

Infrastructure or Network Lab Project

Application for Funding in 2018

Faculty	Medicine	
Family Name, Lead Investigator <small>(Please only name ONE person here)</small>	Hardeman	
Project Type	<input checked="" type="checkbox"/> Faculty Infrastructure Project <input type="checkbox"/> Mark Wainwright Analytical Centre Infrastructure Project <input type="checkbox"/> Network Lab For any of the above, please indicate: <input checked="" type="checkbox"/> 1-year or <input type="checkbox"/> 2-year project	
Project title <small>(Please chose a title descriptive of the infrastructure requested)</small>	IncuCyte S3 – Long term, dual colour, high throughput live cell analysis system	
Amount requested centrally (ex GST) <small>(For 2-year projects, detail the amount requested in each year)</small>	2018 \$302,522.00	2019 \$0
School / Faculty approved contribution, if applicable	2018 \$0	2019 \$0

RESEARCH INFRASTRUCTURE SCHEME: *Supporting Collaborative Research*

Application Form for Funding Support in 2018

When completing this application, please refer to the scheme's guidelines.

Applications must be lodged with the relevant School Office as a **single pdf** file by **18 September 2017** and must include:

- **A completed and signed Site and Services Checklist:** The lead investigator is asked to complete the checklist, sign the document as 'Project Lead' and obtain sign-off by the relevant Head of School as 'Sponsor' (refer to the checklist for instructions).
- **Suppliers' quotes for items to be purchased:** See Section 8 for details.

The Site and Services Checklist, quote templates, guidelines and other resources for this scheme are available at <https://research.unsw.edu.au/unsw-research-infrastructure-scheme>. Additional contacts for advice and assistance are listed at the end of this form.

Use this form for **Faculty or MWAC Infrastructure and Network Lab Projects** only. There is a separate form for **cross-Faculty Infrastructure Projects**, which involve **funding** from more than one Faculty or joint Faculty/ MWAC proposals.

1 APPLICANT(S)

1.1 Lead Investigator

The Lead Investigator is the project lead and will be the key contact person for the application for all correspondence. This should be the same person listed as under 1* in the tables below. **Please only name ONE person here.**

Applicant number	Family name	Given Name(s)	Phone	Email
1*	HARDEMAN	Edna	02 9385 3760	e.hardeman@unsw.edu.au

1.2 Applicant Summary (add additional rows if required)

Applicant number	Family name	Given Name(s)	Centre/ School/Faculty or Department	Email
1*	HARDEMAN	Edna	SOMS	e.hardeman@unsw.edu.au
2	GUNNING	Peter	SOMS	p.gunning@unsw.edu.au
3	WHAN	Renee	MWAC	r.whan@unsw.edu.au
4	KAVALLARIS	Maria	CCI	MKavallaris@ccia.org.au
5	BIRO	Maté	SOMS/SMS	m.biro@unsw.edu.au
6	BRYCE	Nicole	SOMS	nicole.bryce@unsw.edu.au
7	CHANDRAKANTHAN	Vashe	SOMS	v.chandranathan@unsw.edu.au
8	DI GIROLAMO	Nick	SOMS	n.digirolamo@unsw.edu.au

9	FATH	Thomas	SOMS	t.fath@unsw.edu.au
10	KHACHIGIAN	Levon	SOMS	l.khachigian@unsw.edu.au
11	KNOTHE TATE	Melissa	GSBME	m.knothetate@unsw.edu.au
12	LEES	Justin	SOMS	justin.lees@unsw.edu.au
13	LOCK	John	SOMS/SMS	john.lock@unsw.edu.au
14	LORD	Megan	GSBME	m.lord@unsw.edu.au
15	MOALEM-TAYLOR	Gila	SOMS	gila@unsw.edu.au
16	PIMANDA	John	POWCS/SOMS	jpimanda@unsw.edu.au
17	POOLE	Kathryn	SOMS	k.poole@unsw.edu.au
18	RYE	Kerry-Anne	SOMS	k.rye@unsw.edu.au
19	SAUNDERS	Darren	SOMS	d.saunders@unsw.edu.au
20	STEAR	Jeff	SOMS/SMS	j.stear@unsw.edu.au
21	TURNER	Nigel	SOMS	n.turner@unsw.edu.au

2 EQUIPMENT, INFRASTRUCTURE OR SUPPORT REQUESTED

Provide a short description (max 1 page) of the equipment, infrastructure or support requested. For Network Labs, ensure the description includes the equipment/ facility to be supported as well as justifying the staff support requested.

The IncuCyte S3 is an automated high throughput, live cell imaging analysis system. It will replace an early model IncuCyte currently located in the Biomedical Imaging Facility (BMIF; Lowy Building) that has reached the end of its usable life both technologically and physically. In addition, due to the increased capabilities of the IncuCyte S3, it can substitute for live cell microscopes in the BMIF, freeing up their use for more specialised applications.

The IncuCyte S3 is a highly flexible system that automatically acquires and analyses images of various features of living cells over time periods ranging from hours to weeks. The system sits inside a standard tissue culture incubator which allows for optimal cell health by precise control of temperature, humidity and gas requirements.

Why now?

Single timepoint cell imaging is fast becoming obsolete. The highly dynamic features of cells – motility, proliferation, death, pathogen invasion, growth, differentiation - are cellular signatures for health and disease, for the development of tissues, and for responsiveness to drugs, nanoparticle therapeutics, and biomaterials. All of these features are uniquely suited to live cell analysis with kinetic measurements able to provide richer, more detailed information about cellular processes occurring in real time. This is what top journals are expecting and what drug development and cell-based therapies are demanding. The major translational research themes of the Incucyte S3 users - drug discovery, nanoparticle-based therapies, stem cell therapies, organ development, biomaterials – require this type of capability.

Specific features

- Data is obtained in real time during the course of the experiment, capturing all key events rather than relying on predictions as to when events might happen, as with single timepoint imaging. Therefore,

this is a more accurate and efficient method of analysis and reduces the overall amount of time required for an experiment.

- It has substantial high throughput capabilities under a broad range of conditions. It accommodates different cell growth vessels from 384 well plates to T75 flasks, has 3 different objectives and images in 2 colours, providing users with numerous options to grow, manipulate and analyse their cells. Six 384-well plates can be imaged in the one experiment which allows for 2304 different conditions to be compared at once over time. Such high throughput capabilities make this an excellent system for drug discovery studies.
- It has substantial analytical scope. This includes the ability to analyse basic cellular manipulations and processes such as proliferation, apoptosis, protein localisation, phagocytosis, reporter gene expression, and transfection efficiency. The different software modules expand the capabilities of the system to analyse unique cell processes such as neurite growth, angiogenesis, cell migration, cell-cell interactions, chemotaxis and tumour spheroid growth in 3D. This wide range of applications ensures that the IncuCyte S3 will be utilised across a wide range of projects, providing both large scale kinetic data and considerable time savings in the analysis of live cell imaging data.
- It provides flexibility with data handling and management. The images, image analysis protocols and results can be accessed from any computer, enabling monitoring of the experiment from remote sites.

3 LOCATION OF THE EQUIPMENT/ INFRASTRUCTURE/ STAFF

Provide a short description (max 1 page) indicating where the equipment/ infrastructure/ staff will be physically located. If the equipment/infrastructure will be installed “off-site”, then provide details of the physical location and address, together with a statement on fractional ownership, if applicable.

The IncuCyte S3 will be housed within a dedicated incubator in the expanded Mark Wainwright Analytical Centre Biomedical Imaging Facility (BMIF) laboratories located in the recently built Biological Sciences Building (E26) of the UNSW Biomedical Precinct. It must be located within a PC2 certified laboratory as it will be used to image genetically modified organisms. It also requires IT infrastructure to accommodate the transfer of large datasets that will be generated by users. The BMIF is a PC2 facility with the necessary IT infrastructure.

4 STRATEGIC PURPOSE OF REQUEST

Provide a short description (max 2 pages) of the impact the equipment/infrastructure/staff will have on improving UNSW’s research capacity. In particular, consider how the requested infrastructure will:

- support world-leading research
- enhance collaborations, including across disciplines
- meet the strategic priorities of the Faculty and UNSW, including the university’s [2025 Strategy](#)

Live cell imaging and analysis is a rapidly growing application that is being utilised by many UNSW researchers to study cell migration, proliferation, death, immune cell function, angiogenesis, cell-cell and cell-environment interactions, and the stem cell niche. The IncuCyte S3 is the state-of-the-art device for this application. It will enhance UNSW’s 2025 strategy by providing an excellent high-throughput imaging system that will significantly advance the world-leading research programs of staff in Medicine as well as Science listed below. It will position us to translate our research into health applications in alignment with the research and global objectives of the 2025 strategy. By housing the instrument in the BMIF, staff and students from across UNSW will have access thereby building and enhancing collaborations between Faculties and within the Faculty of Medicine.

SUPPORTING SPECIAL INITIATIVES

Ramaciotti Centre for Systems Microscopy – The IncuCyte S3 will leverage the recent award (under media embargo) of \$1M for the establishment of a Systems Microscopy Centre (**Gunning, Lock, Whan**).

The Centre will be the first such centre in the world which integrates multi-parameter (up to 1,000 simultaneous parameters) measurement of the properties of cells with cell behaviour and machine learning to discover the relationships between the spatial features of cell signalling, the structural properties of cells and their behaviour. This builds on the pre-eminent capabilities of the BMIF in fluorescence microscopy and the cutting-edge cell biology at UNSW which is bringing the force of single molecule science into an understanding of mechanisms which are responsible for cell function and underlie disease processes. Intrinsic to this new science is a recognition that it will now be possible to use principles of engineering, physics, biochemistry, cell biology and mathematics to create an integrated approach to cell function which identifies unsuspected relationships between the complex myriad of cell features. The IncuCyte S3 will allow us to incorporate the temporal dynamics of these parameters to gain insight into cause and effect relationships in time in a highly efficient manner.

Torch Initiative – The IncuCyte S3 provides a high throughput capacity to measure changes in key parameters with time in the context of drug screening. Four novel drug pipelines are currently being supported through the establishment of a spin-off company (**Hardeman, Gunning, Bryce, Stear**) under the Torch initiative. Industry partnership and commercialisation is one of the pillars of the Torch initiative. Novel drug compounds will be developed for the treatment of multiple cancers. Proof-of-principle has been provided by a 95-parameter screen developed at UNSW that has identified novel drug leads that impact cancer cell structure and proliferation. This demonstrate the power of large scale multi-parameter cell analysis. The IncuCyte S3 will provide the capacity to expand this analysis to the temporal relationships of these parameters and thus identify drug candidates that control cell motility and are candidates for anti-metastatic drugs.

Australian Centre for NanoMedicine (across Science, Engineering and Medicine Faculties at UNSW) – The IncuCyte S3 will be used to advance the industry partnership with Inventia to develop 3D Bioprinting of patient-derived tumouroids for precision medicine applications (**Kavallaris**). It will allow the analysis of cancer cell behaviour in a 3D environment, in real time particularly in response to novel nanoparticle therapies. The novelty and significance of this approach has been recognised through high calibre publications including the Journal of the National Cancer Institute, ACS Nano, Advanced Materials, Cancer Research and Nature Reviews Cancer. The innovative nature of the research has led to Plenary/Keynote invitations and innovation awards including the AFR/Westpac 100 Women of Influence Award in Innovation.

ADDRESSING FACULTY RESEARCH THEMES

This proposal is supported by researchers whose work furthers all of the Faculty of Medicine research themes:

- Cancer (**Hardeman, Gunning, Kavallaris, Bryce, Lock, Poole, Saunders, Stear**)
- Mindgardens (**Fath, Lees, Moalem-Taylor**)
- Non-communicable Diseases (**Chandrantham, Di Girolamo, Khachigian, Pimanda, Rye, Turner**)
- Triple I (**Biro, Khachigian**)

In addition, researchers whose work contributes to the critical enabling capability of Single Molecular Science (**Poole, Biro**) support this proposal.

The projects described by members of the Graduate School of Biomedical Engineering (**Knothe-Tate, Lord**) align with the UNSW 2025 vision of academic excellence as well as two of the six UNSW Research Strengths of Biomedical Sciences and Next Generation Materials & Technologies under the discipline of Biomedical Engineering and align with the Faculty of Engineering's research theme of Health.

Notably, congruent with UNSW 2025 strategy, Systems Microscopy is a highly multidisciplinary research approach, already establishing a collaborative constellation spanning the School of Medical Sciences and Faculties of Mathematics and Statistics, Computer Science and Art and Design. The IncuCyte S3 system will be a key enabling technology that will underpin cross-discipline collaborations.

