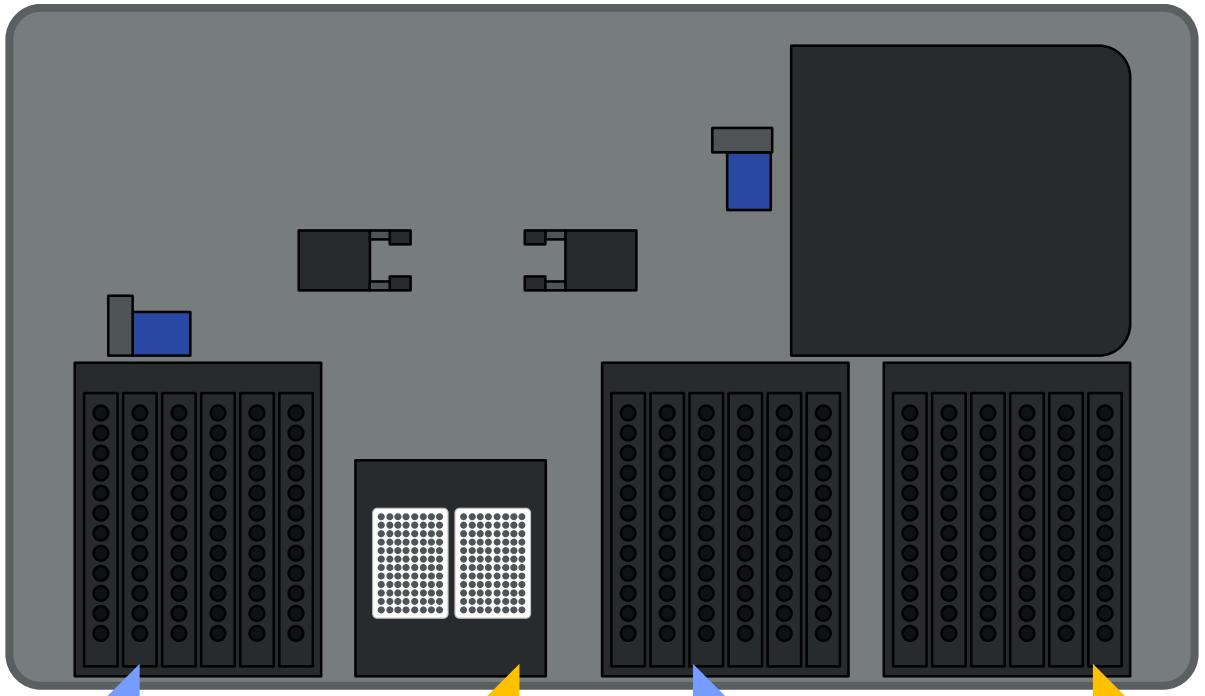



**ANY PLATFORM**

MEDIUM-THROUGHGPUT PLATFORM

HIGH-THROUGHGPUT PLATFORM

# INSTRUMENT LAYOUT



**PRIMARY TUBE**
INPUT 12x6

**PROCESSED DEEPWELL PLATE**

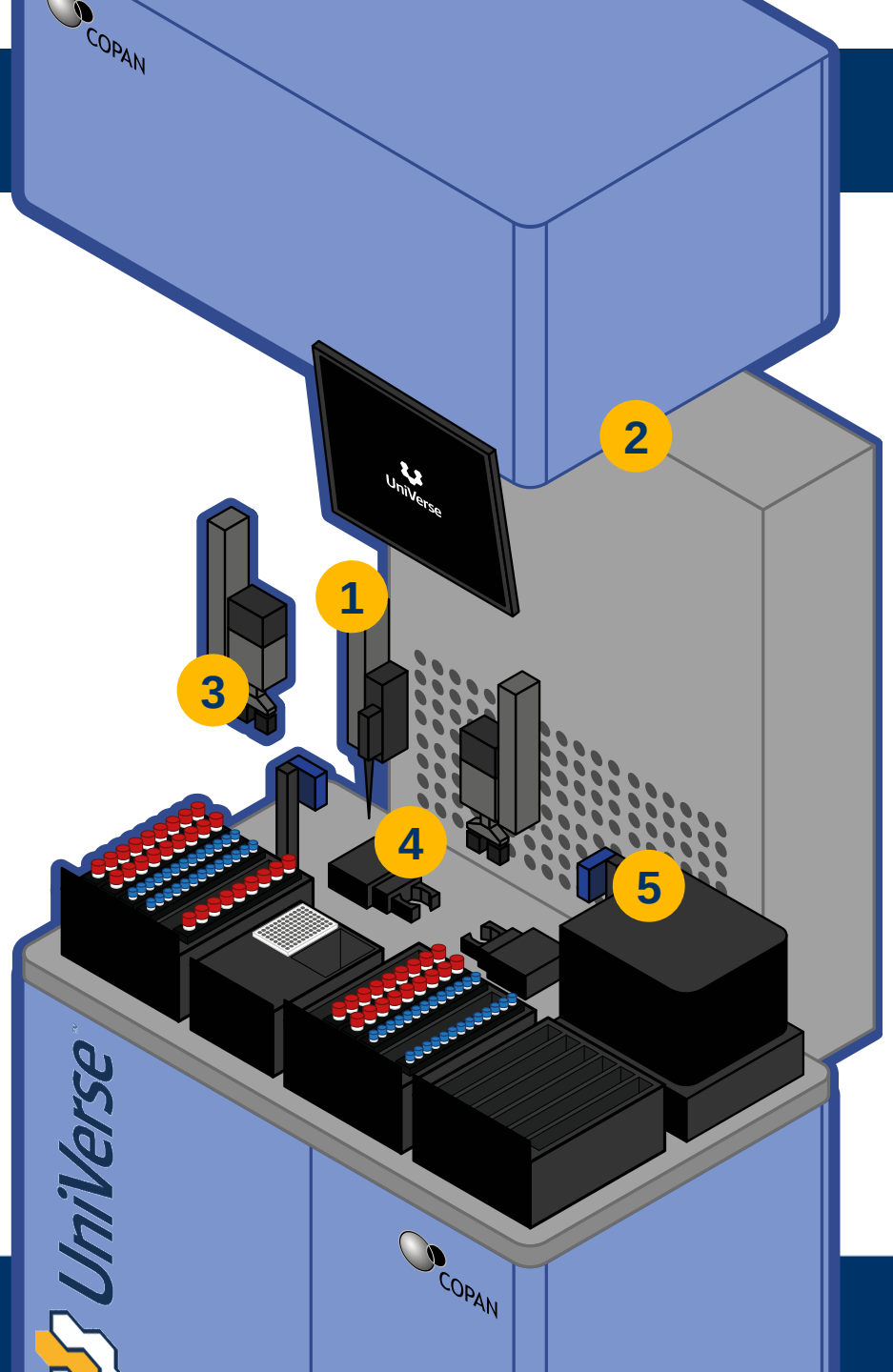
**SECONDARY TUBE**
INPUT 12x6

**PROCESSED SECONDARY TUBE**
OUTPUT 12x6

IF **DEEP WELL** IS SELECTED AS SECONDARY CONTAINER, ALL TUBES RACK CAN BE USED FOR **PRIMARY TUBES ALLOCATION**

# PRIMARY TECHNICAL FEATURES

1. **3 INDEPENDENT ROBOTIC ARMS TO MANAGE:**
   - Primary containers decapping and recapping
   - Secondary containers decapping and recapping and container labelling
   - Pipetting and aliquoting from primary tube to secondary tube of to the deep well plates
2. **LAMINAR FLOW HOOD –** BLS2 FOR AN EXTRA SAFETY LAYER
3. AUTOMATIC **DECAPPING AND RECAPPING** OF BOTH PRIMARY AND SECONDARY SAMPLE CONTAINER
4. AUTOMATIC AND CUSTOMIZABLE **VORTEXING** PROTOCOL
5. INTEGRATED **BARCODE** SCAN AND **LABELLING** OF SECONDARY TUBES OR PLATES

