

## Cost Justification for the TurboVap II Concentration Workstation to Replace Manual-Kuderna Danish Concentration Methods

*With financial constraints placed on most laboratories, many lab equipment purchases require a thorough cost justification. Caliper Life Sciences has developed this worksheet to help you through this process quickly and efficiently with just five easy steps.*

### Step 1: Compare Manual Labor for Kuderna-Danish and TurboVap II Workstation

**Note:** "Fully burdened labor rate" includes all employee benefits; insert your lab's own rate here.

	Glassware Wash, Rinse and Set-Up Time For 6 KD Set-Ups	KD Concentration Attendant Time	Transfer and Micro-Evaporation Time	Total Time For 6 (200mL) Samples	Estimated Fully-Burdened Labor Rate (\$/Hr)	Total Labor Cost For 6	Per Sample
<b>Six Samples with Kuderna-Danish</b>	60 minutes	45 minutes attendant time	45 minutes	150 minutes or 2.5 hours	\$27/hour	\$67.50	\$11.25

Entire concentration time involves manual labor.

	Glassware Wash and Rinse Time For TurboVap Tubes	TurboVap Concentration Attendant Time	Transfer and Micro-Evaporation Time	Total Time For 6 (200mL) Samples	Estimated Fully-Burdened Labor Rate (\$/Hr)	Total Labor Cost For 6	Per Sample
<b>Six Samples with the TurboVap II Workstation</b>	6 minutes	6 minutes attendant time	N/A	12 minutes or .20 hours	\$27/hour	\$5.40	\$.90

Only 12 minutes of concentration time involves manual labor.

### Manual Labor Savings

The TurboVap results in a \$10.35 labor savings per sample or 23 minutes saved per sample.

### Step 2: Estimate the Throughput with the TurboVap II Workstation

#### Actual Work Time in an 8 Hour Day

Six hours or 360 minutes (subtract time for breaks, etc.)

#### TurboVap II Workstation Throughput

Six 200mL Methylene Chloride samples concentrate with 35 minutes unattended time and 6 minutes attendant time (load and unload unit). Total time is 41 minutes

#### Conclusion of Throughput

Throughput in 8 hour day with 1 TurboVap II Workstation is 54 concentrations (360 minutes divided by 40 minutes = 9 times to load 1 TurboVap II or 54 concentrations)  
Throughput in an 8 hour day with multiple TurboVap II Workstations

- 1) TurboVap II - 54 concentrations    2) TurboVap II - 108 concentrations    3) TurboVap II - 162 concentrations

### Step 3: Summarize Cost Savings and Other Benefits

- Labor: Typical labor saving is \$10.35 per concentration
- Glassware: Only one piece of glassware to concentrate from beginning to end - TurboVap tubes only \$27.50 each
- Frees up hood space
- Safety: No bumping, minimal sample handling
- Eliminate loss of samples from "going dry"
- Controllable settings to determined endpoint: sensor detection for extracts up to a dark amber color and timed endpoint for darker, more difficult extracts

### Step 4: Propose Timelines For Implementation And How Soon Payback Can Occur

#### Notes and Suggestions

- Keep in mind that the TurboVap Workstation installation time is only about 30 minutes
- Consider Caliper Life Sciences' Free Trial Period (call us for details)
- The longer a lab waits to automate the concentration step, the more glassware is handled or repaired
- Make comparisons to particular projects and impact to operations
- If hood space is currently occupied by a steam bath, suggest how this hood space could be used for other tasks
- Reference Caliper's TurboVap Customer Business Profile

### Step 5: Submit Proposal and call Caliper For Any Additional Information Required

**Note:** If you would like us to fax or email you this template which would allow you to "fill in the blanks", please call us at 508-435-9500