Major Funding/Partnerships Supported

Hardeman / Gunning / Bryce / Stear - Multiple NHMRC Project grants, ARC Discovery grant, DIIS CRC-P grant w/ Novogen (industry partner), Torch spin-off company (over \$10M). Members of *Cancer* SPHERE

Kavallaris - NHMRC Program grant, ARC Program grant. Member of *Cancer* SPHERE

Biro - NHMRC Project grants, Cancer Institute NSW, Cancer Council, Cure Cancer Australia, EMBL Australia

Pimanda / Chandrakanthan - Multiple NHMRC Project grants, Celgene (industry partner). Members of *Cancer* SPHERE

Di Girolamo - NHMRC Project grant

Fath - NHMRC Project grant, ARC Discovery grant

Khachigian - NHMRC Program grant, NHMRC Australia Fellowship. Member of *Age and Ageing* SPHERE

Knothe-Tate - NHMRC Development grant

Lock - Ramaciotti Foundation (\$1M)

Lord - ARC Discovery and Linkage Project grants

Moalem-Taylor / Lees - Cancer Institute NSW (CINSW) Translational Program Grant (over \$3M)

Poole - NHMRC Project grant

Rye - NHMRC Program grant

Saunders - NHMRC Project grants

Turner - Multiple NHMRC Project grants. Member of *Age and Ageing* SPHERE

5 RESEARCH PROGRAMS/ GROUPS SUPPORTED

Provide a short description of the major research programs/ groups which will be supported by the equipment/ infrastructure, focusing on the significance and innovative nature of the research (max 1 page). For Network Labs (and other projects when applicable), provide a list of additional researchers or groups whose research will benefit.

The **Hardeman** and **Gunning** research group (+ **Bryce, Stear**) has developed multiple novel small molecule inhibitors of the cell cytoskeleton through the use of a high throughput image-based screen developed by them. Currently 4 novel drug pipelines are in development with applications for cancer, thrombocytopenia and diabetes in collaboration with Novogen (Australia biotech company), Cambridge University and a start-up company under the UNSW Sydney Torch initiative.

The **Kavallaris** research group uses 3D tumour spheroid models to study cancer growth, metastatic spread, and resistance to anticancer agents. They are international leaders in the development of nanomedicine for cancer diagnostics and therapeutics. As well the group measures specific changes associated with mutations in cancer cells and cancer therapy.

The **Biro** research group employs advanced light microscopy and biophysical techniques to study the mechanobiology of cytotoxic T cell-mediated responses against cancer. They are world leaders in imaging rapidly migrating cell populations, such as T cells, and dynamic process such as tumour engagement and cytotoxic delivery. The IncuCyte S3 will allow them to expand their capabilities to included long timescales.

The **Di Girolamo** group recently developed and are refining a novel autologous therapy to transplant ocular surface stem cells into patients with severe blinding corneal diseases. They have developed a transgenic mouse where corneal progenitor cells become illuminated with up to 10 fluorescent colours. The IncuCyte S3 will enable the ability to monitor the fate of these cells in culture and in *ex vivo*

organotypic models.

The **Fath** research group studies the pathogenic molecular mechanisms in neurodegenerative diseases and regulatory mechanisms that support neuronal regeneration using advanced cell culture models in combination with quantitative morphometric assays. Their unique contribution to the field is an understanding of the role of cell cytoskeletal components in neuronal development and disease which will be utilised in collaboration with the Hardeman and Gunning group to develop novel drug therapies.

The **Khachigian** group has generated novel small molecule inhibitors of angiogenesis, vascular permeability, inflammation and cancer as well as novel gene-therapeutic agents for proliferative vascular disease. The InCuCyte S3 will provide invaluable dynamic, real time live cell analysis of key functional cellular parameters affected by these compounds such as cell proliferation, migration, cell-cell interactions and invasion and microvascular tubule formation.

The **Knothe-Tate** group studies stem cells derived from the vascular connective tissue surrounding bone. They image the egression, motility, proliferation and differentiation of these cells which will yield fundamental knowledge to improve both banking of stem cells from patients undergoing hip and knee replacement as well as to improve implants that harness the body's own tissue healing capacities. They are conducting ground breaking work to drive the fate of stem cells into bone, fat, muscle, blood, etc., by manipulating mechanical and biophysical cues.

The **Lock** group uses a systems biology approach to studying cancer cell migration. In particular, they use high-throughput imaging and automated machine learning-based detection of cancer cell migration modes to track tens-of-thousands of individual migrating cancer cells over dozens of experimental conditions. His collaborations span Medicine, Mathematics and Statistics, Computer Science and Art and Design to drive enhanced understanding of cancer metastasis.

The **Lord** research group develops materials and molecules that replicate components of the extracellular matrix for both the correct function of implantable medical devices that interface with tissues and the controlled repair of tissues as a result of disease or injury. By mimicking these natural structures with man-made engineered materials and bioengineered molecules they have been working towards repairing blood vessels, skin and cartilage as well as extending the functional life of platelets in storage.

The **Moalem-Taylor / Lees** group use primary cultures of sensory neurons and dorsal root ganglion (DRG) explants to investigate molecular mechanisms of pain transmission and to test the effects of chemotherapeutic drugs on neurotoxicity and potential treatment with neuroprotective drugs. Chemotherapy-induced peripheral neuropathy (CIPN) is a severe, dose-dependent and progressive side-effect associated with cancer treatment that leads to significant morbidity with permanent symptoms. The InCuCyte S3 will significantly enhance the screening for chemotherapy-induced neurotoxicity and investigating neuroprotective agents for CIPN.

The **Pimanda, Chandrakanthan** groups have made 3 novel findings: (1) the discovery of a population of stem cells potentially important for endothelial-haematopoietic transition, (2) the discovery of novel cardiac vascular progenitor cells that may support cardiac repair and regeneration, (3) the investigation of differential responsiveness of myelomonocytic leukemia cells (responders vs nonresponders) to the current most effective agent AZA. The InCuCyte S3 would allow them to monitor cell-cell interactions during cell fate decision-making (1 & 2) as well as monitor bone marrow cell expansion in response to AZA (3).

The **Poole** research group seeks to identify and characterize mechanosensitive (MS) ion channels and their role in cellular force sensing, proliferation and migration in melanoma cells with disrupted MS channel activity. In addition, they investigate the role of MS channels in the proliferation of chondrocytes, those cells that maintain our cartilage.

The **Rye** research group studies cardiovascular disease and in particular atherosclerotic cardiovascular disease. They have discovered novel peptides that have the ability to repair endothelium by promoting migration of endothelial cells to areas of damage. In addition, they are determining whether agents that increase plasma high density lipoprotein levels generate new blood vessels in ischemic tissue beds.

The **Turner** lab investigates metabolic alterations in both diabetes and cancer with a focus on

understanding the metabolic reprogramming that underpins growth and proliferation in transformed cells. They are testing the therapeutic potential of novel targets involved in the uptake and metabolism of different nutrients in both primary cancer cells and in cells that are being primed for metastasis.

6 OPERATIONAL PLAN AND COSTS

Please provide a short description (max 1 page) of the operational plan for the infrastructure, including the expected ongoing operational costs associated with the project and how these will be met. Outline proposed access mechanisms where applicable. Network Labs are asked for more detail on meeting operational costs in the next section.

The IncuCyte S3 and the incubator in which it is housed, will be located in the BMIF/MWAC PC2 laboratory in the newly built Biological Sciences Building (E26). This will ensure that researchers from across UNSW will be able to obtain access and are comprehensively trained on the instrument as well as in the image analysis techniques.

The BMIF will control access to the IncuCyte S3 through its well-established processes for induction and training by the BMIF staff. Once a user is trained, access to the instrument will be controlled through the ACLS booking system. The software for offsite control of analysis is freely available.

Operational costs are recovered through a user-pays subscription mechanism that is in place.

7 COST RECOVERY MECHANISM FOR NETWORK LABS

For Network Labs only, provide a short description (max ½ page) of a proposed cost recovery mechanism that will be implemented to recover operational costs. Consider for example hourly rates for instrument usage or annual subscription fees or a cost-sharing arrangement to recover costs of materials, service and maintenance, consumables etc. Please note that this is indicative only; the Office of the Pro-Vice-Chancellor (Research Infrastructure) and the Mark Wainwright Analytical Centre will assist successful applicants in the set-up of an appropriate cost recovery mechanism.

N/A

8 BUDGET SUMMARY

For proposals involving equipment:

- At least **three quotes must be attached** to the application for each item over AUD30,000 (incl. GST), and one quote for each item under AUD30,000 (incl. GST). If fewer quotes are provided, this must be justified in Section 9 Budget Justification. Quotes are not required for items under AUD3,000 (incl. GST).
- When requesting quotes from suppliers, please use the “Request for Quotes” template available at <https://research.unsw.edu.au/unsw-research-infrastructure-scheme>.
- For complex quotes, please provide a one page quote summary or clearly identify the relevant items (e.g. by highlighting).
- For successful applications, Strategic Procurement will be providing advice and support.

For proposals involving staff, please use the salary calculator provided by the Grants Management Office for budget calculations: https://research.unsw.edu.au/document/salary_scales_for_grant_budgeting.xlsx.

If additional funding is being committed from other sources this must be clearly specified.

For Network Lab proposals, a 25% cash contribution from the host School(s) / Faculty towards the total cost of the project is required.

For all two-year projects, including Network Labs, clearly identify the split of funds over two years.

ITEM DETAILS / STAFF List equipment or other infrastructure purchase costs, specialist fit-out or set-up costs, IT infrastructure and staff costs <i>(add rows if needed)</i>	\$ COST	\$ REQUESTED CENTRALLY (ex GST)	\$ SCHOOL/ FACULTY APPROVED CONTRIBUTION <i>(if applicable)</i> (ex GST)	CONTRIBUTING SCHOOL(S)/ FACULTY(IES) <i>(if applicable)</i>
2018				
IncuCyte S3 + Software modules	\$292,932.00	\$292,932.00		
Incubator	\$9590.00	\$9590.00		
2018 TOTAL	\$302,522.00	\$302,522.00		
2019				
		N/A		
2019 TOTAL				
TOTAL				

8.1 Appropriate on-going space is currently available to house/operate this equipment/ infrastructure/ staff (refer to Site Checklist provided)? Yes No

8.2 The installation requirements (refer to Site Checklist provided) of the equipment to be purchased have been taken into account in the above budget estimates?
Yes No

8.3 Will there be a need for refurbishments? Yes No

If Yes, will these refurbishment costs will be covered: (i) School/Faculty OR (ii) a separate budget submission has been made via the Stay in Business Capital Funding (coordinated annually by Facilities Management) .

Please specify:

8.4 The OHS, Risk Assessment and Compliance requirements for the design, manufacture, importation, supply, installation/ erection, commissioning, use, alteration, dismantling, storage and disposal of the equipment have been taken into account? Yes No

8.5 The on-going maintenance and technical staff requirements have been considered and will be covered by the School/Faculty budget? Yes No

8.6 Has funding been sought from other sources for this or a closely related project?

- ARC LIEF Grant Yes No
- Other External Research Grant Yes No
- Operating budget Yes No
- Strategic Priorities Funds Yes No
- 2025 Strategy Business Case Yes No
- Other sources Yes No

Please specify:

- 8.7 Is this application eligible for consideration under the “NHMRC Equipment Grants funding” criteria outlined in the funding guidelines (Section 4.1b)? Yes No

9 BUDGET JUSTIFICATION

Briefly (max 1 page) provide a justification and priority for each budget item requested. Costings for major ICT/ plant/ equipment where only one quote is provided need to be fully justified. If any item is to be jointly owned, or installed “off-site”, this must be clearly specified and justified. For any staff support requested, justify the level of appointment.

The IncuCyte S3 is a replacement for an early model IncuCyte that has reached the end of its functional life. The newer model has vastly superior imaging capabilities yet still retains all the benefits to imaging inside a temperature and CO2 controlled incubator. The ability to generate high-throughput, long-term live-cell imaging data will enhance biomedical research at UNSW.

Due to the nature of the work that is being undertaken by the researchers supporting this application, all of the software modules will be required.

Quotes for 2 other live cell imaging systems have been obtained. They are for the Zeiss Cell Discoverer (List price \$376,587; UNSW discount price \$249,000) and the Nikon Eclipse Ti-E (List price \$304,079; UNSW discount price \$226,705). The IncuCyte S3 base price of \$192,127 is considerably lower.

While both the Zeiss and Nikon microscopes are excellent pieces of equipment, neither are capable of imaging 6 multiwell plates at once which severely limits their high-throughput capabilities. High throughput analysis is an important consideration due to the high number of drug discovery programs being undertaken within the Faculty. Additionally, neither of the alternate microscopes are able to analyse the results in real time, nor do they contain specific software modules to analyse angiogenesis, cell migration, chemotaxis, neurite outgrowth and spheroid outgrowth.

Panasonic incubator: This model is the recommended incubator for the IncuCyte S3. The incubator is large enough to hold the IncuCyte and has a port enabling the connection of the IncuCyte to mains power and for data transfer. The H₂O₂ sterilisation cycle of the incubator is also compatible with the IncuCyte which will result in less manual handling of the IncuCyte after installation should there be any need to decontaminate the unit.

APPENDIX A

Contacts for Advice and Assistance

- **Office of the Pro Vice-Chancellor (Research Infrastructure)**
Julia Muenchhoff (Project Officer)
Phone: 02 9385 2979
Email: pvcresin@unsw.edu.au

- **Strategic Procurement**
 - **Research and major equipment:**
Thomas Valin (Procurement Manager – Research and Major Equipment, Strategic Procurement/ Finance)
Phone: 02 9385 2645
Email: t.valin@unsw.edu.au

 - **IT related hardware/ software:**
Adele-Rae McAneney (Procurement Manager – IT Procurement, Strategic Procurement/ Finance)
Phone: 0419 167 484
Email: a.mcaneney@unsw.edu.au

 - **For general enquiries, please contact the Finance help desk:**
<https://www.fin.unsw.edu.au/contact-help>

- **RECS – Research Ethics and Compliance**
See <https://research.unsw.edu.au/recs> for contacts for advice on specific areas of compliance.

