

# Regional Centre for Biotechnology

an institution of education, training & research

(Established by the Dept of Biotechnology, Govt of India under the auspices of UNESCO)  
NCR Biotech Science Cluster, Faridabad, Village-Bhankri, District Faridabad(Haryana)  
TeleFax: 0129-2848813; email: ksingh@rcb.res.in

## SUPPLY ORDER

(Stores to be despatched by CARGO MODE only)

No. RCB/EQ/47/17-18/ATPC (IMP)

26 Dec 2017

**M/s Carl Zeiss Microscopy GmbH.**  
Carl Zeiss-Promenade 10  
07745 Jena

### Through Indian Agent

**M/s Carl Zeiss India (Bangalore) Pvt. Ltd.,**  
3, Bommasandra Jigani Link Road  
Bommasandra Industrial Area Bengaluru  
Karnataka 560099

Dear Sir,

Please dispatch immediately by Sea the following items as per Indian Agent Quotation No 200086940. dated, 15.08.2017 and their letter dated 19.12.2017 against Tender No RCB/ATN/03/17-18/ATPC towards supply of following items, price as mentioned there in to the laboratory of our Institute. We are pleased to place order for supply / installation of the same as per the details and terms & conditions given below:

DESCRIPTION	CAT NO.	QTY
<b>A <u>STRUCTURED ILLUMINATION AND SINGLE MOLECULE LOCALIZATION BASED SUPER-RESOLUTION MICROSCOPE SYSTEM FOR LIVE CELL IMAGING APPLICATION &amp; ACCESSORIES</u></b>		
<b><u>MODEL : ELYRA PS.1 3D PALM</u></b>		
<b>1 <u>INVERTED FLUORESCENCE RESEARCH MICROSCOPE</u></b>		
<b><u>MODEL: AXIO OBSERVER</u></b>		
Axio Observer 7 RP stand for Elyra	409000-9630-000	1
Scanning Stage Piezo 130 x 100	000000-2178-377	1
Joystick XY; CAN	432903-9011-000	1
Stage controller XY PIEZO WSB CAN	432901-9904-000	1
<b><u>Programmable and Computer Controlled Incubation System</u></b>		
Incubator for superresolution microscopy	000000-2018-945	1
Incubator PM S1	411857-9020-000	1
TempModule S1	411860-9010-000	1
Heating Insert P S1	411860-9020-000	1
CO2 Module S1	411857-9010-000	1
CO2-Cover PM S1	411857-9110-000	1
O2 Module S1	411857-9040-000	1
Heating Device Humidity S1	411857-9050-000	1

**Transmitted-light illuminator**

## Reflected-light illumination

Reflector module FL EC ACR P&C	424933-0000-000	1
Filter set 77 HE GFP+mRFP+Alexa 633 shift free €	489077-0000-000	1
Illuminator HXP 120 V	423013-9010-000	1

## Optical equipment

Objective Plan-Apochromat 20x/0.8 M27 (WD=0.55mm), incl. Cover glasses, high performance, D=0.17mm, box with 100 pc.	420650-9901-000	1
Objective ring ACR for objective sleeve conical short	424509-0000-000	1
Objective Plan-Apochromat 40x/0.95 Corr M27 (WD=0.25mm), incl. Cover glasses, high performance, D=0.17mm, box with 100 pc.	420660-9970-000	1
Objective ring ACR for objective sleeve conical long	424510-0000-000	1
Objective Plan-Apochromat 40x/1.3 Oil DIC M27 (WD=0.2mm), (UV)VIS-IR, incl. Immersol 518 F, oiler 20ml and Cover glasses, high performance, D=0.17mm, box with 100 pc.	420762-9800-000	1
Objective ring ACR for objective sleeve conical short	424509-0000-000	1
Objective Plan-Apochromat 63x/1.40 Oil DIC M27 (WD=0.19mm), incl. Immersol 518 F, oiler 20ml and Cover glasses, high performance, D=0.17mm, box with 100 pc.	420782-9900-000	1
Objective ring ACR for objective sleeve cylindrical short	424508-0000-000	1
Objective alpha Plan-Apochromat 100x/1,46 Oil DIC M27	420792-9800-720	1
Objective ring ACR for objective sleeve conical short	424509-0000-000	2

