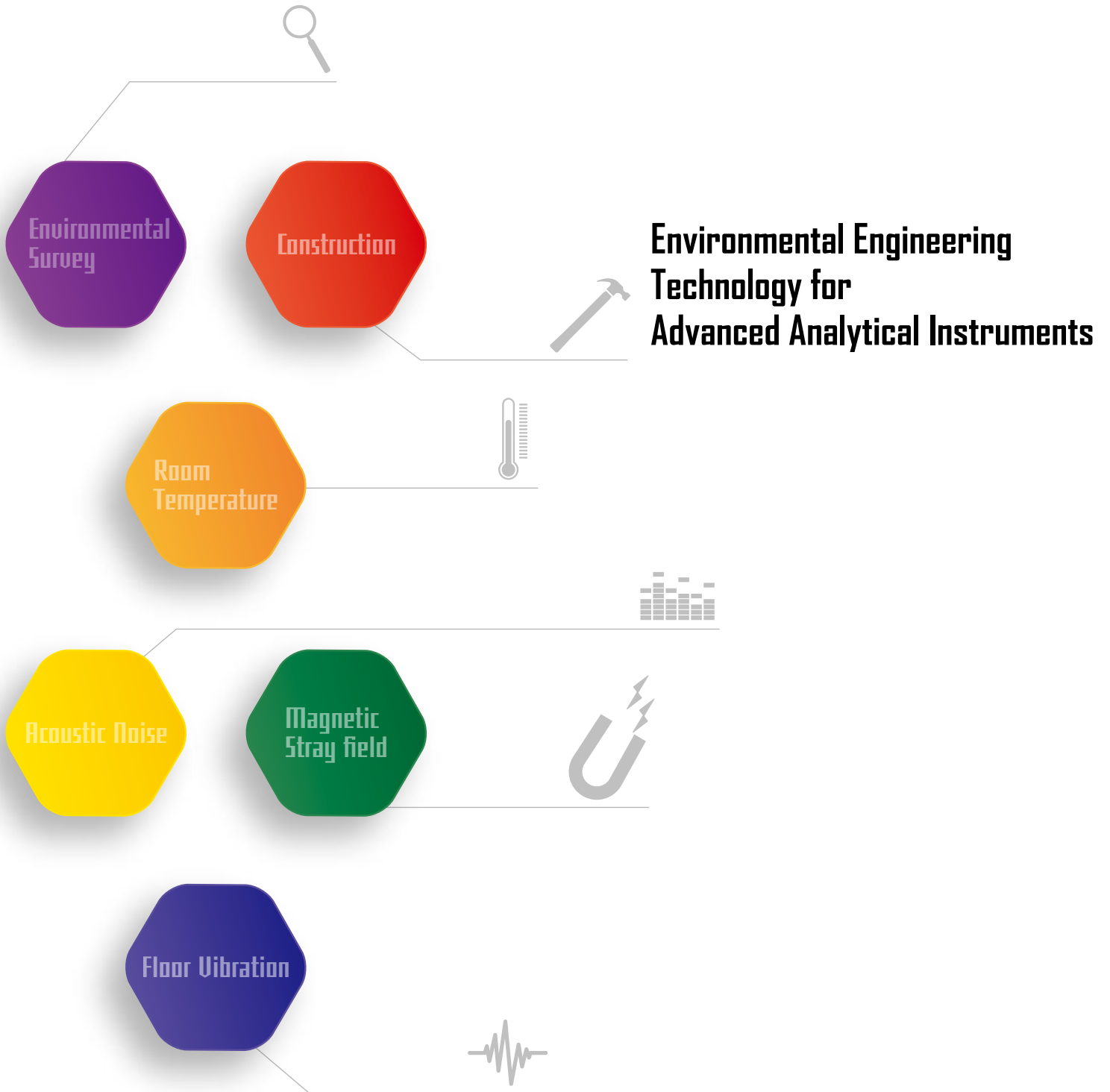


Solutions for Innovation



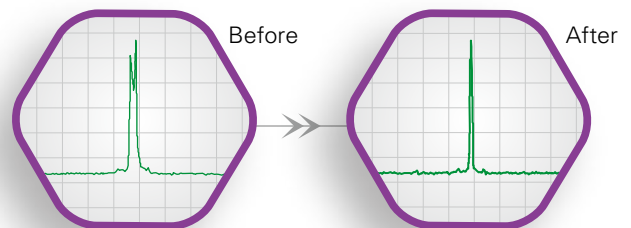
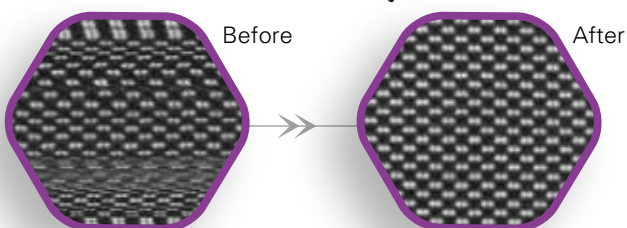
Various environmental disturbances exist around the instrument, which cause influence on the instrument's performance.