REQUEST FOR QUOTATION (RFQ)



RFQ DETAILS

Details for this RFQ are:

Quotation requested for	IncuCyte S3 and additional software modules
UNSW contact person	Prof. Edna Hardeman
Closing date	COB 8 th Sept 2017

CONDITIONS OF QUOTATION

Purpose

This RFQ seeks quotations from suppliers. Please note the UNSW Purchase Order Terms and Conditions, which apply to potential future purchases are contained within the Purchase Agreement attached to this RFQ. In absence of attachments, the UNSW Terms and Conditions will apply:

https://www.fin.unsw.edu.au/sites/default/files/content/tc_purchase.pdf).

Quotation Accuracy

Before submitting a quotation, suppliers must:

examine all information relevant to the risks and contingencies and other circumstances having an effect on the quotation; and

satisfy themselves:

that the price is correct; and

that it is financially and practically viable for them to enter into and perform the contract.

Quotation Lodgement

Quotations (including all supporting information, if any) must be fully received by the Closing Date. Suppliers should notify the UNSW Contact Person in writing on or before the Closing Date and Time if they find any discrepancy, error or omission in this RFQ.

Suppliers are asked to complete Part 4 of this RFQ document. Prices, responses and other information provided in the quotation must be in writing and in English.

Corruption or Unethical Conduct

Suppliers must comply with the requirements of the UNSW Code of Conduct which is available at <https://www.gs.unsw.edu.au/policy/documents/codeofconduct.pdf> and must disclose any conflicts of interests in their quotation.

Quotation Validity

It is not intended by UNSW or the supplier that an issue of a RFQ or a response to it commits, obligates or otherwise creates a legal relationship in respect to entering into a contract with that party. However, any quotation lodged with UNSW will constitute an irrevocable offer by the supplier, which remains open and capable of acceptance until **twelve months** from the RFQ closing date.

Acceptance of a Quotation

UNSW is not bound to accept the lowest or any quotation. UNSW shall not be in any circumstances responsible for any costs incurred by a respondent in preparing and submitting a quotation. Acceptance of a quotation or part of a quotation will be subject to the UNSW and the successful supplier to enter into a written agreement and/or the placement of a Purchase Order.

Disclosure Information

Following UNSW's decision, all suppliers will be notified of the outcome of their submitted quotations. Details of this quotation and the outcome of the quotation process may be disclosed in accordance with the *Government Information (Public Access) Act* (NSW).

UNSW contact person

All communications must be issued to the UNSW contact person defined in part 1 RFQ details.

REQUIREMENTS (to be completed by UNSW)

Functional requirements	Incucyte S3 for long term live cell dual colour imaging of multiple flasks/multiwell plates
Description of goods and/or services	Incucyte S3 HD/2CLR system package plus additional software modules: Cell Migration and Invasion assay kit, Chemotaxis, Angiogenesis, Neurotrack, and Spheroid. Additional trays and 12 months service contract
Delivery address	BMIF, Lowy Building, Gate 11, UNSW, 2052
Delivery terms (Incoterm 2010)	Quotation must include DDP (Delivery Duty Paid) or DAP (Delivered At Place) to the specified delivery address.
Installation, commissioning and acceptance testing	The quotation includes installation, commissioning and acceptance testing. Please list the acceptance testing your organisation will provide.
Warranty period	12 months warranty plus additional 12 month service contract for a total of 2 years coverage

SUPPLIER'S RESPONSE (to be completed by supplier)

Supplier's Information *(to be completed only if it is the first time the supplier is dealing with UNSW and does not have a vendor account already created in UNSW's system)*

If a Company, the Registered Company Name	ABACUS ALS PTY LTD
If a Partnership, the Partnership Name	
If an Individual, the Individual's Full Name	
Trading Name	ABACUS ALS PTY LTD
Australian Business Number (ABN) or Country Equivalent (e.g. Business Registration Number)	63 126 255 990
Australian Company Number (ACN) or Country Equivalent (e.g. Business Registration Number)	126 255 990
Registered Office (if a company)	Diploma Holdings PLC 46 Albert Street, Preston VIC 3072
Site Address (principal place of business)	9 University Drive, Meadowbrook QLD 4131
Postal Address (principal place of business)	PO Box 446, Waterford QLD 4133
Main Switchboard Telephone Number	1800 222 287
Company Email Address	CustomerCare@abacus-als.com
Main Point of Contact	Name: Rosanna Battung Position: Territory Manager Phone: 0417 424 479 Email: r.battung@abacus-als.com
Bank details	Abacus ALS Pty Ltd BSB 084-004 Acct 820-785-165
Insurance Details:	<i>Please attach copies of the certificates of currency for those insurances listed below.</i>
Public and Product Liability Insurance Cover	Please find attached
Professional Liability Insurance Cover	N/A
Workers Compensation Insurance	Please find attached

Supplier's offer to meet the requirements outlined in Part 3

Please provide a **fixed price quotation** in \$AU or in foreign currency with itemised costs for goods and/or services, delivery, installation, commissioning and acceptance testing.

Please also include:

- a list of installation site requirements (power, specialty gases, vibration limits, etc.), if applicable (e.g. in the case of scientific instrumentation);

- training offered on the goods and/or services covering safe operation, if applicable (e.g. in the case of scientific instrumentation);
- operating, maintenance and any other manuals required to operate the goods and/or services;
- acceptance tests which need to be successfully completed in the presence of UNSW technical staff in order for UNSW to accept the goods and/or services;
- a timeline detailing expected shipping, delivery, installation and training dates; fully inclusive warranty (including parts, labour and any applicable shipping and travel costs); and
- any offer of extended warranty or service.

Guide Note: Not all columns might apply to your RFQ, please delete columns from the table as required.

Description (add rows if required)	Units of Measure	Qty	Cost (excl. GST)	Delivery lead-time
IncuCyte S3 HD/2CLR System Package <ul style="list-style-type: none"> • Onsite installation and training • IncuCyte S3 controller unit • IncuCyte S3 gantry unit • HD/Dual color filter cube • IncuCyte S3 base software w/ phase object counting and whole well imaging • IncuCyte S3 fluorescent acquisition/processing software module • S3 calibration tray includes three (3) microscope objective: IncuCyte S3 4x, 10x and 20x • Three (3) microplate vessel trays 	1		\$192,127.00	6-8 weeks
Computer package: including PC 9 (with recommended computer specifications for the standard IncuCyte data processing and analysis), monitor, keyboard, mouse			Included	
UPS - as recommended by manufacturer				
Installation, commissioning and key operator training				
System packaging, shipping and handling charge			\$350.00	
<u>Additional Software Modules</u> (To be added to the System Package of the IncuCyte S3)				
Essen IncuCyte CellPlayer™ 96-well Cell Migration/Invasion Assay Kit – <i>For Scratch/Wound assays, incl. software and the Woundmaker tool</i> <ul style="list-style-type: none"> • 96-well Scratch Wound Cell Migration Application Module #0012 • One (1) Wound Maker 96 Tool #5025-0191 • Two (2) Wound Maker 96 well Rinse Boat Assemblies #4379 • Fifteen 96-well ImageLock Plates • One (1) IncuCyte Micro Plate Tray #5025- 			\$24,127.00	

0116 <ul style="list-style-type: none"> • Certificate of Analysis • Two (2) Biocision BCS-147 96F CoolBox Systems, each configured with the CoolBox Microplate System/CoolSink 96F • One (1) Biocision BCS-133 M30 CoolBox System configured with the CoolBox 30 System/CoolRack M30 • One (1) Biocision BCS-106 CoolSink 96F for 96 well flat-bottom plates • One (1) sachet of Alconox (14.2 g) residue free cleaning detergent • One (1) bottle of Virkon S (20 g) broad spectrum disinfectant Extracellular Matrix used in the Invasion Assay not supplied by Essen BioScience				
Essen IncuCyte NeuroTrack™ Software Module			\$15,207.00	
Essen IncuCyte Angiogenesis Software Module			\$15,207.00	
Essen IncuCyte Chemotaxis Cell Migration Software Module			\$15,207.00	
Essen IncuCyte Spheroid Software Module			\$15,207.00 Free if purchased before 30 Sept 2017	
Abacus ALS Comprehensive Service Contract 12 months (to start after the 12 months of manufacturer's warranty)	Year	1	\$15,500.00	
Please note: Prices may be subject to CPI/Exchange rate variation				

- All systems are supplied with a **12-month warranty**.
- Upon completion of the 12-month warranty period an Annual Instrument Maintenance & Service Agreement can be purchased.
- Prices do not include GST or freight and handling.
- Prices may be subject to CPI/Exchange rate variation.
- Price are valid for 30 days.
- This replaces any previous quotes.
- Abacus ALS reserves the right to amend this document on identification of any errors or omissions.

REQUEST FOR QUOTATION (RFQ)



RFQ DETAILS

Details for this RFQ are:

Quotation requested for	Cell IQ Large Capacity CO2 incubator
UNSW Contact Person	Prof. Edna Hardeman e.hardeman@unsw.edu.au
Closing Date	COB 8 th Sept 2017

CONDITIONS OF QUOTATION

Purpose

This RFQ seeks quotations from suppliers. Please note the UNSW Purchase Order Terms and Conditions, which apply to potential future purchases are contained within the Purchase Agreement attached to this this RFQ. In absence of attachments, the UNSW Terms and Conditions will apply:

(https://www.fin.unsw.edu.au/sites/default/files/content/tc_purchase.pdf).

Quotation Accuracy

Before submitting a quotation, suppliers must:

examine all information relevant to the risks and contingencies and other circumstances having an effect on the quotation; and
satisfy themselves:

that the price is correct; and

that it is financially and practically viable for them to enter into and perform the contract.

Quotation Lodgement

Quotations (including all supporting information, if any) must be fully received by the Closing Date. Suppliers should notify the UNSW Contact Person in writing on or before the Closing Date and Time if they find any discrepancy, error or omission in this RFQ.

Suppliers are asked to complete Part 4 of this RFQ document. Prices, responses and other information provided in the quotation must be in writing and in English.

Corruption or Unethical Conduct

Suppliers must comply with the requirements of the UNSW Code of Conduct which is available at <https://www.gs.unsw.edu.au/policy/documents/codeofconduct.pdf> and must disclose any conflicts of interests in their quotation.

Quotation Validity

It is not intended by UNSW or the supplier that an issue of a RFQ or a response to it commits, obligates or otherwise creates a legal relationship in respect to entering into a contract with that party. However, any quotation lodged with UNSW will constitute an irrevocable offer by the supplier, which remains open and capable of acceptance until **twelve months** from the RFQ closing date.

Acceptance of a Quotation

UNSW is not bound to accept the lowest or any quotation. UNSW shall not be in any circumstances responsible for any costs incurred by a respondent in preparing and submitting a quotation. Acceptance of a quotation or part of a quotation will be subject to the UNSW and the successful supplier to enter into a written agreement and/or the placement of a Purchase Order.

Disclosure Information

Following UNSW's decision, all suppliers will be notified of the outcome of their submitted quotations. Details of this quotation and the outcome of the quotation process may be disclosed in accordance with the *Government Information (Public Access) Act (NSW)*.

UNSW contact person

All communications must be issued to the UNSW contact person defined in part 1 RFQ details.

REQUIREMENTS (to be completed by UNSW): Remove all red Guide Notes before submitting to suppliers.

Functional requirements	A CO2 incubator large enough (230L) to house an IncuCyte S3 system, with a decontamination system that is compatible with the Incucyte S3 guide
Description of goods and/or services	Catalogue numbers MCO-230AICUV-PA or MCO-231AICUVH-PA
Delivery address	BMIF, Lowy Cancer Research Building, Gate 11, Botany St, UNSW Sydney, NSW 2052
Delivery terms (Incoterm 2010)	Quotation must include DDP (Delivery Duty Paid) or DAP (Delivered At Place) to the specified delivery address.
Installation, commissioning and acceptance testing	The quotation includes installation, commissioning and acceptance testing. Please list the acceptance testing your organisation will provide.
Warranty period	1-2 years

SUPPLIER'S RESPONSE (to be completed by supplier)

Supplier's Information *(to be completed only if it is the first time the supplier is dealing with UNSW and does not have a vendor account already created in UNSW's system)*

If a Company, the Registered Company Name	Bio-Strategy Pty Limited
If a Partnership, the Partnership Name	
If an Individual, the Individual's Full Name	
Trading Name	Bio-Strategy Pty Limited
Australian Business Number (ABN) or Country Equivalent (e.g. Business Registration Number)	78 105 668 282
Australian Company Number (ACN) or Country Equivalent (e.g. Business Registration Number)	
Registered Office (if a company)	8-10 Trade Park Drive Tullamarine, VIC 3043
Site Address (principal place of business)	8-10 Trade Park Drive Tullamarine, VIC 3043
Postal Address (principal place of business)	PO Box 14, Campbellfield, VIC 3061
Main Switchboard Telephone Number	1800 00 84 53
Company Email Address	Sales.au@bio-strategy.com
Main Point of Contact	Name: Simon Mears Position: Equipment Sales Specialist Phone: 0401 771 1296 Email: simon.mears@bio-strategy.com
Bank details	National Australia Bank 083-237 419068370
Insurance Details:	<i>Please attach copies of the certificates of currency for those insurances listed below.</i>
Public and Product Liability Insurance Cover	Public Value: AUD 20,000,000 any one occurrence, Expiry: 01/01/2018 Products Liability: AUD 20,000,000 in the aggregate any one period of insurance, Expiry 01/01/2018
Professional Liability Insurance Cover	AUD 5,000,000 any one Claim and in the aggregate Expiry 01/01/2018
Workers Compensation Insurance	461200 Professional Equipment Wholesaling (Policy Number 101160901)

Supplier's offer to meet the requirements outlined in Part 3

Please provide a **fixed price quotation** in \$AU or in foreign currency with itemised costs for goods and/or services, delivery, installation, commissioning and acceptance testing.

