

THE HIDDEN COST OF MANUAL SAMPLE HANDLING VS. RUDOLPH LABORATORY AUTOMATION

How automation saves time, reduces errors,
and lowers total operating cost

MANUAL
MULTIPLE STEPS



AUTOMATED
ONE LOAD.
MULTIPLE RESULTS.

VS.



WHO THIS MATTERS TO

- Flavors
- Fragrances
- Beverages
- Liquid Foods
- Nutraceuticals
- Oils
- Lotions
- and other Liquid Products

COMMON MEASUREMENTS

- Refractive Index (RI)
- Optical Rotation
- Density
- pH
- Color

MANUAL WORKFLOW

3-5 INSTRUMENT INTERACTIONS PER SAMPLE

- 15-50 MINUTES PER SAMPLE**
5-10 minutes per test
- HIGH TECHNICIAN INVOLVEMENT**
Continuous hand-on time
- HIGHER RISK OF ERRORS**
Manual entry, labeling, transcription
- HIGHER LABOR COSTS**
\$7.50 - \$ 33.00 per sample*

AUTOMATED WORKFLOW

1 SAMPLE LOAD

- 15-50 MINUTES PER SAMPLE**
5-10 minutes per test
- HIGH TECHNICIAN INVOLVEMENT**
Continuous hand-on time
- HIGHER RISK OF ERRORS**
Manual entry, labeling, transcription
- HIGHER LABOR COSTS**
\$7.50 - \$ 33.00 per sample*

MULTIPLE MEASUREMENTS FROM A SINGLE LOAD
RI, Optical Rotation, Density, pH, Color - performed automatically in one continuous flow

KEY BENEFITS OF LABORATORY AUTOMATION



REDUCED LABOR

Frees skilled staff to focus on higher-value work.



HIGHER THROUGHPUT

Process more samples in less time with consistent results.



BETTER DATA INTEGRITY

Barcode ID and automatic data capture reduce errors to nearly zero.



BARCODE TRACEABILITY

Eliminate manual ID entry, misreads, and sample-result mismatches.



INSTRUMENT CONSOLIDATION

One sample pathway. One automated cleaning cycle. Simpler operations.



Run 60-100 samples per batch, even overnight.

STRONG ROI. FAST PAYBACK

Manual handling costs add up everyday. Automations reduces active labor per sample and delivers a quick return on investments.



HIGH LABOR COST
MANUAL WORKFLOW



LOWER LABOR COST
AUTOMATED WORKFLOW



BREAK-EVEN IN DAYS, WEEKS, OR MONTHS

Depending on sample volume

- ✓ The hidden cost is not the instrument- it's a technicians time
- ✓ Automation turns multiple handling steps into one continuous workflow.
- ✓ Barcode identification improves traceability and reduces manual errors.

- ✓ Automation increases throughput without increasing staff.
- ✓ One significant manual error can cost more than the investment difference in automation