## Environment is another important aspect for your instrument's performance

The necessity of environmental countermeasure is increasing as the performance of analytical instruments are making progress day by day.

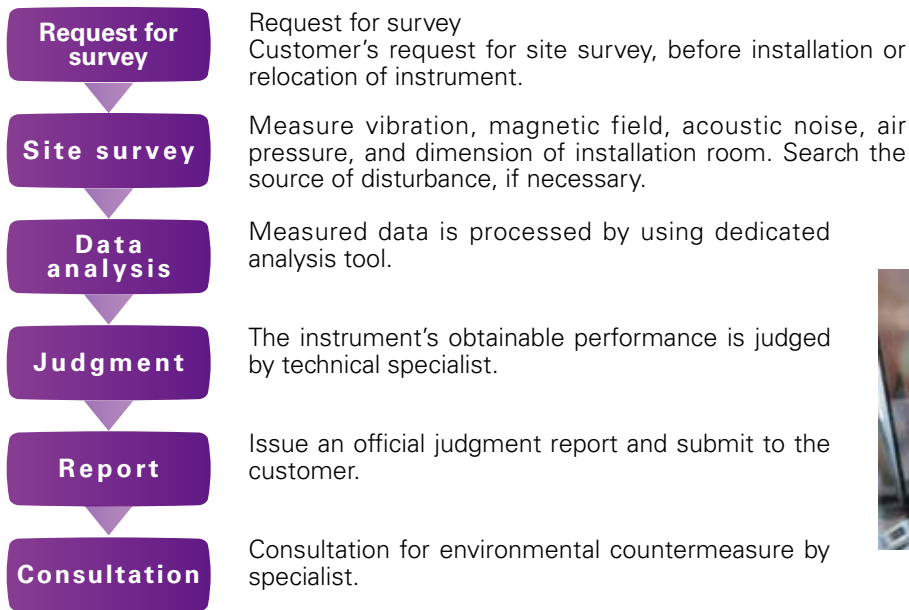
JEOL provides a unique and truly effective environmental countermeasure solution as an indispensable counterpart of the instrument, aiming for total satisfaction of our customers.



## Environmental survey

The whole story of environmental countermeasure starts from accurate site measurement, using precise measurement tools which fulfill the requirement of instrument. JEOL develops unique countermeasure technology associated with the instrument, and the obtained data or know-how are beneficially used to adopt reliable judgment results. Also the judgment report is issued with needs and recommendation of countermeasure, leading to execution of satisfactory environmental countermeasure.