## DIC Attachment

DIC prism II/0.55	000000-1005-867	1
DIC prism III/0.55	000000-1005-868	1
Polarizer D, rotatable with color glass carrier	000000-1121-813	1
Analyzer module DIC ACR P&C shift free	424937-9901-000	1
LD condenser 0.55 H, Ph1, Ph2, Ph3, DIC, DIC; 6 positions, mot.	424244-0000-000	1
DIC slider PA 10x / 20x/0.80 II	426940-0000-000	1
DIC slider PA 40x/0.95 III	426944-0000-000	1
DIC slider PA 40x/1.3 III	426965-0000-000	1
DIC slider PA 63x/100x III	426957-0000-000	1

## Filter set

Reflector turret 6 x mot. ELYRA ACR	424952-9901-000	1
Filter set 3 for superresolution systems	000000-1850-553	1

Filter set 3 for superresolution systems  
 different filter cubes are equipped with band pass and long pass  
 emission filters to be used for broader emission bands. Additional  
 emission filters are available in the slider 000000-1772-065 on the  
 camera adapter.

Filter set 3 consists of adjusted filter cubes with the following major  
 beam splitters and emission filters:

position 3:

MBS 405 + EF BP 420-480 / LP 750  
 (tailored to laser line 405)

position 4:

MBS -488 + EF BP 495-575 / LP 750  
 (tailored to laser line 488)

position 5:

MBS -561 + EF BP 570-650 / LP 750  
 (tailored to laser line 561)

position 6:

MBS -642 + EF LP 655  
 (tailored to laser line 642)

Major dichroic beam splitters are exactly matched to the laser lines.

Laser line 405nm can pass on the excitation site to serve as an  
 activation laser for all filter cubes.

Filter set 3 is the ideal multi-purpose filter set for  
 PALM/dSTORM

and SIM in ELYRA PS.1. It is optimized for low fluorochrome  
 cross-talk and good photon yield.

**Inverted Fluorescence Research Microscope as above**

**1 Set**

**2 Super Resolution System Model ELYRA PS.1 with Laser Lines 405 nm, 488 nm, 561 nm & 640 nm**

Illumination module PALM / SIM	000000-1762-583	1
Extension for main electronics	000000-2085-797	1
Laser module for superresolution microscopy 230 V	000000-1740-222	1
Beam modulation for VIS laser module	000000-1738-858	1
Manual filter slider with 2 positions for Camera Adapter 1x	000000-1772-065	1
TIRF adjustment aid for Camera Adapter 1x with filter slider	000000-1762-998	1
Camera pco.edge sCMOS (version 4.2)	000000-2155-651	1
Liquid cooling system LCS-BU	000000-0545-362	1
Andor EM-CCD camera iXon DU 897	000000-1992-862	1
Camera adapter base port	000000-1992-883	1
Stage attachment Z PIEZO WSB 500	432339-9000-000	1
Controller Z PIEZO WSB 500	432339-9010-000	1
Control wheel Z PIEZO WSB 500	432339-9020-000	1
Cable for stage top frame Z PIEZO with LSM	000000-1356-074	1
Stage insert Z PIEZO WSB 500 Universal	432339-9030-000	1
ZEN 2.3 system Hardware License Key	410135-1003-230	1
ZEN Modul Superresolution Local Microscopy HW Lic	410136-1011-110	1

ZEN Module Superresolution Structured Illumin., HW Lic. Key	410136-1042-110	1
Manual ZEN 2.3 for LSM 710/780/880 / Elyra	000000-2176-038	1
Test sample localization microscopy	000000-0546-859	1
SIM Test sample	000000-0546-858	1
Multispectral beads, low density	000000-2076-515	1
Calibration slide subresolution	000000-1783-456	1

### **Laser modules for ELYRA PS.1 3D-PALM**

405nm laser 50mW	000000-2005-027	1
Fiber and collimator for illumination with 405nm laser light	000000-1762-586	1
488nm laser 100mW	000000-1738-851	1
561nm laser 100mW	000000-1738-862	1
640nm laser 150mW	000000-1871-289	1

