

**PURCHASE ORDER**  
INDUSTRIAL TECHNOLOGY DEVELOPMENT INSTITUTE

Appendix 61

Supplier : <b>MEDICAL TEST SYSTEMS, INC.</b>	P.O. No. : <b>GIAE-PO-2022-06-0628</b>
Address : <b>Suite B 5/F DAO 1 Bldg. 189 Salcedo St. Legaspi Village Makati City</b>	Date : <b>JUNE 23, 2022</b>
TIN :	Mode of Procurement : <b>PB</b>

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Place of Delivery : <b>Metrology Building</b>	Delivery Term : <b>30-45 CD</b>
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Stock/Property No.	Unit	Description	Quantity	Unit Cost	Amount																								
1	unit	<p><b>SUPPLY, DELIVERY, LABOR, INSTALLATION AND COMMISSIONING OF ONE (1) UNIT FLOW CYTOMETER</b></p> <p>Manufacturer: Thermo Fisher Scientific</p> <p>1 system <b>A24864</b> <b>Attune™ NxT Acoustic Focusing Cytometer, blue with Desktop and Monitor</b> Includes:</p> <p>1 unit <b>100023101</b> <b>Assembly, Dmp Tray</b> Warranty: 2 years</p> <p>Inclusive of: 1 unit 2 KVA UPS Installation to be conducted by Field Service Engineer On-site training to be conducted by Field Application Specialist</p> <p><b>Specifications</b></p> <p><b>For Use With (Equipment)</b> Attune™ NxT Acoustic Focusing Cytometer</p> <p><b>Format</b> Tube(s)</p> <p><b>Frequency</b> 50/60 Hz</p> <p><b>Green Features</b> Less hazardous</p> <p><b>Laser Features</b> Blue Excitation Laser (488 nm)</p> <p><b>Product Line</b> Attune™</p> <p><b>Shipping Condition</b> Room Temperature</p> <p><b>Contents &amp; Storage</b></p> <ul style="list-style-type: none"> <li>• Attune NxT Flow Cytometer</li> <li>• Minitower Windows 10 64-bit computer with Attune Cytometric Software</li> <li>• Power cord with adapters</li> <li>• USB cable</li> <li>• Attune Shutdown Solution</li> <li>• Attune Wash Solution</li> <li>• Attune Focusing Fluid</li> <li>• Attune NxT Flow Cell Cleaning Solution</li> <li>• Attune Performance Tracking Beads</li> <li>• Quick reference card</li> </ul> <p><b>Instrument specifications</b></p> <p>Optics</p> <ul style="list-style-type: none"> <li>• Laser power (by default in blue channel)</li> </ul> <table border="1"> <thead> <tr> <th>Laser</th> <th>Wavelength (nm)</th> <th>Beam-shaping optics (BSO)* (mW)</th> <th>Diode power** (mW)</th> </tr> </thead> <tbody> <tr> <td>Violet</td> <td>405</td> <td>30</td> <td>100</td> </tr> <tr> <td>Blue</td> <td>488</td> <td>30</td> <td>100</td> </tr> <tr> <td>Green</td> <td>532</td> <td>100</td> <td>140</td> </tr> <tr> <td>Yellow</td> <td>591</td> <td>30</td> <td>100</td> </tr> <tr> <td>Red</td> <td>637</td> <td>100</td> <td>140</td> </tr> </tbody> </table> <p>* Based on nominal diode laser power that may be able through the beam splitter and focusing optics. ** Nominal diode laser power.</p> <ul style="list-style-type: none"> <li>• Laser excitation: Optimized technology for prolonged blue laser-line noise and bleed-through reduction</li> <li>• Laser profile: 17 x 70 µm flat-top beam providing intense alignment</li> <li>• Emission filter: 16-nm, 14-color interference with wavelength-tuned photomultiplier tubes (PMT), user-changeable, keyed filter</li> <li>• Laser separation: 150 µm</li> <li>• Optical alignment: Fixed alignment with patented, welded flow cell user readjustment required</li> <li>• Onboard thermoelectric cooler: No warm-up delay; flow cell's protected by coolant</li> <li>• Scatter mode: Hybrid on-off method usage and/or using by 10s; may keep it "on" when acquiring complex, repetitive results of usage</li> <li>• Flow tip specified at the flow cell: Coefficient of variation (CV) &lt;2% laser width of 80 µm</li> <li>• Upgradable: Conventional flow channels</li> </ul>	Laser	Wavelength (nm)	Beam-shaping optics (BSO)* (mW)	Diode power** (mW)	Violet	405	30	100	Blue	488	30	100	Green	532	100	140	Yellow	591	30	100	Red	637	100	140		5,870,000.00	5,870,000.00