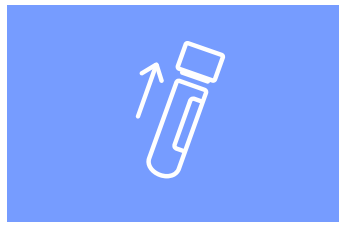


# FROM ONE PRIMARY SAMPLE TUBE TO A SECONDARY TUBE

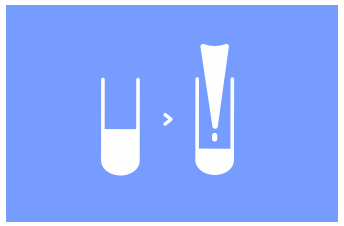
MODE 1

PRIMARY TUBE
**BARCODE READING**

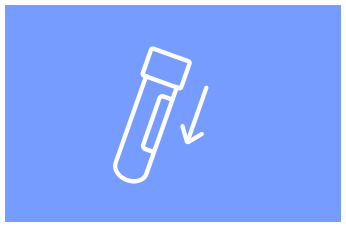
TUBE
**VORTEXING**



**DECAPPING**
LEAVING THE SWAB
INTO THE TUBE



**ALIQUOTING** INTO
SECONDARY TUBE

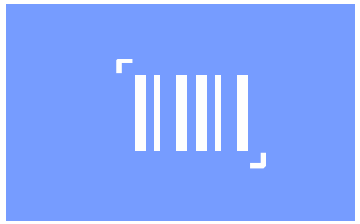


**RECAPPING**
PRIMARY AND
SECONDARY TUBES

**LABELLING** AND
VERIFICATION

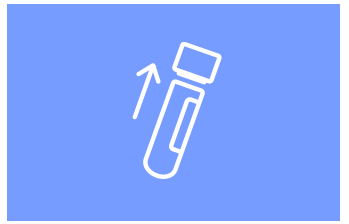
# FROM ONE PRIMARY SAMPLE TUBE TO A DEEP WELL PLATE

MODE 2

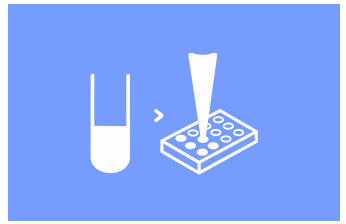


PRIMARY TUBE
**BARCODE READING**

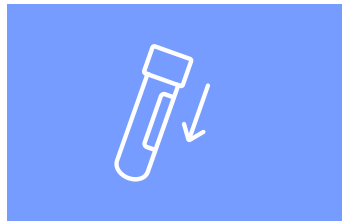
TUBE
**VORTEXING**



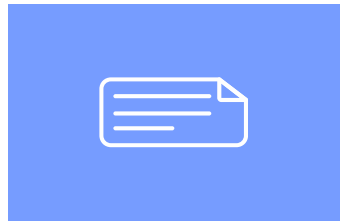
**DECAPPING**
LEAVING THE SWAB
INTO THE TUBE



**ALIQUOTING** INTO
DEEP WELL PLATE



**RECAPPING**
PRIMARY
TUBES

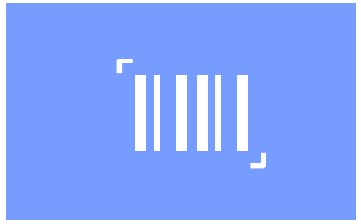


**LABELLING** AND
VERIFICATION

COPAN

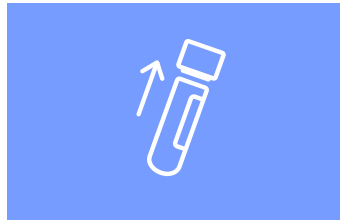
# **POOLING** SAMPLES FROM DIFFERENT TUBES TO ONE SECONDARY TUBE

MODE 3

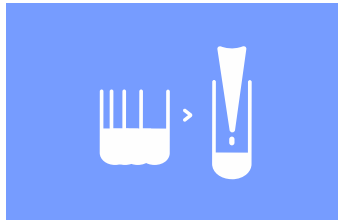


PRIMARY TUBE
**BARCODE READING**

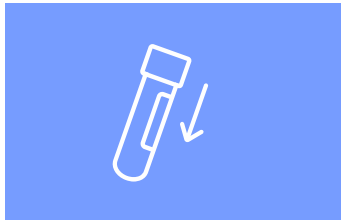
TUBE
**VORTEXING**



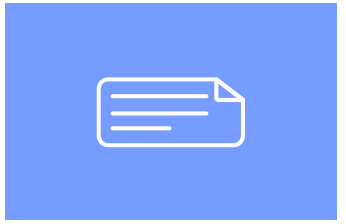
**DECAPPING**
LEAVING THE SWAB
INTO THE TUBE



**POOLING** 4
PRIMARY TUBES INTO
SECONDARY TUBE



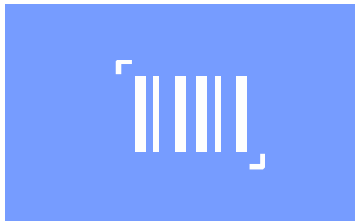
**RECAPPING**
PRIMARY AND
SECONDARY TUBES