### Environmental survey process



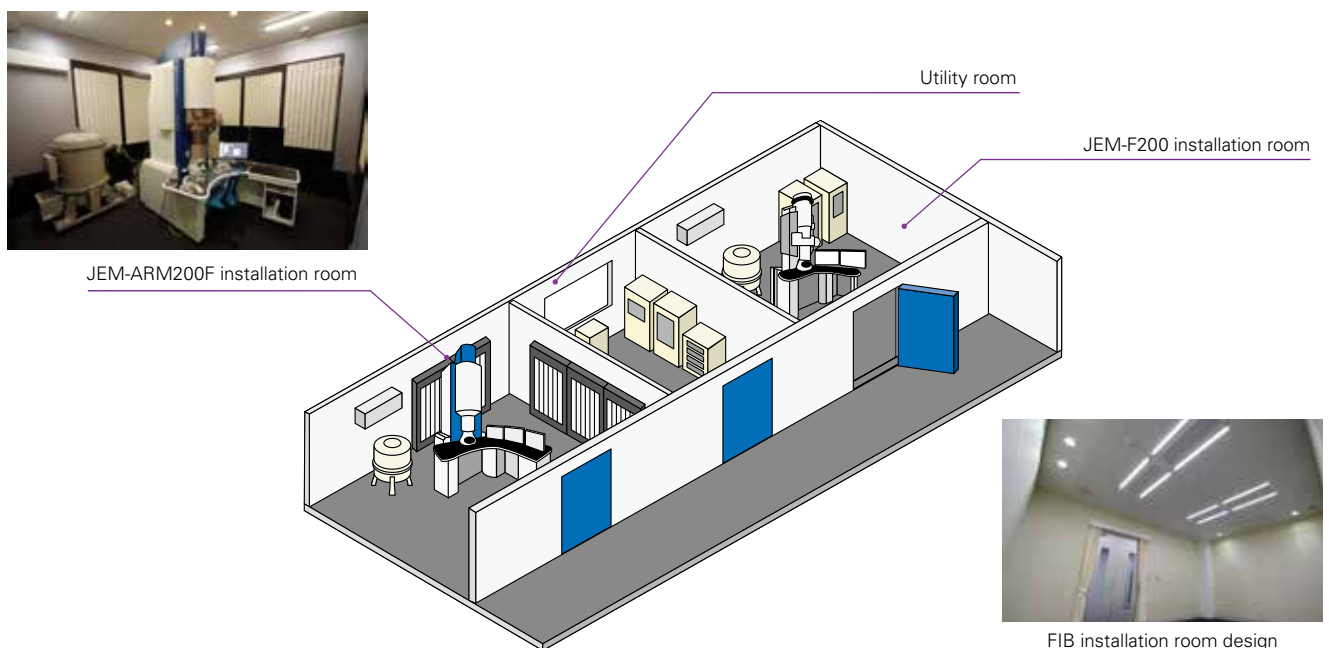
### Survey items

- Vibration
- Magnetic field
- Acoustic noise
- Air pressure change etc.



## Lab design consulting

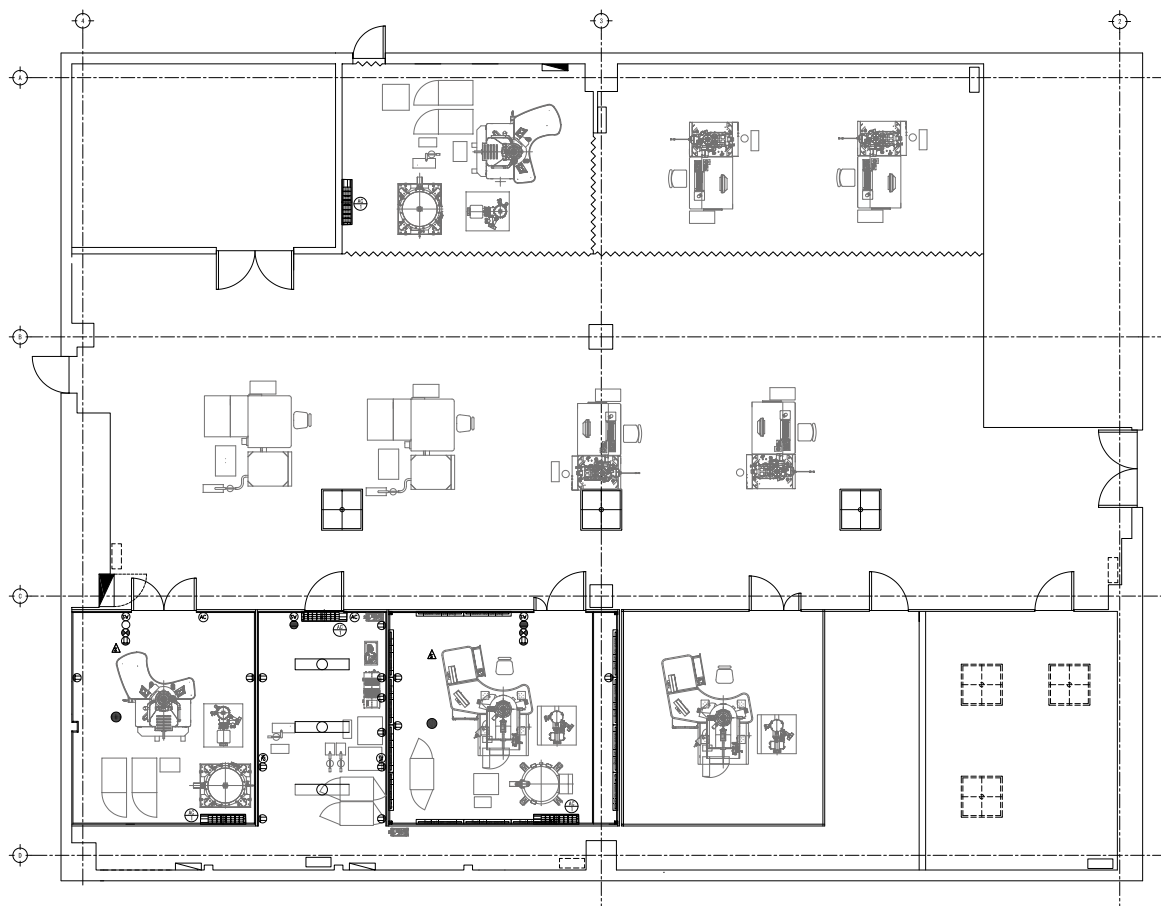
Not only optimum environment for instruments, but JEOL also aims to build up safe and comfortable environment for human. JEOL suggests Total Lab Solution including instrument layout plan to visual design. Please consult us if you are planning construction, renovation of Lab or relocation of instruments.