Please also include:

- a list of installation site requirements (power, specialty gases, vibration limits, etc.), if applicable (e.g. in the case of scientific instrumentation) **10-amp power supply**
- training offered on the goods and/or services covering safe operation, if applicable (e.g. in the case of scientific instrumentation) **upon delivery the CO2 Incubator will be set up in the lab, connected to gas supply and incubator calibrated by our service engineer**
- operating, maintenance and any other manuals required to operate the goods and/or services **Operations manual will be delivered with the CO2 Incubator**
- acceptance tests which need to be successfully completed in the presence of UNSW technical staff in order for UNSW to accept the goods and/or services **The CO2 Incubator will be connected up to power and gas supply, calibration of the CO2 level and temperature by our service engineer and any maintenance training questions required by und users**
- a timeline detailing expected shipping, delivery, installation and training dates; fully inclusive warranty (including parts, labour and any applicable shipping and travel costs); and
- any offer of extended warranty or service. **For the MCO-230AICUV extended warranty cost is \$500 per year. For the MCO-230AICUVH extended warranty cost is \$550**

Guide Note: Not all columns might apply to your RFQ, please delete columns from the table as required.

Description (add rows if required)	Units of Measure	Qty	Cost (excl. GST)	Delivery lead-time
Code SANYMCO-230AICUVH: Panasonic cell culture incubator 230L with UV light and H2O2 decontamination kit	1	1	\$7890	01/12/2017
Code SANYMCO-HP: H2O2 Generator (required for both MCO-230AICUV and AICUVH incubators)	1	1	\$500	In stock
Code SANYMCO-170EL-PW: Electronic door lock required for H2O2 decontamination	1	1	\$650	30/10/2017
MCO-230AICUVH extended warranty	1	1	\$550	N/A

Site installation checklist

Project Title:	Incucyte S3 – Long term, dual colour, high throughput live cell analysis system		
Proposed location: Building/ floor/ room #	E26/BMIF/2013		
Is location approved by the School/ Faculty?	Yes		
Is operational budget required/ approved by the School/ Faculty?	No		
Is the space fit-out budget approved or is it dependent on a future allocation (e.g. Capex SIB or equivalent)?	Not applicable		
Specialist laboratory or site – specify type	PC2 microscope facility	<i>Subject to approval by any of the following (select all that apply):</i> <input type="checkbox"/> Radiation Safety Committee <input type="checkbox"/> Animal Care and Ethics Committee <input type="checkbox"/> Gene Technology Research Committee <input type="checkbox"/> Other compliance (specify):	
A site installation guide has been obtained from equipment suppliers?	Yes		
Services review carried out by:	Dr Renee Whan		

Specific Requirements:

Accommodation/ space/ lab needs				
Service Category	Service	Service needed Y / N	Service available at site Y / N	Comments
Workplace	Staff to be accommodated, including number, FTE and level of each.	N	N	
Learning Environment	Students to be accommodated	N	N	
	Style of space; standard, PALS, student lead/other	N	N	
	Size and style of lectern & system interface requirements	N	N	
Whiteboards	Number/size/style	N	N	
Others (specify)		N	N	
Furniture/ Equipment	New/ existing or a combination?	N	N	
	If existing, is relocation and installation required?	N	N	
Security requirements	Card reader access control	Y	Y	Existing

	Security cameras – note reason	N	N	
AV (audiovisual) requirements	Type and number of screens/ speakers	N	N	
	Content development proposal	N	N	
	Content management proposal	N	N	
	Other AV	N	N	
Power requirements	3 phase power	N	N	
	15 amp power	N	N	
	Additional power capacity/ circuits	N	N	
	Other special power (specify)	N	N	
	Back-up generator power	N	N	
	UPS or power conditioning	Y	Y	Existing
IT requirements	IT cabling/ new ports	Y	Y	1Gb port required - existing
	High speed connectivity requirement	N	Y	
	Data storage required	Y	Y	BMIF/MWAC standard server
	Equipment integration required	N	N	
	Data security requirements	N	N	
	Other IT infrastructure (specify)	N	N	
Heating/ Cooling	Equipment cooling water	N	N	
	Chiller/ heat exchanger	N	N	
	Close control of air conditioning (temp/ humidity/ pressure)	N	Y	
	Air conditioning to deal with increased changed heat load	N	N	
	Cryogen supply	N	N	
Specialty gases, note type/s	Helium recovery	N	N	
	Gas reticulation/ specialist gases including Liquid nitrogen with or without phase separator	Y	Y	CO ₂ required - existing
	Gas dryers or other conditioning	N	N	
Environmental control	Ventilation extraction/ other specialist exhaust system	N	N	
	O ₂ depletion alarm	N	N	
	Other gas alarms	N	N	
	HEPA filtered air / other clean-room	N	N	
	PC ₂ / Clean room/ Biosafety/ Quarantine or related	Y	Y	PC ₂ microscope room - existing
	Fume cupboard	N	N	

	Safety interlocks (e.g. laser lab)	N	N	
	Acoustic treatment needed	N	N	
	Hazardous waste	N	N	
Specialist Fire Services Requirements	Gas Suppression or VESDA (Very Early Smoke Detection Apparatus)	N	N	
Floor infrastructure	Heavy equipment – advise total weight & issues	N	N	
	Anti-vibration requirements or table / other large infrastructure	N	Y	VC-C in lab
General	Other specialist water supply	N	N	
	Sink and/or handwash	Y	Y	Existing
	Safety shower and/or eyewash	Y	Y	Existing
	Compressed air	N	N	
	Cardax reader, back to base alarm, other security or access control	N	N	
Other	Specify other WHS measures	N	N	
	Life Safety System for hazardous substances	N	N	
	Additional fire hazards	N	N	
	Other special services?	N	N	

Site compatibility issues check

Site requirement / issue	Service needed Y / N	Service available at site Y / N	Comments
Equipment causes vibration, or electrical or magnetic interference	N		
Equipment is vibration sensitive, or sensitive to electromagnetic interference	Y	Y	Vibration – VC-C at site
Space accreditation required: PC Lab/Clean Room/Animal Facility/Laser Facility	Y	Y	Existing PC2
Specialist finishes	N	N	
Other – specify	N	N	

Specialist delivery costs & services not included in purchase contract

Delivery and access	Service needed Y / N	Service available at site Y / N	Comments
Crane, specialist removals/delivery contractor, scaffolding, special access, other	N	N	

Decant/ temporary relocation required to enable refurbishment or installation to proceed	No
Delivery access has been confirmed	Yes
Services works /additions costed by	N/A
Any other comments	
Installation budget or estimate	\$ NIL

#Contacts for Advice and Assistance

- **School / Faculty advice**

Where significant re-allocation or re-configuration of existing space, or Faculty-level financial and/or strategic support for refurbishment is required for a major project, please consult your Head of School/Centre and the General Manager or Infrastructure Manager for your Faculty.

Where new space allocation is involved, you will *also* require University-level approval.

- **Office of the Pro Vice-Chancellor (Research Infrastructure)**

Grainne Moran (PVC Research Infrastructure); Luc Betbeder-Matibet (Research Computing);
Julia Muenchhoff (Project Officer)

Phone: 02 9385 5600

Email: pvcresin@unsw.edu.au

- **Strategic Procurement**

- **Research and major equipment:**

Thomas Valin (Procurement Manager – Research and Major Equipment, Strategic Procurement/Finance)

Phone: 02 9385 2645

Email: t.valin@unsw.edu.au

- **IT related hardware/ software:**

Adele-Rae McAneney (Procurement Manager – IT Procurement, Strategic Procurement/Finance)

Phone: 0419 167 484

Email: a.mcaneney@unsw.edu.au

- **For general enquiries, please contact the Finance help desk:**

<https://www.fin.unsw.edu.au/contact-help>

- **RECS – Research Ethics and Compliance**

See <https://research.unsw.edu.au/recs> for contacts for advice on specific areas of compliance

- **Space Allocation**

For confirmation of all space allocation for projects and space advice, contact Jason Coombs, Director of Strategic Initiatives and Space Management, 9385 3781, j.coombs@unsw.edu.au

- **Facilities Management**

For local building services advice, contact your Faculty CFM

For capital works, contact Anne Warren, Manager, Capital Program, FM, 9385 3946, anne.warren@unsw.edu.au

For services infrastructure works, contact Greg Kaplan, Associate Director, Asset Management, FM, 9385 3831, greg.kaplan@unsw.edu.au

- **Workplace Health and Safety**

Contact your Faculty's Health Safety Environment Coordinator in the first instance, <https://safety.unsw.edu.au/contacts>

Essen BioScience Reference Material

Instrument:	IncuCyte® S3
Procedure Name:	IncuCyte Installation Requirements
Document Number:	8000-0536-A00
Date:	April 21, 2017

The purpose of this document is to lay out the basic site requirements for installation of an IncuCyte S3 system. Physical requirements of the gantry and controller must be met for installation into the incubator, as well as preparation for integration into the customer's existing computer network.

Physical requirements:

1. It is recommended that an internal measurement be taken of the incubator; taking into consideration shelf brackets, internal fans/sensors, and door knobs. **Incubator internal dimensions must meet or exceed:**
 - a. Height: 13.1" (33.3 cm)
 - b. Width: 18.2" (46.2 cm)
 - c. Depth: 19.3" (49.0 cm)
2. An incubator with an access port on the side or back for cables; Minimum diameter: $\frac{7}{8}$ " (2.2225 cm)
3. Due to the length of the connecting cables between the two components that make up the IncuCyte S3 system, the back of the computer controller must not be more than approximately 8ft (2.6m) from the access port of the incubator.
4. A 100/110V or 220V AC power outlet within 6 feet of the top incubator or where the controller will be installed. For distances exceeding 6 feet, the customer must provide an extension cable to make up the difference. **A UPS with a 1000VA/600Watt minimum is highly recommended, the APC BR1000G is a good example.**
5. An active 10/100/1000 Ethernet port within 14 feet of the top of the incubator or where the controller will be installed. For distances exceeding 14 feet, the customer must provide their own Ethernet cable (Category 5e or better).
***It is highly recommended that the IncuCyte be installed on the lowest possible shelf of the incubator, and in the bottom incubator if in a stack to eliminate vibration.*

Network requirements:

1. The IncuCyte has a 10/100/1000 RJ45 Ethernet port, it can communicate over any of those speeds.
2. The IncuCyte communicates with the client software via a web service on the controller; for this, Port 80 must remain unblocked (Refer to IncuCyte S3 Controller Configuration Overview 8000-0534-A00).
3. For possible troubleshooting and other access, it will be necessary to have access to the controller via the Microsoft Remote Desktop Connection tool; for this, Port 3389 must remain unblocked.
4. The IncuCyte network port can be set to use a static IP address if needed; by default it is configured to use DHCP. NOTE: The controller comes configured with a service port with a static IP address that should NOT be changed.

Access requirements:

1. Check to ensure that network and desktop IT support are available during the installation process.
2. Customer must have at least one networked computer running 64-bit Windows 7, 8, 8.1 or 10 available for installation of IncuCyte GUI software. This computer will need to be able to access whatever network subnet the IncuCyte controller is installed on (Refer to IncuCyte Client Computer Recommendation 8000-0535-A00).

RICHARD OLIVER
UNDERWRITING MANAGERS

Telephone: +61 3 8681 9909
Facsimile: +61 3 8681 9971
Direct Line: +61 3 8681 9914
Email: bostockk@richardoliver.com

DATE: 4 January, 2017

**SCIENTIFIC & MEDICAL LIABILITY INSURANCE
CERTIFICATE OF INSURANCE**

We confirm that the following insurance is current for the period as shown:

INSURED: Abacus ALS Pty Ltd, Abacus ALS Limited & Laboratory Scientific Engineering Pty Ltd.

INSURANCE COVER:

1. Public Liability
2. Care, Custody & Control
3. Product Liability
4. Errors & Omissions
5. Product Recall Expenses only

LIMIT OF INDEMNITY:

1. \$20,000,000 any one occurrence
2. \$ 500,000 per occurrence
3. \$20,000,000 any one occurrence and in the aggregate per policy period
4. \$ 2,000,000 any one loss and in the aggregate per policy period
5. \$ 100,000 any one loss and in the aggregate per policy period

PERIOD OF COVER:

From : 4pm on 31/12/2016
To : 4pm on 31/12/2017

TERRITORIAL LIMITS: Any where in the world except USA/Canada where the policy will only apply in respect of travelling executives and salesmen who are non-resident in such countries.