**LABELLING** AND
VERIFICATION

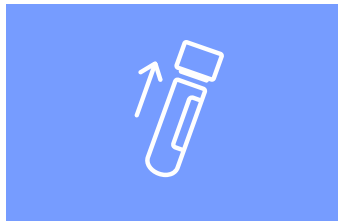
# **POOLING** SAMPLES FROM DIFFERENT TUBES TO ONE DEEP WELL PLATE

MODE 4

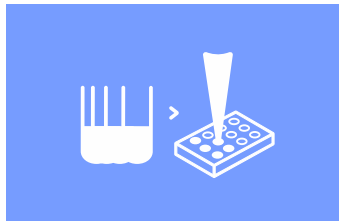


PRIMARY TUBE
**BARCODE READING**

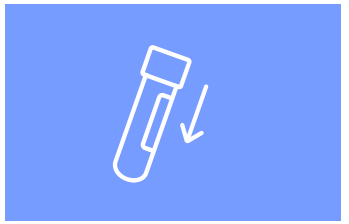
TUBE
**VORTEXING**



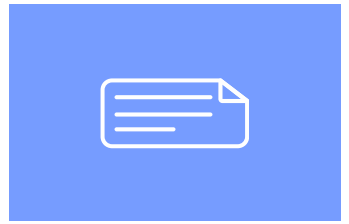
**DECAPPING**
LEAVING THE SWAB
INTO THE TUBE



**POOLING** 4
PRIMARY TUBES INTO
a DEEP WELL PLATE



**RECAPPING**
PRIMARY TUBES



**LABELLING** AND
VERIFICATION

FROM MANUAL TO UNIVERSE™

# WITH MEDIUM-THROUGHPUT PLATFORMS

| 1. *SAMPLE **ID CHECK** AND BARCODE SCAN* | 2. *PRIMARY TUBE **DECAPPING*** | 3. *SAMPLE PREP **ALIQUOTING** INTO SECONDARY CONTAINER* | 4. *SECONDARY CONTAINER **LABELING*** | 5. **EXTRACTION** AND **PURIFICATION** | 6. INSTRUMENT LOADING | 7. **AMPLIFICATION** AND **DETECTION** |
|---|---|---|---|---|---|---|
|  |  |  |  |  AUTOMATED STEP |  MANUAL TOUCHPOINT |  AUTOMATED STEP |

ALL THESE STEPS ARE **MANAGED WITHIN UNIVERSE™** WITH SAVING UP TO **90% OF HANDS-ON TIME**

FROM MANUAL TO UNIVERSE™

# WITH HIGH-THROUGHPUT PLATFORMS

| 1. | 2. | 3. | 4. | 5. | 6. |
|---|---|---|---|---|---|
| *SAMPLE **ID CHECK** AND BARCODE SCAN* | *PRIMARY TUBE **DECAPPING*** | *SAMPLE PREP **ALIQUOTING** INTO SECONDARY CONTAINER* | *SECONDARY CONTAINER **LABELING*** | INSTRUMENT LOADING | **PURIFICATION/AMPLIFICATION** & DETECTION WITH ANY INSTRUMENT CURRENTLY IN USE AT THE LABORATORY |
|  |  |  |  |  MANUAL TOUCHPOINT |  AUTOMATED STEP |

ALL THESE STEPS ARE **MANAGED WITHIN UNIVERSE™** WITH SAVING UP TO **90% OF HANDS-ON TIME**

# TRACEABILITY & DATA MANAGEMENT

**FULLY AUTOMATED** DATA MANAGEMENT FOR THE BEST
## DOWNSTREAM TRACEABILITY INTEGRATION

| SAMPLE ID READING | PLATE ID READING | NEW ID/PROGRESSIVE ID GENERATION |
|---|---|---|
| PRIMARY SAMPLE **ID**  | **SINGLE TUBE TO SINGLE TUBE** | NEW or CONSISTENT **ID** 4556 |
| MULTIPLE SAMPLE **ID**  | **POOL TO SINGLE TUBE** | NEW PROGRESSIVE **ID** 4556 3346 3455 |

**L.I.S. DATA EXCHANGE**

**PRINTABLE REPORT GENERATION FOR MANUAL INTERFACE**

DOWNSTREAM **AUTOMATION**

# TRACEABILITY & DATA MANAGEMENT

**FULLY AUTOMATED** DATA MANAGEMENT FOR THE BEST
## DOWNSTREAM TRACEABILITY INTEGRATION

| SAMPLE ID READING | PLATE ID READING | ID MATRIX GENERATION |
|---|---|---|
| PRIMARY SAMPLE **ID**  | **SINGLE TUBE TO DEEP WELL PLATE** | PLATE **ID** 4556334 |
| MULTIPLE SAMPLE **ID**  | **POOL TO DEEP WELL PLATE** | WELL **ID MATRIX** |

| | | |
|---|---|---|
| **A1** 123 | **A2** 624 | **A3** 324 |
| **B1** 654 | **B2** 544 | **B3** 867 |
| **C1** 675 | **C2** 654 | **C3** 424 |

**L.I.S. DATA EXCHANGE**

**PRINTABLE REPORT GENERATION FOR MANUAL INTERFACE**

DOWNSTREAM **AUTOMATION**

COPAN

# DATA MANAGEMENT

## EXAMPLE OF PRINTABLE REPORT GENERATED BY UNIVERSE FOR EACH PROGRESSIVE ID OF THE PLATE

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |