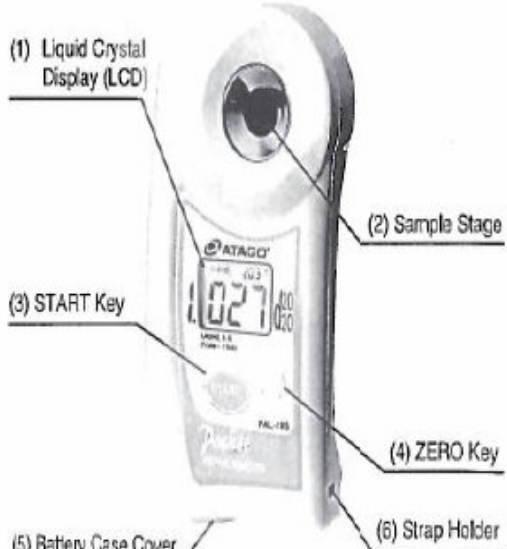


Urine Specific Gravity: Overview, Maintenance and Troubleshooting of the ATAGO Pocket PAL-10S

Purpose:

This document describes the features, maintenance and error codes of the ATAGO Pocket PAL-10S digital refractometer.

Features:

<p>1. Liquid Crystal Display – Displays the measured values, battery indicator and temperature of measurement.</p>	
<p>2. Sample Stage – The prism is located at the center of the sample stage.</p>	
<p>3. START Key – Press to begin measurement. To turn off the instrument, press and hold down for two seconds.</p>	
<p>4. ZERO Key – Press to perform zero set.</p>	
<p>5. Battery Case Cover – Remove the battery case cover to replace the batteries.</p>	
<p>6. Strap Holder – Not used at C&W.</p>	

Automatic Temperature Compensation

- As the temperature of a solution changes, so does the refractive index.
- There is a temperature sensor which measures the change in prism temperature when the sample is placed onto the sample stage.
- Automatic Temperature Compensation displays the specific gravity of the sample corrected to a standard 20°C, within the measurement temperature range of 10-35°C.







Note: To allow for proper temperature compensation, please allow time (approximately 3-5 seconds) for sample and sample stage to equilibrate.

Maintenance:

	Prism Surface Cleaning	Exterior Surface Cleaning
When?	Before and after every quality control or patient sample testing.	After each patient use and when visibly soiled.
How?	a) Add a few drops of distilled water onto the prism surface. b) Wipe dry with a lint-free tissue.	a) Wipe exterior with a CaviWipes® wipe. b) If disinfecting, wipe with a second wipe. c) Let it air dry. d) Dampen a lint-free tissue with distilled water and use it to remove residual disinfectant.

Note: Biological solutions and disinfectants left on the prism surface for any extended period of time will damage the prism, causing inaccurate test results.

Troubleshooting:

Error Codes	Possible Causes	Corrective Actions
	Insufficient amount of water or substance other than water is used for zero set.	Clean prism surface with distilled water and wipe dry with a lint-free tissue. Add at least 0.3mL of water onto the prism surface before pressing the “ZERO” key.
	Battery power is low.	Replace batteries. Refer to Appendix A: Battery Replacement for ATAGO Pocket PAL-10S.
	Insufficient amount of sample on the prism surface to perform measurement.	Add at least 0.3mL of sample on the prism surface and ensure there are no bubbles before pressing the “START” key.
	The sample’s specific gravity is >1.060.	None. The refractometer can only read specific gravity values between 1.000-1.060.
	The sample’s temperature is <10°C and the displayed specific gravity value is not accurate.	Retest when the sample’s temperature is between 10°C to 35°C.
	The sample’s temperature is >35°C and the displayed specific gravity value is not accurate.	Retest when the sample’s temperature is between 10°C to 35°C.

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Support Contact:

POCT Technologist email POCTLab@cw.bc.ca local 7521 or after hours contact local 7850.

References:

1. ATAGO Instructions of Urine Specific Gravity Refractometer PAL-10S
2. Textbook of Clinical Chemistry. Norbert W. Tietz 1986 WB Saunders.
3. CWPC_USG_0150 Urine Specific Gravity Appendix B – Instrument Features
4. CWPC_USG_0155 Urine Specific Gravity Appendix C – Instrument Maintenance
5. CWPC_USG_0160 Urine Specific Gravity Appendix D – Troubleshooting
6. CWPC_USG_0165 Urine Specific Gravity Appendix E – Battery Replacement

Appendixes:

Appendix A: Battery Replacement for ATAGO Pocket PAL-10S

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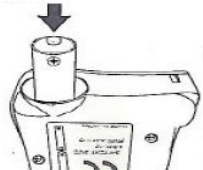
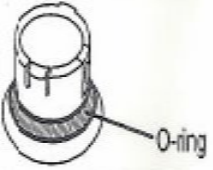
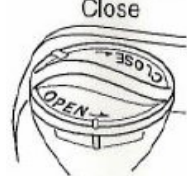
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Appendix A: Battery Replacement for ATAGO Pocket PAL-10S

<p>Battery replacement is indicated with the displayed error message.</p> <p>Two 1.5V AAA alkaline batteries are required. Obtain from ward.</p>	
<p>1. Remove the battery case cover located on the bottom of the ATAGO Pocket PAL-10S digital refractometer.</p>	
<p>2. Remove the old batteries and insert the two new 1.5V AAA alkaline batteries.</p> <p>Refer to the diagram on the back of the refractometer.</p>	
<p>3. Check that the O-ring located on the battery case cover is clean and free of deformities before replacing the battery case cover.</p> <p>Note: The O-ring helps prevent liquid from entering the unit and causing electrical irregularities during measurement. After opening and closing the cover several times, oil (Vaseline) can be applied onto the O-ring with a cotton swab. (LAB FUNCTION ONLY).</p>	
<p>4. Replace the battery case cover, press downwards and turn the cover until it stops completely.</p> <p>Confirm that the battery case cover is tightly closed in order to prevent liquids entering the unit.</p>	
<p>5. After replacing the batteries, Quality Control Test Procedure must be performed prior to patient testing.</p> <p>Document battery change in the "Troubleshooting Notes" section of the Urine Specific Gravity: Quality Control Record Form.</p>	

REVISION & APPROVAL LOG

Version	Revision Type	Description of Changes	Revision Date	Technical Approval	Medical Approval
1.0	New Document	New Document	Jan 2, 2020	Diane Sze	

Attention: This document is published on the BCCW ePOPS website

Revisions made to this document require an update to the corresponding document published on BCCW ePOPS website.

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