**Super Resolution System with Laser Lines 405 nm, 488 nm, 561 nm & 640 nm complete as above** **1 Set**

### **3 3D-PALM**

3D-PALM module	000000-2000-308	1
3D-PALM wedge 1'	000000-2044-785	1
ZEN Module 3D-PALM Hardware License Key	410136-1062-120	1

**3D-PALM as above** **1 Set**

### **4 Control Computer and Monitor**

Workstation Premium for LSM, Elyra and Lightsheet Z.1 Systems (O)	000000-2182-028	1
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Workstation Premium for LSM, Elyra and Lightsheet Z.1 Systems (O)

- HP Z840 Workstation Rev.2
- CPU: 2 x Intel® Xeon® E5-2623v3 4-Core 3.0 GHz
- Memory 64 GB (4x16) DDR4-2133 MHz ECC registered RAM (12 slots free)
- Hard Drives: 20 TB
- Nvidia Quadro K2200 4 GB graphics
- Dual integrated 10/100/1000 LAN interface
- Slim DVD +/- RW recorder for rewriteable media
- Rescue kit: (USB stick 16 GB recovery image)
- Language Package Windows 7 Ultimate Embedded x64 English US
- HP KEYBOARD USB US
- HP USB Laser Scroll Mouse

Real Time Controller Imaging Systems	400100-8630-000	1
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Monitor TFT 32" HP DreamColor Z32x (80 cm) (O)	410350-3200-000	1
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**Control Computer and Monitor as above** **1 Set**

### Offline Analysis Software with workstation

ZEN 2.3 desk Hardware License Key	410135-1004-230	3
Offline workstation from principal company with monitor	000000-2195-723	3
- HP Z840 Workstation Rev.2		
- CPU: Intel® Xeon® E5-2623v3 4-Core 3.0 GHz		
- Memory 16 GB DDR4-2133 MHz ECC registered RAM, 7 slots free for expansion		
- Hard Drives: 2 TB RAID 1 drive and 256 GB SSD		
- Nvidia Quadro K620 2 GB graphics		
- Dual integrated 10/100/1000 LAN interface		
- Slim DVD +/- RW recorder for rewriteable media		
- Rescue kit: (USB stick 16 GB recovery image)		
- Language pack Windows 7 Ultimate Embedded x64 English US		
- HP KEYBOARD USB US		
- HP USB Laser Scroll Mouse		
Monitor TFT 32" HP DreamColor Z32x (80 cm)	410350-3200-000	3
Visible diagonal: 80 cm, 16:9		
Max. resolution: 3840 x 2160 pixel		

**Offline Analysis Software with workstation as above** 1 Set

### 6 System table

System table ELYRA	000000-2079-163	1
Compressor for laboratory tables 230V	000000-0500-916	1
<b>System table as above</b>		<b>1 Set</b>

### 7 OBJECTIVES

Objective C-Apochromat 40x/1.2 W Corr M27 (D=0.14-0.19mm) (WD=0.28mm at D=0.17mm), UV-VIS-IR incl. Immersol W, bottle 20 ml and Cover glasses, high performance, D=0.17mm, box with 100 pc.	421767-9971-000	1
Objective ring ACR for objective sleeve conical long	424510-0000-000	1
<b>Objective C-Apochromat 40x as above</b>		<b>1 Set</b>
Objective C-Apochromat 63x/1.2 W Corr M27	421787-9970-000	1
Objective ring ACR for objective sleeve conical long	424510-0000-000	1
<b>Objective C-Apochromat 63x as above</b>		<b>1 Set</b>

### 8 LSM 880 SPECTRAL CONFOCAL SCAN HEAD WITH 2 MA - PMT + 1 GaAsP INCLUDING LASERS BLD 405 nm, Ar 458/488/514nm, HeNe 543nm, HeNe 594nm & HeNe 633nm with ZEN 2.3 Software