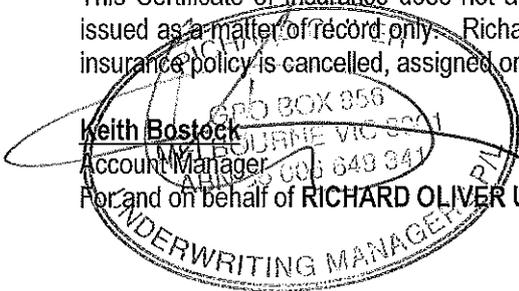
ENDORSEMENTS: As Expiring & Including NZ Exemplary Damages – Limit : NZ \$1,000,000

**CANCELLATION
CLAUSE:** Should the above described policy be cancelled before the expiration date thereof, the issuing company will provide 30 days prior written notice to the named Certificate holder.

INSURER: Chubb Insurance Australia Limited
720 Bourke Street, Melbourne. Vic. 3000

POLICY NUMBER: 02CL008767

This Certificate of Insurance does not amend, extend or otherwise alter the terms and conditions of the policy, and is issued as a matter of record only. Richard Oliver Underwriting Managers is under no obligation to inform any party if the insurance policy is cancelled, assigned or changed after the Issue Date.


Keith Bostock
Account Manager
For and on behalf of **RICHARD OLIVER UNDERWRITING MANAGERS**

Richard Oliver Underwriting Managers
ABN 66 006 649 341
Level 4,555 Bourke Street
MELBOURNE VIC 3000
www.roum.com.au



CERTIFICATE OF CURRENCY

ABACUS ALS PTY LTD
PO BOX 446
WATERFORD QLD 4133

Date of Letter: 31/10/2016

Dear Sir/Madam,

1. STATEMENT OF COVERAGE

The following policy of insurance covers the full amount of the employer's liability under the *Workers Compensation Act 1987*.

This Certificate is valid from 31/10/2016 to 31/10/2017.

The information provided in this Certificate of Currency is correct at: 31/10/2016

2. EMPLOYER'S INFORMATION

POLICY NUMBER 11855164
LEGAL NAME ABACUS ALS PTY LTD
TRADING NAME
ABN 63 126 255 990
ACN 126 255 990

WorkCover Industry Classification Number (WIC)	Industry	Numbers of Workers ⁺	Wages*
461200	Professional Equipment Wholesaling	6	916,673.97

* Number of workers includes contractors/deemed workers

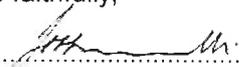
* Total wages estimated for the current period

3. IMPORTANT INFORMATION

Principals relying on this certificate should ensure it is accompanied by a statement under section 175B of the *Workers Compensation Act 1987*. Principals should also check and satisfy themselves that the information is correct and ensure that the proper workers compensation insurance is in place, ie. Compare the number of employees on site to the average number of employees estimated; ensure that the wages are reasonable to cover the labour component of the work being performed; and confirm that the description of the industry/industries noted is appropriate.

A principal contractor may become liable for any outstanding premium of the sub-contractor if the principal has failed to obtain a statement or has accepted a statement where there was reason to believe it was false.

Yours faithfully,


.....
Underwriting Department
Employers Mutual
UW Group 1



Enhance your cell growth with an intelligent CO₂ incubator designed for precise temperature and CO₂ control, efficient cleaning and rapid decontamination.



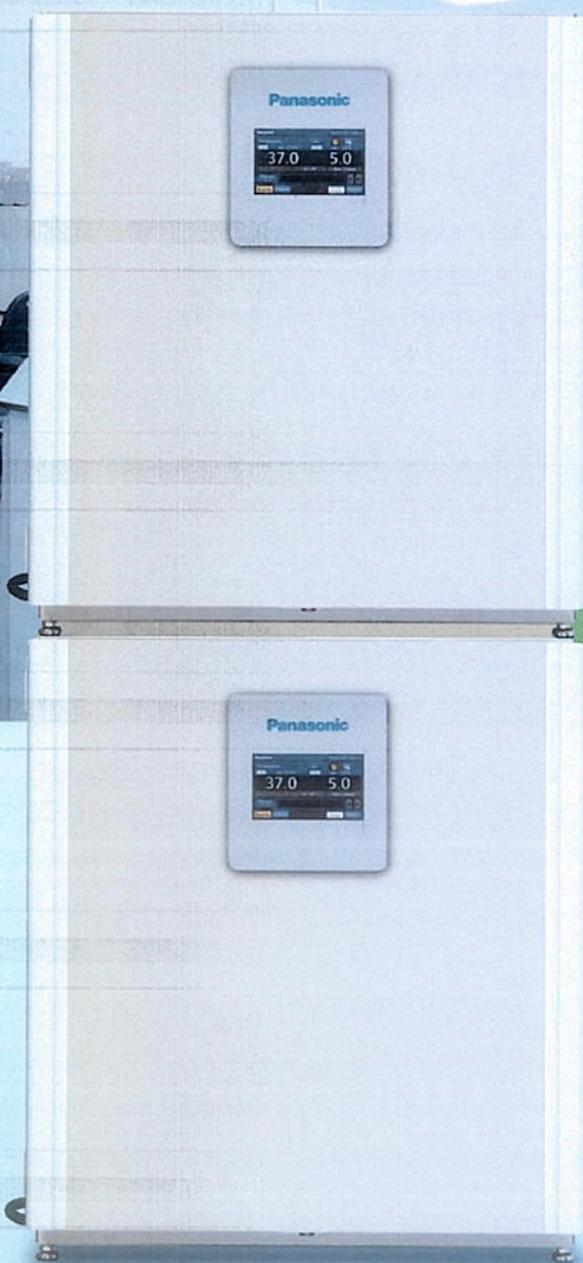
MCO-170AICUVH
MCO-230AICUVH

MCO-170AICUV
MCO-170AICUVH
MCO-230AICUV
MCO-230AICUVH

CE 0123
EU only

Next Generations of Incubators for Optimum Cell Culture

Panasonic's CO₂ incubators with a touchscreen control panel deliver superior usability, rapid cleaning, and effortless maintenance while keeping its tradition of outstanding environmental stability and precise performance.



Grow results, not bacteria!

MCO-170AIC/MCO-230AIC Incubators

Optimized for high-value samples including hard-to-grow and contamination-sensitive media/reagents.

Applications:

- Stem cell research
- Autologous tissue regeneration
- Genomic and proteomic expression
- Esoteric plant and amphibian cell culture
- Hyper-sensitive and transgenic cell culture
- Low volume media microplate work

Easy Use & Easy Maintenance

Integrated Tray Catches minimize cleaning time while LCD Panel enhances operation



Top Screen

Responds to gloved finger action.



LCD Touch Panel Controller

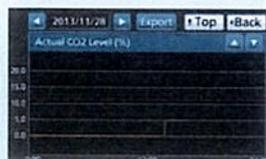
A WVGA color LCD touch panel delivers full control over different protocols. Control can be performed with gloved fingers as the controller is equipped with a resistive touchscreen.

USB Memory Data Transfer

Standard USB port provides convenient log data transfer to a USB memory stick and to a PC. Data log period is 1.5 months using 2-minute intervals.



USB port



Log screen example (CO₂ level)

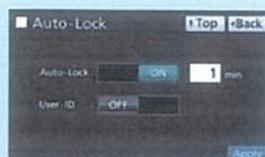
Note: It is impossible to use USB memory which is required password input.

Security

Automatic door locking (electric lock) can be set on the MCO-170AICUVH/MCO-230AICUVH (standard equipped) and other models equipped with the optional electric lock (MCO-170EL).

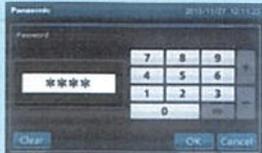


MCO-170AIC



MCO-230AIC

The Auto-Lock set up screen



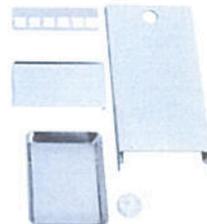
Password input window

*For MCO-170AIC, a password is required to unlock the Auto-Lock when the Key Lock is set.

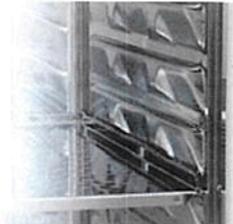
Integrated Tray Catches

Tray catches are integral parts of the chamber, opening up more space for trays, allowing the incubator to accommodate more culture containers.

(Comparison with MCO-20AIC/MCO-19AIC)



MCO-170AIC's/
MCO-230AIC's interior
components



MCO-170AIC's/MCO-230AIC's
tray catches
(integral part of the chamber)

MCO-170AIC's Tray
Internal dimension

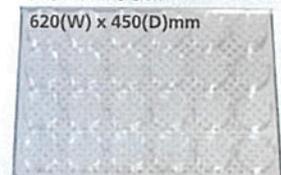


Up to 20 ø100mm dishes (92mm) can be arrayed (5 horizontally x 4 vertically)
*In-house comparison

16 dishes (MCO-19AIC)

→ **20 dishes** (MCO-170AIC)

MCO-230AIC's Tray
Internal dimension



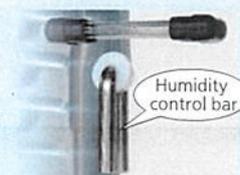
Up to 24 ø100mm dishes (92mm) can be arrayed (6 horizontally x 4 vertically)
*In-house comparison

20 dishes (MCO-20AIC)

→ **24 dishes** (MCO-230AIC)

Optimal Humidity Control

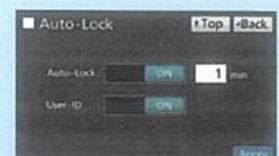
Stable humidity control not influenced by environmental conditions and frequent incubator door openings.



Humidity control bar

Japan and US patents pending

- Control Panel with single-user Key Lock (MCO-170AIC/MCO-230AIC)
- Addition of user ID function for better traceability (able to register up to 99 user-IDs and Passwords) (MCO-230AIC)



- Multiple detailed activity logs exported to individual CSV files.

Date	Time	Temp	CO2	Door	Unlock User
2015/3/16	11:13:38	37		0 Door Open	
2015/3/16	11:13:42	37		0 Door Close	
2015/3/16	11:22:10	37		0 Door Open	
2015/3/16	11:22:25	37		0 Door Close	
2015/3/16	13:40:56	37		0 Door Open	
2015/3/16	13:41:09	36.9		0 Door Close	
2015/3/16	13:50:01	38.9		0 Door Open	
2015/3/16	13:51:13	38.6		0 Door Close	
2015/3/16	13:52:25	37		0 Door Open	

User Access log

Design & Technology



inCu saFe Construction for Germicidal Protection

- Panasonic offers exclusive use of inCu saFe copper-enriched stainless steel alloy interior surfaces within a technical design created to eliminate contamination sources and to mitigate the effect of airborne contaminants introduced through normal use.
- Chart summarizes test results with four strains of mycoplasma. Results demonstrate how Panasonic inCu saFe copper-enriched stainless steel alloy offers germicidal properties of conventional C1100 copper while maintaining both corrosion-proof and discoloration-resistant properties of conventional stainless steel 304.

Mycoplasma Stain	Positive Control	Conventional Stainless Steel 304	Panasonic inCu saFe	Conventional Copper C1100
Mycoplasma fermentans PG18	YES	YES	NO	NO
Mycoplasma orale CH19299				
Mycoplasma arginini G230				
Mycoplasma hominis PG21				

*"YES" mycoplasma strains grew on the material.
"NO" no mycoplasma strain grew on the material.*

Accurate Temperature Control

- The patented Direct Heat and Air Jacket conditioning system precisely regulates temperature through three independent heating zones under microprocessor PID* control. Uniform temperatures are further enhanced by gentle fan circulation.

*Proportional Integral Derivative



- The main heater provides precise temperature control.
- The bottom heater warms the distilled water and controls chamber humidity.
- The outer door heater prevents condensation on the inner door and facilitates quick temperature recovery after door openings.

Direct Heat and Air Jacket Conditioning System

- To avoid cell culture desiccation, the MCO-170AIC/MCO-230AIC maintains up to 90% RH at 37°C.
- Humidification is achieved by reliable natural evaporation and forced-air circulation.



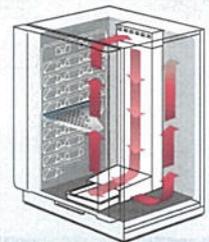
Precise CO₂ Control

- Panasonic proprietary single beam dual detector infrared CO₂ system offers unprecedented control accuracy and stability by simultaneously measuring two wavelengths for continuous zero calibration.
- Benefits include ultra-fast recovery without overshoot and accurate CO₂ averages during periods of frequent incubator access with multiple door openings.
- An optional STD gas auto calibration kit is available.

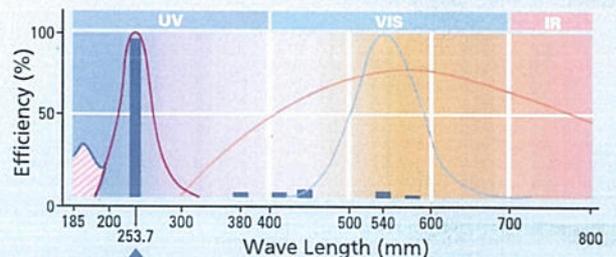


SafeCell UV Decontamination

- SafeCell UV includes a programmable ultraviolet lamp, isolated from cell cultures, that decontaminates conditioned air and humidity reservoir water to prevent contamination without affecting cell cultures in vitro.
- Contaminants trapped within the humidifying pan at the base of the plenum are destroyed by high intensity, ozone-free ultraviolet light.
- Decontaminated, humidified air is released from the lower plenum for vertical convection through and around the perforated shelves. Interior air motion is suspended when the door is opened, minimizing movement of room air contaminants into the chamber. The unique air duct system also improves temperature recovery characteristics.