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Address : Suite B 5/F DAO 1 Bldg. 189 Salcedo St. Legaspi Village Makati City	Date : <b>JUNE 23, 2022</b>
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Stock/ Property No.	Unit	Description	Quantity	Unit Cost	Amount
Fluidics		<ul style="list-style-type: none"> <li>• Flow cell: Quartz cuvette gel coupled to 1.2 numerical aperture (NA) collection lens, 200 x 200 µm</li> <li>• Sample analysis volume: 20 µL to 4 mL</li> <li>• Custom sample flow rates: 12.5–1,000 µL/min</li> <li>• Sample delivery: Positive-displacement syringe pump for volumetric analysis</li> <li>• Sample tubes: Accommodates tubes from 17 x 100 mm to 8.5 x 45 mm</li> <li>• Fluid-level sensing: Active</li> <li>• Standard fluid reservoirs: 1.8 L focusing fluid tank, 1.8 L waste tank, 175 mL shutdown solution tank, and 175 mL wash solution tank</li> <li>• Fluid storage: All fluids stored within instrument</li> <li>• Extended fluidics option: Configuration for 10 L fluid</li> <li>• Nominal fluid consumption: 1.8 L/day</li> </ul>			
Performance		<ul style="list-style-type: none"> <li>• Automated maintenance cycles: &lt;15 min startup and shutdown—deep clean, sanitize, and debubble modes</li> <li>• Fluorescence sensitivity: &lt;30 molecules of equivalent soluble fluorochrome (MESF) for FITC, &lt;30 MESF for PE, &lt;70 MESF for APC</li> <li>• Fluorescence resolution: CV &lt;3% for the singlet peak of propidium iodide-stained chicken erythrocyte nuclei (CEN)</li> <li>• Data acquisition rate: Up to 35,000 events/sec, 34 parameters, based on a 10% coincidence rate per Poisson statistics</li> <li>• Maximum electronic speed: 65,000 events/sec with all parameters</li> <li>• Carryover: Single-tube format: &lt;1%</li> <li>• Forward and side scatter sensitivity: Able to discriminate platelets from noise</li> <li>• Forward and side scatter resolutions: Optimized to resolve lymphocytes, monocytes, and granulocytes in lysed whole blood</li> <li>• Forward scatter: Photodiode detector with 488/10 nm bandpass filter</li> <li>• Side scatter: PMT with default 488/10 nm bandpass filter; optional 405/10 nm bandpass filter</li> <li>• Fluorescence detectors: 14 individual detectors</li> <li>• Electronic pulse: Measured area, height and width pulse for all detectors</li> <li>• Violet side scatter resolution: Can be configured for violet side scatter to better resolve particles from noise</li> <li>• Minimum particle size: 0.2 µm on side scatter using submicron bead calibration kit from Bangs Laboratories</li> </ul>			
Software		<ul style="list-style-type: none"> <li>• Compensation: Full matrix—automated and manual modes, on-plot compensation tools for fine adjustment; use of tubes and wells</li> <li>• Flow rate: Precise flow rate control via software; no hardware adjustments</li> <li>• Live streaming: Live update of statistics during acquisition of events up to 35,000 events/sec</li> <li>• Overlays: Comparative analysis between samples; 3D view</li> <li>• Sample recovery: System able to return unused samples</li> <li>• Concentration: Direct concentration measurement without use of counting beads</li> <li>• Software layout: Fully customizable for each user account</li> <li>• Bubble detection technology: Stops automated run to preserve sample integrity</li> <li>• Maximum single-event file: 20 million with option to append</li> <li>• Heat map: Set up for definition of plate layout; screening view for analysis for tubes and plates</li> <li>• Threshold: Up to 4 individual thresholds with user option to apply Boolean logic</li> <li>• Gating: Hierarchical gating with the ability to derive gates</li> <li>• Smartgate labeling: Option to annotate quad gate names based on fluorophore and target names</li> </ul>			