Scan module LSM 880	000000-1994-956	1
Spectral detection 3 channels with one central GaAsP detector	000000-2078-293	1
Basic optics UV/NLO	000000-2014-804	1
Secondary Beam Splitter filter wheel necessary when connecting an external imaging module to the directcoupling port of the scan head	000000-2074-962	1
	000000-2077-352	1

AOTF interface 8 channel needed for Laser 405nm and piezo control	000000-1425-307	1
Main beam splitter wheel VIS equipped for RGB lasers equipped MBS wheel for laser 633, 543, 514, 488, 458 nm	000000-1583-980	1
Electrical Connection Box 400V/230V	000000-2059-642	1

**Laser modules for LSM 880 including laser rack and electronics**

Diode laser 405nm	000000-2031-918	1
Laser Argon-Multiline 458/488/514	000000-2086-081	1
Laser HeNe 543nm	000000-1410-115	1
Laser HeNe 594nm	000000-1410-116	1
Laser Rack LSM 880 incl. 633nm Laser	000000-2085-478	1
Realtime control electronics	000000-2200-460	1

**Transmitted Light Detector**

Transmitted light detector T-PMT for detection of DIC, IR-DIC with laser illumination	000000-2014-999	1
Motorized switching mirror for two illuminators, T-PMT	000000-1269-455	1

**LSM 880 SPECTRAL CONFOCAL SCAN HEAD WITH 2 MA - PMT + 1 GaAsPININCLUDING LASERS BLD 405 nm, Ar 458/488/514nm, HeNe 543nm, HeNe 594nm & HeNe 633nm with ZEN 2.3 Software as above** **1 Set**

The Latest advanced ZEN 2.3 includes the following capabilities

- Complete hardware control of microscope, laser module, laser AOTF, Camera, Image acquisition etc
- Advanced 2D/3D/4D/5D/6D imaging including deconvolution
- Colocalisation analysis with histogram
- Z-stack, multichannel, timelapse imaging
- Spectral imaging with Lambda stack (3nm resolution)
- Spectral unmixing with emission finger printing to eliminate bleed-through
- Multipoint / tile scan /mosaix in combination with X-Y motorized stage
- Focus drift compensation through autofocus function based on HeNe 633 nm laser
- Photoactivation/conversion with real ROI or multiple ROI's up to 99 in a single field
- Online calculation & display of ratio images
- Free ROI scanning in Z volume

**9 Axio Observer.7 for LSM 880**

Axio Observer 7 SP stand for LSM 880	409000-9600-000	1
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Axio Observer 7 with motorized focus drive (min. step width 10 nm),6-position objective nosepiece, H DIC M27 mot. ACR, path deflection to the tube, motorized 3-position optovar turret, TFT touchscreen, Z-drive operation flat left, circular operation key unit right and left, additional keys for switching TL/RL illumination, light- and contrast manager, binocular tube 45°/23, tube lens LSM, 2x eyepiece PL 10x/23 Br. foc. with eyepiece eyecups, tiltable carrier for transmitted-light illumination, equipped with luminous-field diaphragm, 3-position filter changer and Interface for motorized condenser incl. Shutter, motorized 6x reflector module with ACR, side port LSM left, camera port 60N 100 right, dust protection cover, interfaces 4x CAN, RS 232, USB and TCP/IP, trigger socket (In/Out) for shutter, connecting socket for external

## Motorized XY-scanning stage for tile, mosaic, faster imaging in Z in Confocal and high resolution mode

Scanning Stage 130x100 STEP Set for LSM 409000-9420-000 1

consists of:

- Scanning Stage 130x100 STEP with stepper motor (2 mm spindle pitch) incl. Stepper controller SMC 2009, Joystick XY, fixed motor cable with exit on stage left back side and universal mounting frame K (160 mm x 110 mm), also suitable for Z-Piezo
- travel range: 130 mm x 100 mm (adjustable)
- max. speed: 25 mm/s
- resolution: 0.1 µm
- reproducibility: +/- 1 µm
- absolute accuracy: +/- 5 µm
- stage surface: 325 mm x 144 mm
- compatible with objectives autocorr