Airflow and water pan decontamination using a UV system



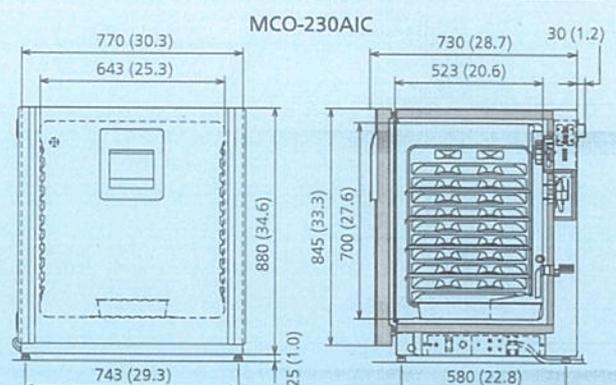
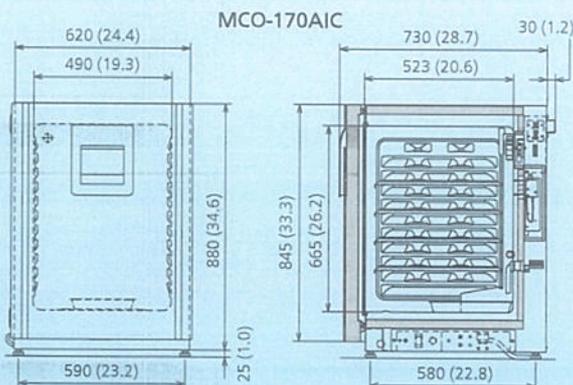
Use of the MCO-170AICUVH/MCO-170AICUV/MCO-230AICUVH/MCO-230AICUV ultraviolet lamp is a highly effective ozone-free contamination control technique.

■ Panasonic Lamp ■ Ozone Release ■ Germicidal Effect ■ Sunlight

The SafeCell UV lamp cycle is factory set for normal use, and can be re-programmed as desired by entering parameters through the central microprocessor control panel. Program parameters for the H₂O₂ decontamination cycle are non-adjustable for operator safety.

Dimensions

Unit: mm (inch)



H₂O₂ Decontamination Cycle

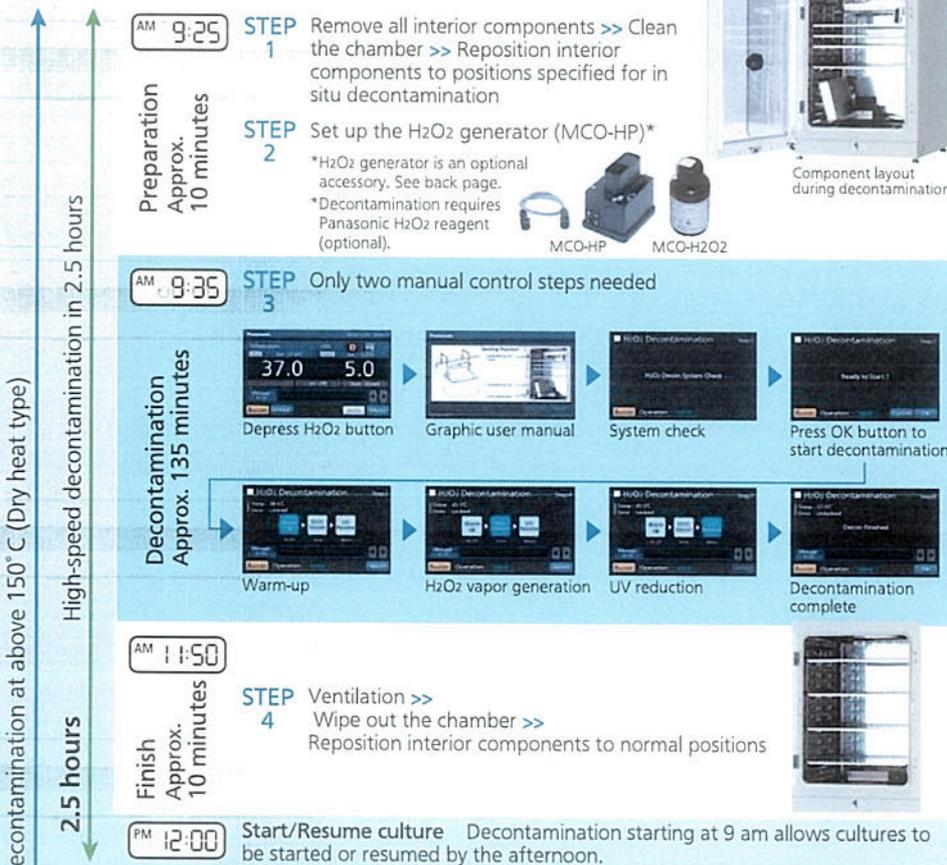
H₂O₂ Rapid, Effective and Safe H₂O₂ Decontamination Cycle

Industry-first Panasonic unique high-speed decontamination system utilizing vaporized H₂O₂ offers time-saving and documented chamber decontamination with complete safety.

- Full decontamination process takes less than three hours, saving valuable time. For example, if the decontamination cycle is started at 9 am, the unit will be ready for use in the afternoon.
- All interior components are decontaminated in situ. No need for time-consuming removal and autoclaving.
- No high heat emission. No sensors removal necessary.

- After decontamination H₂O₂ vapor is decomposed to harmless water and oxygen by UV light.
- Outer door is locked automatically by the electric interlock system during the decontamination cycle to ensure operator safety.
- Unlike high-heat decontamination incubators, Panasonic's unique H₂O₂ decontamination cycle does not emit high heat. Therefore, when two MCO-170AIC/MCO-230AIC units are stacked, one incubator can be decontaminated without affecting the temperature of the other.

H₂O₂ decontamination process (example)



Chamber conditions during decontamination

Start of H₂O₂ solution vaporization
H₂O₂ solution in the H₂O₂ generator (MCO-HP) is sprayed into the chamber by the ultrasonic transducer.

H₂O₂ fills up chamber
H₂O₂ mist is quickly gasified to thoroughly fill up the chamber.

UV radiation for H₂O₂ reduction

- UV lamp turns on.
- H₂O₂ gas is reduced to water and oxygen.

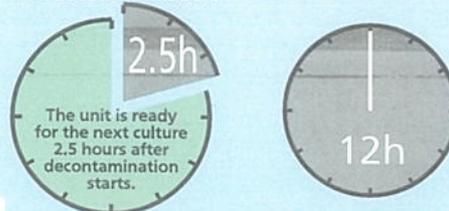
*Above H₂O₂ vaporization photos are concept images only.

*Above decontamination process is performed with standard interior items. Additional shelves and dishes may reduce decontamination effectiveness.

*Decontamination time shown above is for indication only. Actual process time may differ depending on chamber cleaning time and set-up time.

Time comparison between the H₂O₂ decontamination process and sterilization at above 150°C

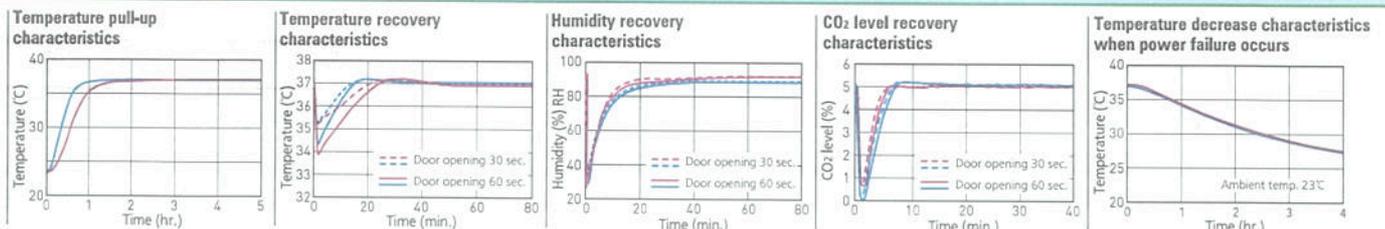
MCO-170AIC/MCO-230AIC H₂O₂ decontamination Average time required for decontamination above 150°C



One-day cultures are not possible with dry heat type incubators.

Performance Data MCO-170AIC / MCO-230AIC

*Panasonic research as of November 2013



Specifications

	Model No.					
110V-120V, 60Hz	MCO-170AIC-PA	MCO-170AICUV-PA	—	—	MCO-230AICUV-PA	—
220V, 60Hz	MCO-170AIC-PK	MCO-170AICUV-PK	—	MCO-230AIC-PK	MCO-230AICUV-PK	—
220V-240V, 50Hz/60Hz (CE)	MCO-170AIC-PE	MCO-170AICUV-PE	MCO-170AICUVH-PE	MCO-230AIC-PE	MCO-230AICUV-PE	MCO-230AICUVH-PE
Contamination control						
H ₂ O ₂ decontamination system	Optional	Optional	Standard	Optional	Optional	Standard
SafeCell UV system	Optional	Standard	Standard	Optional	Standard	Standard
inCu safe copper-enriched stainless interior						
Single beam, dual detector IR CO ₂ sensor			Standard			
Direct Heat & Air Jacket (DHA) heating system			Standard			
Environmental performance						
Temperature control range	+5°C above ambient to 50°C*1 (Ambient temperature: 5°C-35°C)					
Temperature control uniformity	±0.25°C (23°C ambient, setting: 37°C, CO ₂ : 5%, no load)*2					
CO ₂ control range and deviation	0% to 20% / ±0.15% (23°C ambient, setting 37°C, 5% CO ₂ , no load)					
CO ₂ sensor platform	Ceramic based, single beam infrared sensor, with dual wavelength measurement for continuous auto-zero calibration					
CO ₂ sampling, patent pending	No moving parts; airflow pass over in/out ports to sustain continuous sampling					
CO ₂ calibration	Automatic, continuous zero reference calibration. Optional STD gas auto calibration					
Airflow	Gentle vertical airflow, continuous with inner door closed					
Interior humidity	95% ±5%R.H. at 37°C by natural evaporation with humidifying pan					
Control, monitoring, alarm						
Temperature and CO ₂ control	P.I.D. control system setpoint resolution 0.1°C, 0.1%					
Data acquisition	Automatic log function of temperature, CO ₂ , Door opening/closing, Alarm and CSV file output					
Communication	Remote alarm contacts standard. Optional 4-20mA connection. Optional with RS-232C/ RS-485/LAN data ports					
Cabinet design and construction						
Touch panel (WVGA full color LCD)	Standard					
USB data logging	Standard					
Exterior cabinet and door	Galvanized steel with backed-on finish					
Interior and shelves	Copper-enriched stainless steel					
Inner door	Tempered glass					
Insulation	Extruded polystyrene foam					
Outer door	Reversible heated					
Access port	Diameter 30mm port with non-VOC silicone stoppers (1 on back side)					
Leveling feet	4, Adjustable					
Energy and CO₂ utilities						
Maximum power consumption	Max. 380W			Max. 440W		
Maximum heat discharge	1,070kJ/h			1,250kJ/h		
CO ₂ gas connection	4mm to 6mm inner diameter tubing					
CO ₂ gas pressure	0.03 MPa (G) (0.3kgf/cm ² G, 4.3psiG) from two stage CO ₂ regulator					
Dimensions, weights, capacities						
Internal dimensions (W x D x H)	490 x 523 x 665mm / 19.3 x 20.6 x 26.2inch			643 x 523 x 700mm / 25.3 x 20.6 x 27.6inch		
External dimensions (W x D x H) *3	620 x 710 x 905mm / 24.4 x 28.0 x 35.6inch			770 x 730 x 905mm / 30.3 x 28.7 x 35.6inch		
Volume	165 Liters (5.8 cu.Ft.)			230 Liters (8.1 cu.Ft.)		
Shelves	4 supplies as standard (Maximum 10), Exterior dimensions: 475 (W) x 450 (D) x 12 (H) mm, maximum load 7 kg/shelf			4 supplies as standard (Maximum 10), Exterior dimensions: 620 (W) x 450 (D) x 12 (H) mm, maximum load 7 kg/shelf		
Net weight	80 kg (176 lbs.)			90 kg (198 lbs.)		

*1 When ambient temperature is 25°C, temperature control range: 30°C - 50°C. Regardless of ambient temperature, the maximum of temperature control range is always 50°C.
 *2 The measurement condition complies with Panasonic specified measuring method. *3 External dimensions of main cabinet only. See dimension drawings showing handles and other external projections.

Data Management

Multi-point data logging offers push-button graphical display. Panasonic DAQ* system permits remote transmission, data logging and live monitoring. *Data Acquisition

Field-reversible Door (select right/left opening)

Double-stacking matching table

Spacer for double-stacking	Upper unit	
	MCO-230AIC	MCO-170AIC
MCO-230AIC	MCO-170PS	MCO-230SB
MCO-170AIC	—	MCO-170PS
MCO-19AIC(M)	—	MCO-170SB
MCO-18AC	—	MCO-170SB
MCO-20AIC	MCO-230SB	MCO-170SB
MCO-5AC	—	—
MCO-5M	—	—

*For positioning units on a roller base, please refer to "Optional Accessories".