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		<ul style="list-style-type: none"> <li>• Voltage: User adjustable</li> <li>• Window extensions: User adjustable</li> <li>• Area scaling factor (ASF): User adjustable</li> <li>• Acquisition settings: Documented in FCS files and maintained upon import</li> <li>• Templates: Create from existing experiments—instrument settings, workspaces, run protocols, heat map settings, and compensation settings optimized and defined previously</li> <li>• Tube-to-plate conversion: One-click transition from tubes to plates and vice versa; no disassembly, no additional QC, no reboot required for conversion between plates and tubes</li> <li>• Graphics resolution: Publication-quality images; support for TIF, PNG, BMP, JPG, GIF, and EMF; quickly copy and paste plots to any external application (e.g., Microsoft™ PowerPoint™ software)</li> <li>• User account administration: Administrative creation of individual user accounts with designated roles, advanced setting permissions, management of individual accounts, user time tracking, and sample count</li> <li>• Instrument tracking: Automated daily baseline and performance test with Lavey-Jennings plots</li> <li>• Warranty: 1 year</li> <li>• Production verification testing: Each instrument is tested and verified for assembly integrity and performance to specifications</li> <li>• Quality management system: Manufacturing standards comply with the requirements of ISO 13485:2003</li> <li>• Robust installation specifications: Units installed by engineer; preplanning checklist, delivery, and installation; and performance validation compliance with standardized procedure</li> <li>• For Research Use Only</li> <li>• Software requirements: Invitrogen™ Attune™ NxT Software</li> <li>• Monitor: 23-inch flat panel (1,920 x 1,200 resolution); dual-monitor capability</li> <li>• Computer: Minitower desktop</li> <li>• Operating system: Windows™ 7 64-bit</li> <li>• FCS format: FCS 3.1, 3.0</li> <li>• Processor: Intel Core™ i7 processor</li> <li>• RAM: 16 GB</li> <li>• Hard drives: 80 GB or larger and 250 GB redundant array of independent disks (RAID)-compatible hard drives</li> </ul> <p>Installation requirements</p> <ul style="list-style-type: none"> <li>• Electrical requirements: 100-240 VAC, 50/60 Hz, &lt;150 W</li> <li>• Thermo Fisher Scientific certifies that the Attune NxT Flow Cytometer conforms to relevant directives to bear the CE mark. The instrument also conforms to the UL and CAN/CSA general requirements (61010.1). The Attune NxT Flow Cytometer is a Class I laser product per Center for Devices and Radiological Health (CDRH) regulations and EN/IEC 60825.</li> <li>• Heat dissipation: &lt;150 W</li> <li>• Temperature operating ranges: 15-30°C (59-86°F)</li> <li>• Operating humidity: 10-90%, noncondensing</li> <li>• Audible noise: &lt;65 dBA at 1.0 m</li> <li>• Instrument size (H x W x D): ~40 x 58 x 43 cm (16 x 23 x 17 in.), including fluid bottles</li> <li>• Weight: ~29 kg (64 lb)</li> </ul>			

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Table 1. Features of Attune Flow Cytometers.

Category	Feature	Attune CytPlex Flow Cytometer	Attune NxT Flow Cytometer
Optics	Number of lasers	2-4	1-4
	Number of detection channels	2 scatter channels, up to 14 fluorescence channels	
	Imaging illumination	405 nm laser with <50 nanosecond pulse width	N/A
	Optical alignment	Fixed alignment with pre-aligned welded fiber; no user maintenance required	
Fluidics	Acoustic focusing	✓	✓
	Custom sample flow rates	✓	✓
Performance (fluorescence detection)	Fluorescence sensitivity	<80 MESF for FITC, <30 MESF for PE, <70 MESF for APC	
	Fluorescence resolution	CV <3% for the singlet peak of propidium iodide stained chicken erythrocyte nuclei (CEN)	
	Maximum electronic speed	Up to 35,000 events/sec with all parameters	
Performance (imaging)	Image capture rate	Up to 6,000 images/sec depending on image size and event rate	N/A
	Objective	Magnification 20x, Numerical aperture 0.45	N/A
	Pixel resolution	0.3 µm/pixel	N/A
	Detection limit	Visually detect 800 nm particles	N/A
Quality and regulatory	Instrument tracking	Automated daily baseline and performance test with Levey-Jennings plots	
	Regulatory status	For Research Use Only	
Physical	Dimensions (H x W x D) including fluid bottles	-43 x 58 x 43 cm (-19 x 23 x 17 inch)	-40 x 58 x 43 cm (-16 x 23 x 17 inch)
	Biosafety hood compatibility	✓	✓
Computer	Memory	64 GB (4 x 16 GB) DDR4 2666 MHz, UDIMM Non-ECC	32 GB
	Hard drives	2 x 8TB SSD, 2.5-inch Samsung 670 QVO, 560 MB/s	2 x 2TB SATA 3.0 GB/s, 8MB data burst cache; Controller RAID1, integrated
	Graphics processor	Nvidia® Quadro® P2200 GPU	N/A