### Halogen illuminator for transmitted light

HAL 100 illuminator with quartz collector 423000-9901-000 1

Bulb 12V 100W Halogen Rectangular Filament 380059-1660-000 2

### Epi-fluorescence equipment

Reflected, fluorescence illumination for LSM 409000-9300-000 1

Reflector module FL EC ACR P&C 424933-0000-000 3

Filter set 49 DAPI shift free 488049-9901-000 1

Filter set 38 Endow GFP shift free 000000-1031-346 1

Filter set 43 Cy 3, d=25 shift free 000000-1114-101 1

Antiglare screen LSM for Axio Observer 000000-1327-824 1

### Metal Halide Illumination

Illuminator HXP 120 V 423013-9010-000 1

inclusive built in power supply, lamp module and infrared filter.  
Fluorescence light source with motorized brightness switch and integrated motorized shutter, that works stepper motor controlled, fast and vibration free. With CAN connection for switching the shutter and the motorized brightness switch via ZEN (blue edition) and ZEN 2 (black edition).

Interfaces:

- 1x CAN (CAN-HD15)
- 1x Trigger in (BNC)
- 1x Trigger out (BNC)
- 1x EXT (BNC) for remote control unit

The package includes light guide, cable BNC and cable CAN.

Illumination adapter for light sources with light guide 423302-0000-000 1

### Objectives

Objective "Plan-Apochromat" 10x/0.45 M27 (WD=2.1mm) 420640-9900-000 1

Objective Plan-Apochromat 63x/1.4 Oil DIC M27 (WD=0.19mm), incl. Immersol 518 F for 30 °C, oiler 20ml and Cover glasses, high performance, D=0.17mm, box with 100 pc. 420782-9900-000 1

### DIC Attachment

DIC prism II/0.55 000000-1005-867 1

DIC prism III/0.55 000000-1005-868 1

Polarizer D, rotatable with color glass carrier 000000-1121-813 1

### Anti-Vibration Table

System table, mid size, air damped, level regulated pressured air supply necessary, long side open , with breadboard,1200x900mm	000000-2147-376	1
Compressor for laboratory tables 230V	000000-0500-916	1

**Axio Observer 7 with Objectives and DIC Attachmentm, Anti-Vibration  
table as above** 1 Set

### 10 High Resolution Digital Microscopy Camera: AxioCam 503 mono

Camera Adapter 60N- C 1" 1.0x	426114-0000-000	1
<b>Microscopy Camera Axiocam 503 mono (D)</b>	426559-0000-000	1

High Performance microscopy camera incl. driver software, USB 3.0 PCIe x1 interface, dual USB 3.0/USB 2.0 cable  
3 m and BK7 protection glass (coated)

Number of Pixels: 1936 (H) x 1460 (V) = 2.8 Mega Pixels; Pixel size: 4.54  $\mu\text{m}$  x 4.54  $\mu\text{m}$ ; Chip size: 8.8 mm x 6.6  
mm, equivalent to 2/3" (11 mm diagonal)

Spectral range: With protection glass app. 400 nm to 1000 nm

Max. Full Well Capacity: Approx. 15.000 e

Selectable Resolution:

H	x	V	Binning Factor
1936	x	1460	1x1 Basic Resolution
968	x	728	2x2
640	x	484	3x3
480	x	364	4x4
384	x	292	5x5

Live frame rates (depending on hardware and software configuration):

Exp. Time 10ms, color enhancement off, 39 Mhz pixel clock, Quadport Readout

H	x	V	Binning Factor	Frame Rate,
1936	x	1460	1	38
968	x	728	2	61
640	x	484	3	76

Frame rates for time series recording Continuous Mode with 39 Mhz pixel clock and  
QuadPort Readout (depending on computer hardware and software configuration)

H	x	V	Binning Factor	Frame Rate
1936	x	1460	1	38
968	x	728	2	61
640	x	484	3	76
480	x	364	4	87
384	x	292	5	93