*If configuring a double-stack, make sure the double-stacking dedicated securing hardware and spacer are used (see "Optional Accessories").

Optional Accessories

	MCO-170AIC	170AICUV	170AICUVH	230AIC	230AICUV	230AICUVH
UV system set	MCO-170LVS	Standard equipment		MCO-170LVS	Standard equipment	
H ₂ O ₂ decon board	MCO-170HB	Standard equipment		MCO-170HB	Standard equipment	
Electric lock	MCO-170EL	Standard equipment		MCO-170EL	Standard equipment	
H ₂ O ₂ generator	MCO-HP			MCO-HP		
Double stacking bracket	MCO-170PS			MCO-170PS		
Stacking plate	MCO-170SB			MCO-230SB		
H ₂ O ₂ reagent	MCO-H2O2			MCO-H2O2		
Gas regulator	MCO-100L			MCO-100L		
Gas auto changer	MCO-21GC			MCO-21GC		
STD gas auto calibration kit	MCO-SG			MCO-SG		
Tray	MCO-170ST (same as standard accessory)			MCO-230ST (same as standard accessory)		
Half tray	MCO-25ST			MCO-35ST		
Roller base	MCO-170RB			MCO-230RB		
Small door	MCO-170ID			MCO-230ID		
Optional Software product						
Interface board; for LAN				MTR-L03		
Interface board; for RS-232C/RS-485				MTR-480		
Interface board				MCO-420MA		
Optional product for using in the chamber				Shaker for CO ₂ incubator (MIR-S100C)		

Appearance and specifications are subject to change without notice.

Caution: Panasonic guarantees the product under certain warranty conditions. Panasonic is in no way shall be responsible for any loss of content or damage to content.

Preservation, Culturing, Drying, and Sterilization Equipments



The management of the design, development, production, sales support, and servicing of the above.

Panasonic Healthcare Co., Ltd. Biomedical Division

1-1-1 Sakata, Oizumi-machi, Oura-gun, Gunma, Japan 370-0596

Panasonic Healthcare Co., Ltd. Biomedical Division, the producer of Incubators, is certified by TÜV SÜD for the product quality management system.



Panasonic Healthcare Co., Ltd., Biomedical Division is certified for: Environmental management system: ISO14001

DISTRIBUTED BY:

Panasonic

<http://www.panasonic-healthcare.com/>

Printed in Japan 3104-2015-06-AA



QBE Insurance (Australia) Limited
ABN 78 003 191 035 - Incorporated in Australia
PO Box 44, Auckland 1140
T: 64 9 366 9920 F: 64 9 366 9930 www.qbe.co.nz

Certificate of Insurance

QBE Insurance confirms insurance cover is in force as follows:

Insured	:	Bio-Strategy Holdings Limited (previously known as Romney 40 Limited), Albany Instrumentation Limited, Bio-Strategy Investments Limited (run off), Bio-Strategy Limited, Bio-Strategy Pty Limited (previously known as Bio-Strategy Distribution (Pty) Limited), Kendro Laboratory Products Limited (run off), Kendro Instruments Limited (run off), Strahan Holdings Limited (run off)
Policy Number	:	800036804PLI
QBE Line	:	100.00%
Period of Insurance	:	From 1 January 2017 at 4pm to 1 January 2018 at 4pm
Risk Type	:	Directors & Officers
Wording	:	Directors Liability DOL0514
Limit of Indemnity	:	NZD 1,500,000 any one Claim and in the aggregate
Territorial Limit	:	Worldwide
Risk Type	:	Directors & Officers
Wording	:	Directors Liability Defence Costs DDC0514
Limit of Indemnity	:	NZD 500,000 any one Claim and in the aggregate
Territorial Limit	:	Worldwide

Cover is subject to the terms and conditions of the policy as issued. For a full description of the coverage please refer to the policy document.

Issued and signed by QBE's authorised representative

Dated: 22 February 2017



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ABN 78 003 191 035 - Incorporated in Australia
PO Box 44, Auckland 1140
T: 64 9 366 9920 F: 64 9 366 9930 www.qbe.co.nz

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Policy Number : P000037193PLI

QBE Line : 100.00%

Period of Insurance : From 1 January 2017 at 4pm to 1 January 2018 at 4pm

Risk Type : Professional Indemnity

Wording : Marsh PI (Civil) PIM0614 PIM0614

Limit of Indemnity : AUD 5,000,000 any one Claim and in the aggregate

Territorial Limit : New Zealand and Australia

Cover is subject to the terms and conditions of the policy as issued. For a full description of the coverage please refer to the policy document.

Issued and signed by QBE's authorised representative

Dated: 22 February 2017



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Policy Number	:	800036803PUL
QBE Line	:	100.00%
Period of Insurance	:	From 1 January 2017 at 4pm to 1 January 2018 at 4pm
Risk Type	:	Public Liability
Wording	:	General Liability GEL0516
Limit of Indemnity	:	Public Liability: AUD 20,000,000 any one Occurrence Products Liability: AUD 20,000,000 in the aggregate any one Period of Insurance
Policy Territory	:	Worldwide except for NanoString Technologies Inc., where the territory is New Zealand / Australia
Risk Type	:	Statutory Liability
Wording	:	Statutory Liability STL0110
Limit of Indemnity	:	NZD 500,000 any one Event and in the aggregate any one Period of Insurance
Territorial Limit	:	New Zealand
Risk Type	:	Employers Liability
Wording	:	Employers Liability (Claims Made) ELC0110
Limit of Indemnity	:	NZD 500,000 any one Claim and in the aggregate any one Period of Insurance
Territorial Limit	:	New Zealand

Cover is subject to the terms and conditions of the policy as issued. For a full description of the coverage please refer to the policy document.

Issued and signed by QBE's authorised representative

Dated: 22 February 2017



Carl Zeiss Pty. Ltd., Office 4, 40-52 Talavera Road, PO Box 501, North Ryde, NSW 2113. ACN: 008 410 704, ABN: 82 008 410 704
Tel: +61 2 9020 1333 / 1300 365 470, Fax: +61 2 9020 1330, Email: microinfo.au@zeiss.com, Web: www.zeiss.com.au

Quotation Prepared For:

Dr. Michael J Carnell
Research Associate
Biomedical Image Facility (BMIF) | Mark Wainwright
Analytical Centre
Lowy Cancer Research Centre C25
University of New South Wales, NSW, 2052
t: (02) 9385 1720 m: 0450 577 128
email: m.carnell@unsw.edu.au

Validity: 30 days from date of quotation
GST: Excluded
Duty: Not Applicable
Time of Delivery: 10 - 12 weeks
Place of Delivery: F.I.S. UNSW
Date: 30/05/2017
Prepared by: Arne Muller
Mobile: 0413 759 800
Fax orders to: 02 9020 1330
Email orders to: microinfo.au@zeiss.com

Quotation Number: AM 12-17-D

Summary

[1] Cell Discoverer 7

Imaging System for automated imaging and live-cell imaging

as per configuration below

Total: \$ 376,587.92
Special UNSW Price: \$ 249,000.00



Description	Qty	Catalogue Number
[1] Cell Discoverer 7		
<p>Celldiscoverer 7 system unit Celldiscoverer 7 system unit Automated, inverted microscope with integrated darkroom for observation of life and fixed samples. The system unit includes:</p> <ul style="list-style-type: none"> - automatic sample container recognition - automatic bottom thickness measurement - automatic barcode reader - automatic sample focusing, hardware-based - active focus stabilization, hardware-based - apochromatic incident-light beampath with adaptive field stop - Reflected-light illuminator FL for up to 7 LEDs (385 / 420 / 470 / 520 / 567 / 590 / 625 nm) - Filter wheel for beam splitting, 5x - Emission filter wheel 7x - Transmitted-light illuminator with IR-LED - Transmitted-light contrast module for phase-gradient contrast - Scanning stage 300x140 - Microscope camera AxioCam 506 mono - Calibration set including: <ul style="list-style-type: none"> 1x Insert plate for 3 calibration slides 3 calibration slides, 1x calibration microwell plate - external camera port - pipetting access - UV-disinfection unit - afocal magnification changer 0.5x / 1x / 2x Provides a magnification range of 2,5x - 100x depending on objective configuration - Objective Plan-Apochromat 5x/0.35 - power supply 100 - 240 V / 50 - 60 Hz / max. 6 A - dimensions (H x W x D): approx. 700 mm x 710 mm x 640 mm 	430039-9000-000	
Optical equipment		
<p>Objective Plan-Apochromat 20x/0.95 autocorr for Celldiscoverer 7 Automated correction mechanism for cover glass/cycloolefin bottom thickness 0.13 - 0.21 mm and polystyrol bottom thickness 0.15 - 0,21 mm. Automated objective heating. The objective contains an ACR chip and a temperature sensor. FWD=0.76mm, independent of magnification Offers in combination with afocal magnification changer the following specifications:</p> <ul style="list-style-type: none"> - 10x / 0.5 - 20x / 0.8 - 40x / 0.95 <p>Parfocal length 75 mm. Flange connection for fixed objective orientation.</p>	430039-9030-000	

Description	Qty	Catalogue Number
Objective Plan-Apochromat 50x/1.2 W autocorr with autoimmersion for Celldiscoverer 7 Automated correction mechanism for cover glass/cycloolefin bottom thickness 0.13 - 0.21 mm and polystyrol bottom thickness 0.15 - 0,21 mm. Automated water immersion and automated objective heating. The objective contains an ACR chip and temperature sensors. FWD=0.84mm, independent of magnification Offers in combination with afocal magnification changer the following specifications: - 25x / 1.2 W - 50x / 1.2 W - 100x / 1.2 W Parfocal length 75 mm. Flange connection for fixed objective orientation.		430039-9050-000
Fluorescence illumination		
LED Set 01 for excitation wavelengths 385, 470, 567, 625 nm		423057-9001-000
Filter Set 90 HE for Celldiscoverer 7 (E)		489090-9030-000
Single band-pass filter set for eGFP		000000-0000-000
Single band-pass filter set for mCherry		000000-0000-000
Incubation Heating		
Incubation set heating S1 for Celldiscoverer 7		433615-9000-000
Insert plate for 1 Petri dish 35/60		432332-9040-000
Insert plate for 2 slides 76x26 mm		432332-9050-000
TempModule S1 for Celldiscoverer 7 (D)		411860-9100-000
CO2 Module S1 for Celldiscoverer 7 (D)		411857-9130-000
Extension housing for Celldiscoverer 7 system unit		430039-9100-000
Computer and Software		
Microscopy Workstation High-End Xeon Quad-Core multilingual (O)		410203-9909-000
Memory 32 GB (2x16) DDR4-2133 MHz ECC registered RAM (O)	2x	410303-3203-000
Language Package Windows 7 Ultimate Embedded x64 English US (O)		410377-0200-000
Trigger board µCon HS (PCI xPress) (D)		400100-9021-000
ZEN 2.3 celldiscoverer Hardware License Key		410135-1024-230
ZEN Module Macro Environment Hardware License Key		410136-1002-120
System Table		
System table, mid size, air damped, level regulated pressured air supply necessary, long side open, with breadboard, 1200x900mm <i>Note: Actual table supplied may be a suitable ex-demo unit</i>		000000-2147-376
Service Contract		
Optime "Complete" Service Contract for Year 2		000000-0000-000

Description**Qty Catalogue Number**

Summary of Terms and Conditions of Quotation and Sale**Documentation**

User manuals are supplied free of charge.

Prices

Prices are firm and not subject to change.

Goods and Services Tax

GST is not included in this quotation and will be added to the invoice upon sale of the quoted items.

Validity

This quotation is valid for a period of thirty (30) days from date of quotation.

Warranty

The ZEISS manufactured equipment on offer carries a one year warranty on parts and labour. Non-ZEISS manufactured equipment carries the original manufacturer's warranty. See paragraph 9 of the attached Terms and Conditions of Sale for further details.

Payment Terms

Payment in full is due thirty (30) days from date of invoice. Payment by credit card will incur additional fees (1% for VISA and MasterCard and 3% for AMEX).

Quality Assurance

Carl Zeiss Pty Ltd and Carl Zeiss (NZ) Ltd are certified to ISO 9001.

Terms and Conditions of Sale

Please see the attached Terms and Conditions of Sale which form an integral part to this quotation. For fax quotations, refer to the original copy in the mail.

For e-mail quotations, this document is attached as a separate file.

Disclaimer

ZEISS sells and supports integrated imaging solutions for the commercial and academic community. Importantly the computer workstation included with these systems forms an integrated part of the final system. Customers are advised to purchase their computer system at the time of system integration from ZEISS. Customers wishing to purchase their computer system from a third party vendor will be provided with absolute computer requirements by ZEISS to maximise the imaging system performance and minimise the integration time. However, customers are warned that purchase of third party systems may result in sub-optimal integration into the imaging system and further installation time and costs. ZEISS guarantees only those computer workstations supplied and supported by us within Australia and New Zealand.