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Table 2. Attune Flow Cytometer system laser and detector configurations.

Lasers	Laser configuration (Cat. No.)	Number of detection channels for included lasers					Total detection channels*	Attune CytPix Cat. No.	Attune NxT Cat. No.
		Violet 405 nm	Blue 488 nm	Yellow 561 nm	Green 532 nm	Red 637 nm			
1	Blue	Available as upgrade**	4	Available as upgrade**	Available as upgrade**	Available as upgrade**	0	N/A	A24864
	Blue/green	Available as upgrade**	3	-	4	Available as upgrade**	0	N/A	A25095
	Blue/yellow	Available as upgrade**	3	4	-	Available as upgrade**	9	A51842	A24861
2	Blue/red	Available as upgrade**	4	Available as upgrade**	Available as upgrade**	3	9	A51840	A24863
	Blue/violet	4	4	Available as upgrade**	Available as upgrade**	Available as upgrade**	10	A51841	A24862
	Blue/violet 6	6	3	Available as upgrade**	-	Available as upgrade**	11	A51843	A29002
3	Blue/green/red	Available as upgrade**	3	-	4	3	12	N/A	A28907
	Blue/red/yellow	Available as upgrade**	3	4	-	3	12	A51845	A28993
	Blue/green/violet	4	3	-	4	Available as upgrade**	13	N/A	A28999
	Blue/violet/yellow	4	3	4	-	Available as upgrade**	13	A51846	A24859
	Blue/red/violet	4	4	Available as upgrade**	Available as upgrade**	3	13	A51844	A24860
	Blue/red/violet 6	6	3	Available as upgrade**	-	3	14	A51847	A29003
4	Blue/red/violet/green	4	3	-	4	3	16	N/A	A29001
	Blue/red/yellow/violet	4	3	4	-	3	16	A51848	A24858
	Blue/red/yellow/violet 6	6	2	3	-	3	16	A51849	A29004

\* Number of detection channels includes all fluorescence channels as well as a forward scatter and a side scatter channel.  
\*\* Green laser not available on Attune CytPix.



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END USER:	 <b>MADELAINE L. EBARVIA</b>	Less: VAT	262,053.57	314,464.28	8


(Total Amount in Words) Five million, five hundred fifty five thousand, five hundred thirty five pesos and 71/100 only.

In case of failure to make the full delivery within the time specified above, a penalty of one-tenth (1/10) of one percent for every day of delay shall be imposed on the undelivered item/s.

Conforme:


  
**Maria Angelica T. Maloca**  
 Signature over Printed Name of Supplier  
July 19, 2022  
 Date

Very truly yours,

  
**ANNABELLE V. BRIONES, PhD**  
 Signature over Printed Name of Authorized Official  
 Director  
 Designation

Fund Cluster : \_\_\_\_\_  
Project 1. Isolation and Purification of Philippine Common Viruses with Medical Importance and Pandemic Potential for Antigen-Antibody Studies

ORS/BURS No. : IPC0-2022061087

Funds Available : \_\_\_\_\_  
  
**PATRICIA ASHLEY M. MENDOZA**  
 Signature over Printed Name of Chief Accountant/Head of Accounting Division/Unit

Date of the ORS/BURS: \_\_\_\_\_

Amount : ₱ 5,870,000.-

07/08/22

*jr 7/1/22*