**High Resolution Digital Microscopy Camera: AxioCam 503 Mono with  
adapter as above** 1 Set

### 11 Control Computer and Monitor

Workstation for LSM Systems	000000-2181-975	1
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- HP Z840 Workstation Rev.2
- CPU: Intel® Xeon®
- Memory 16 GB DDR4-2133 MHz ECC registered RAM,  
7 slots free for expansion
- Hard Drives: 3 TB RAID 1 drive and 256 GB SSD
- Nvidia Quadro K620 2 GB graphics
- Dual integrated 10/100/1000 LAN interface
- Slim DVD +/- RW recorder for rewriteable media
- Rescue kit: (USB stick 16 GB recovery image)
- Language pack Windows 7 Ultimate Embedded x64 English US
- HP KEYBOARD USB US
- HP USB Laser Scroll Mouse



Memory 32 GB (2x16) DDR4-2133 MHz ECC registered RAM consisting of 2 x 16 GB modules	410303-3203-000	1	
Monitor TFT 32" HP DreamColor Z32x (80 cm) (O) Visible diagonal: 80 cm, 16:9 Max. resolution: 3840 x 2160 pixel Horizontal frequency: 24-135 kHz	410350-3200-000	1	
<b>Control Computer and Monitor as above</b>		<b>1 Set</b>	
<b>TOTAL COMPLETE AS ABOVE, C.I.P. NEW DELHI AIRPORT</b>		<b>1 Set</b>	<b>EUR 4,46,580.00</b>

**CIP New Delhi      EUR 4,46,580.00**  
**(US Euro four lakh forty six thousand five hundred eighty only )**

**Locally supplied items (Free of Cost)**

**Online UPS qty-01 each (3 KVA and 10 KVA ) with 30 min battery back-up for the complete system**

**Warranty:** 5 years from the date of successful installation..

**Post Warranty CMC charges 2.5%** of the order value after expiry of 5 years warranty period from 6<sup>th</sup> to 10<sup>th</sup> years and AMC charges will be 1% of the order value.

M/s. Carl Zeiss India (Bangalore) Pvt. Ltd. will provide a competent operator for the complete system for a period of 3 years.

**Payment terms: 100% by Wire Transfer after successful installation and submission of 10% PBG for 63 months (3 months beyond the warranty period).**

**Delivery Period:** Within 20 weeks from the date of issue of supply order. However, shipment should be effected only after clear written confirmation from the RCB about the readiness of the site. Shipment is to be made directly to our Institute and copy of invoice and AWB should be sent along with the shipment to Executive Director, Regional Centre for Biotechnology NCR Biotech Science Cluster, Faridabad, District Faridabad (Haryana) 121001

**Indicate following instruction on the Air way Bill:-**

1. Please inform consignee well in advance 5 days prior to shipment, alongwith all connected documents (Invoice, packing list, Air way Bill etc.) on email [ksingh@rcb.res.in](mailto:ksingh@rcb.res.in) and [mohan\\_gandhi@rcb.res.in](mailto:mohan_gandhi@rcb.res.in).

**Please Note:** The supplier is requested to provide all relevant documents/pre-alert shipping documents, 5 days in advance, before arrival of shipment at port so that our appointed CHA take necessary action well in time, otherwise, the supplier and Indian agent of the firm will be held responsible and all the additional charges imposed upon the Importer as levied by the customs as per their latest Notification No.26/2017-Customs(N.T.) dated 31 March 2017 shall be recovered from the supplier/their Indian agent

2. Please arrange to install the equipment immediately on arrival and submit the installation report to Purchase office. Ensure Air Ways Bill details must be informed to us Fax +91-129-2848813 or through email [ksingh@rcb.res.in](mailto:ksingh@rcb.res.in), at least 5 days before arrival of shipment at New Delhi. The Phone no and Fax no: to be mentioned on AWB. **Acknowledge the order.** Please feel free to contact via email: [mohan\\_gandhi@rcb.res.in](mailto:mohan_gandhi@rcb.res.in) in case of query.

3. In addition to the above all terms and conditions as per Tender No RCB/ATN/03/17-18/ATPC shall govern and be binding on the supplier

Yours Sincerely,

(V.M.S. Gandhi)

Administrative Officer

Note : the supply order is subject to standard terms and conditions of RCB as per Annexure I.

(a) Supplier Copy

(b) Inventory Section

(c) Concern User/Department(0313 )

(d) Office Copy