Price Fluctuation

Pricing is fixed for the term of 30 days from quotation date. After this date Carl Zeiss Pty Ltd and Carl Zeiss (NZ) Ltd reserve the right to change the pricing due to currency fluctuations.



Coherent Scientific Pty. Ltd.

ABN 20 008 265 969
Incorporated in South Australia

116 Sir Donald Bradman Drive
Hilton SA 5033
Australia

+618 8150-5200
+618 8352-2020
sales@coherent.com.au
www.coherent.com.au

COMPANY NAME	The University of New South Wales	FROM	Ben Hegarty
DEPARTMENT	Biomedical Image Facility (BMIF)	DATE	September 27, 2016
ATTENTION	Dr Michael Carnell	PAGES	5
EMAIL	m.carnell@unsw.edu.au	PHONE	+61 499 050 287
COPIES TO		OUR REFERENCE	BHe-Nikon-1375c
SUBJECT	Nikon Live Cell microscope		

27-09-16: removed OKOlab full crib

Dear Michael,

Further to your request, please find following a quotation for a Nikon live cell Ti.

Should any aspect of this quote need modification or you wish to discuss please do not hesitate to contact me.

Thank you for the opportunity to quote.

Yours Sincerely

BEN HEGARTY
SALES MANAGER - NSW

COHERENT SCIENTIFIC
Ben.Hegarty@coherent.com.au
Ph: (02) 9929 3580
Mobile: 0410 106 100

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1989 - 2014 : 25 YEARS

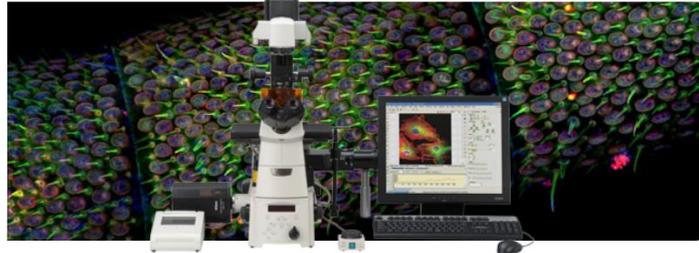
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ECLIPSE Ti-E Inverted Microscope System



Nikon Live Cell Proposal, Dr Michael Carnell, UNSW

- Ti Chassis
- Motorised components
 - X/Y stage
 - Condenser
 - Filter turret
 - Perfect Focus – 6 position objective turret
 - 4 position light path (left 100 / right 100 / eyes 100 / left 80:eyes 20)
 - Ti-LaPPs rear combiner for EPI
- Nikon Objectives
 - 10x Plan Fluor DM (phase): NA 0.30, WD 16mm
 - 20x Plan Achromat Lambda DM (phase): NA 0.75, WD 1.0mm
 - 20x Plan Achromat Lambda DIC: NA 0.75, WD 1.0mm
 - 40x Plan Achromat Lambda DIC: NA 0.95, WD 0.25 – 0.16mm, Cover glass 0.23 – 0.11mm
 - 60x Plan Achromat VC Water Immersion NA 1.20, WD 0.31 – 0.28mm, Cover glass 0.15 – 0.19
- Nikon NIS Elements
 - Advanced Research edition
 - Nikon JOBS advanced experiment planner
 - Nikon General Analysis plugin for pre and post analysis (great interface w/JOBS)
- Semrock triple & quad dichroic sets + EM filters for external filter wheel
 - Triple: blue/green/red
 - Quad: blue/green/red/far red (long pass)
- High speed (55ms) 10 position external filter wheel
- High speed Piezo Z stage
- Lumencor Spectra X flagship solid state light source
 - High speed switching between 7 lines
 - Full software control
- Andor Zyla 4.2+ sCMOS (USB3.0)
 - 82% QE!
 - 4.2mp (2048x2048)
 - 0.9e read noise
 - 53fps @ full frame
 - 33,000:1 dynamic range
- OKOlab Stage-top environmental system
 - Touch screen control w/NIS integration (saves environmental conditions in metadata per frame)
 - Temperature accurate to +/- 0.1%
 - Active humidity (1% increments, 50 – 95% range)
 - Active CO2 (0-10% CO2) (1-18% O2) suitable for hypoxia
- TMC Anti Vibration table
 - 750x900mm CleanBench
- HP Z series operating PC + Monitor

\$226,705.00 Exclusive of GST (List price \$304,079.00 Ex GST)

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System configuration

Nikon components

- 1 MEA53100 Inverted Microscope Eclipse Ti-E Main Body (100-240V)
- 1 MEB55800 TI-T-B Eyepiece Tube Base Unit
- 1 MEH42100 TE-C ELWD PH-1 Module
- 1 MEH42200 TE-C ELWD PH-2 Module
- 1 MEB52510 TI-TERG Ergonomic Eyepiece Tube
- 2 MAK10100 CFI 10X w/diopter adjustment (F.O.V. 22 mm)
- 1 MEC56100 TI-S-ER Motorized Stage with Encoder
- 1 MEF55710 TI-S-CON Motorized Stage Controller
- 1 MEC59110 TI-SH-U Universal Holder
- 1 MEC59120 TI-SH-W Well Plate Holder
- 1 MEP59391 TI-ND6-PFS-S Perfect Focus with Motorized Nosepiece
- 1 MRH10101 CFI Plan Fluor DLL 10X N.A. 0.30, W.D. 16.0 mm, Ph1 (PFS)
- 1 MRD30205 CFI Plan Apo Lambda DM 20X N.A. 0.75, W.D. 1.0 mm (PFS)
- 1 MRD00205 CFI Plan Apochromat Lambda 20X N.A. 0.75, W.D. 1.0 mm (PFS)
- 1 MRD00405 CFI Plan Apochromat Lambda 40X N.A. 0.95, W.D. 0.21 mm (PFS)
- 1 MRD07602 CFI Plan Apochromat VC 60XA WI N.A. 1.20, W.D. 0.29mm (PFS)
- 1 MEE59905 TI-DH Diascopic Illumination Pillar 100W
- 1 MBE75221 D-LH/LC Precentered Lamphouse
- 1 MXA20434 Halogen Lamp 12V-100W LL
- 1 MEF51001 TI-100WRC 100W Lamphouse Remote Cable
- 1 MEF52251 TI-PS100W/A Power Supply 100-240V/A
- 1 MBN11710 Filter 45mm, NCB 11, Daylight Color Balance
- 1 MBN21816 Filter 45mm, ND16 A, Neutral Density
- 1 MEL51910 TI-CT-E Motorized Condenser Turret
- 1 MEL37400 MC-TMD2 ELWD Lens for System Condenser Turret Unit
- 1 MEV51120 TI-FLC-E/HQ Motorized Epi-FL Filter Turret
- 1 MEF55030 TI-HUBC/A HUB Controller A
- 1 MEF51011 TI-AC/A2 AC Adapter for HUBC/A2
- 1 MEF55700 TI-S-EJOY Stage Joystick for Motorized Stage
- 1 MBE96000 NI-SH-E Motorized Shutter
- 1 MBE96100 NI-SH-CON Controller for Motorized Shutter
- 1 MBE96910 NI-SHAD Motorized Shutter Adapter for Dia-Illumination
- 1 MXA22088 Ti Shutter Trigger Cable
- 1 MBE96930 NI-SHCS Motorised shutter cable LONG
- 1 MEF51020 TI-AC/B AC Adaptor for HUBC/B (shutter power supply)
- 1 MQS31000 NIS-Elements AR
- 1 MQS42560 NIS-A 6D
- 1 MQS43110 NIS-A General Analysis (General Analysis Plug-In)
- 1 MQS43130 NIS-A JOBS Editor (JOBS Editor Plug-In)
- 1 MQS41930 NIS-D Wavelength Switcher
- 1 MEE54700 TI-LA-FL EPI FL Module
- 1 MEE54820 TI-LA-MBM Motorized Main Branch
- 1 MEE54930 TI-LA-SB Sub Branch
- 1 MEF55800 TI-LA-CTL Control Box
- 1 MEE58016 TI-LA-SWM Switchable mirror (50:50)
- 1 MQF52055 AC Adapter 2
- 1 MBH76220 D-C DIC Slider 20X
- 1 MBH76264 D-C DIC Slider 60X-IV
- 1 MEH52110 T-C DIC Module LWD N2 Dry
- 1 MBH76240 D-C DIC Slider 40X I
- 1 MQS41220 NIS-D Shutter (Prior filter wheel control)
- 2 MXA22030 C-FL Epi-FL Filter Cube, Blank
- 1 MXK35136 PIEZO INSERT W/USB CONTROLLER *1
- 1 MXA22093 A1-TIP PIEZO STAGE CONTROL CABLE
- 1 MXK35132 PETRI DISH HOLDER 35mm FOR PIEZO STAGE
- 1 MXK35135 Slide holder 1x3 inch for Piezo Stage
- 1 MXK35133 Multi well plate holder for Piezo Stage

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System Configuration

Third Party Components

- 1 V31F Prior ProScan III controller
- 1 HF110 10 position emission filter wheel (55ms between adjacent positions)
- 1 HF255 Emission flange set for Nikon Ti (adaptor)
- 1 ZYLA-4.2P-USB3 Andor Zyla 4.2+ (USB 3.0, 53fps) (2048 x 2048)
- 1 90-10062 Lumencor Spectra X Kit for Nikon Ti (package TBC)
- 1 Semrock triple pass (blue/green/red)
- 1 FF409/493/596-Di01-25x36 Semrock triple band dichroic
- 1 FF01-433/24-25 Semrock bandpass filter
- 1 FF01-525/45-25 Semrock bandpass filter
- 1 FF02-641/75-25 semrock bandpass filter
- 1 Semrock quad pass (Blue/Green/Red/Cy5 LP)
- 1 FF409/493/573/652-Di01-25x36 Semrock quad pass dichroic
- 1 (Use the same EM filters as the triple pass setup, no Cy5 EM filter needed for long pass)
- 1 63-7590S TMC CleanBench 750x900 table
- 1 81-301-90 Front support bar
- 1 81-302-90 Rear support bar
- 1 81-303-01 Arm rest pads
- 1 83-014-01 Rolling casters (set of 4)
- 1 H201-KOEHLER LID low profile lid for koehler alignment
- 1 MW-LOCK-16.5 low profile well plate holder
- 1 MW-LOCK-22.5 standard well plate holder
- 1 1x35-M holder for 35mm dishes
- 1 1xGS-M holder for glass slides
- 1 1x60-M holder for 60mm glass dishes
- 1 OBJ-COLLAR-2532
- 1 H301-T-UNIT-BL-PLUS
- 1 OKO-TOUCH touch screen controller
- 1 OBJ-COLLAR-2532
- 1 CO2-O2 Unit-BL [0-10;1-18] CO2 & oxygen controller for hypoxia
- 1 HM-VF vibration free humidity module
- 1 HM-ACTIVE active humidity controller
- 1 H301-NIKON-NZ100/200/500-N Stage top chamber for Piezo Z
- HP Z Series operating PC & 30" monitor

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Standard Terms & Conditions

REFERENCE: **BHe-Nikon-1375c**

DATE: **27/09/2016**

- Quotation valid for 14 days.
- Warranty: 12 months parts and labour (excludes consumables eg lamps).
- Unit prices do not include GST - GST has been listed as a separate line item.
- All prices are in Australian dollars and are based on an exchange rate of **A\$1.00 = Yen 75, USD 0.72, EUR 0.64, GBP 0.55**
- Orders over \$1000 (GST inclusive) will be subject to 85% exchange rate variation (ERV) if the ANZ carded sell rate on the Wednesday immediately prior to shipment from supplier differs from quoted rate by more than +/- JPY 2.0 or US \$0.02 or EUR 0.02. Orders less than \$1000 will not be subject to ERV.
- ERV will be shown as a separate line item on our invoice. Please note a credit will be applied if ERV is in the buyer's favour.
- Please discuss with your Coherent Scientific Sales Person if you require fixed A\$ pricing.
- For laser microscopy system installations, please nominate an authorised person to attend training and accept the equipment/authorise payment.
- All freight costs and a restocking fee of 25% of the purchase price will be applied to goods returned/cancelled by the customer. Returns/cancellations will be authorised at Coherent's discretion.
- Pricing includes overseas freight, customs clearance, insurance and local delivery in the state capital metropolitan area only. Please request pricing for delivery and installation elsewhere.
- Orders over \$200 placed with payment via Credit Card will attract a surcharge of 3% to the subtotal amount.
- Payment terms are **14 days nett** for orders less than \$90,000, to approved customers.
- All accounts not paid within 14 days of the date of invoice will incur a late payment charge of 2.5% per month or part month. Special discounts offered in this quotation are conditional upon receipt of payments within 14 days
- Payment terms for orders over \$90,000 (GST exclusive) are as follows:
 - 40% due within 14 days of order placement
 - 40% due within 14 days of delivery
 - Balance due (including exchange rate variation) within 14 days of installation
- Any purchase order issued in response to this quotation shall be an acceptance of this offer including all terms and conditions herein.
- Coherent Scientific Pty Ltd shall not be liable for any loss of profit, loss of production, loss of contracts or for any other indirect or consequential loss or damages arising from supply of the quoted goods.
- Risk in goods passes to customer on delivery.
- Title to goods passes to customer only after full payment has been received by Coherent Scientific Pty. Ltd.

September 27, 2016

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