## Room construction

JEOL focuses on designing and constructing installation rooms not only satisfying instrument's requirements but considering work efficiency, safety and attractive design. As an instrument manufacturer, we incorporate helpful advice and tips provided from technical, service and application division and actualize a convenient and comfortable installation room.



Example of installation room layout plan

### Carpentry and interior finish

- Interior finish
- Fittings
- Floor modification

### Electrical and plumbing

- Electrical works
- Air conditioning
- Plumbing
- Instrumentation works

### Special facilities

- Clean rooms
- Chemical hazard rooms
- Shielded rooms
- Temperature and humidity control

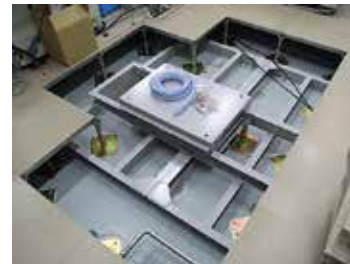
## Example of room construction



Partition wall construction



Floor renovation



Floor reinforcement



Clean room



Magnetic Shield Chamber  
This Shield Chamber is manufactured by OHTAMA Co.,Ltd

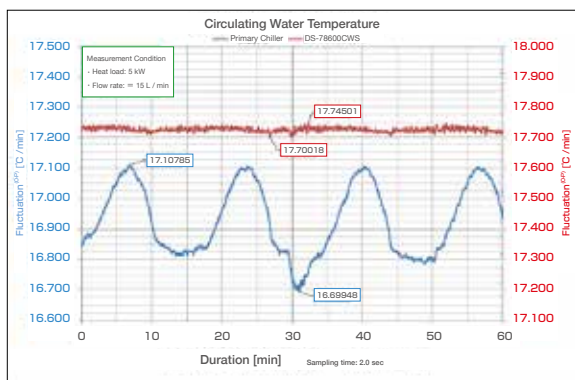


Temperature and humidity control

## Cooling water temperature control

Circulating Water Stabilizing System DS-78600CWS actualize high precision circulating water temperature control by attaching to a primary water chiller circuit. The advantage of this system appears in case such as analysis requiring long-term water temperature stability or on observation at ultra-high resolution.

Example of water temperature fluctuation  
(Installed to JEM-ARM300F2)



DS-78600CWS Temperature Stabilizing Box



## Room temperature control

The state-of-the-art air conditioning system “Hydro Radiant Cooling System”, uniquely developed for High-End electron microscopes, realizes “room temperature fluctuation below  $\pm 0.05\text{ }^{\circ}\text{C}$  with no air flow” which is a difficult target for conventional air conditioning system. It is possible to retrofit this system to existing room, so please consult us in case of room renovation.



Installation example of water-cooled radiant panel system



Water-cooled radiant panels



## Acoustic noise countermeasure

A truly effective acoustic noise countermeasure becomes possible by not only one treatment but as a combination of multiple countermeasures. JEOL executes noise frequency analysis and noise reduction simulation beforehand, then we plan to adopt multiple treatments such as noise insulation / absorption, low noise air conditioning, soundproof doors and so on in order to realize optimum countermeasure.



Acoustic absorption panel for TEM room



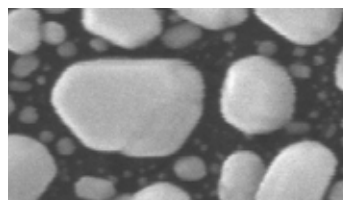
Example of glass wool acoustic absorption panel

## Vibration countermeasure

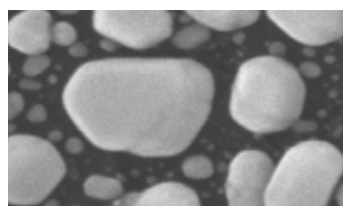
JEOL provides wide lineup of integrated type active isolation system which features high vibration attenuation and reliability. As it does not affect the operability of instrument, it is highly acclaimed by our customers. Also we have a lineup of platform type active isolation system, which is versatile and applicable to many instruments. These systems are jointly produced with specialist company and the obtained experimental data are applied to our judgment method to ensure precise vibration judgment.



Built-in type active isolation system



Before countermeasure



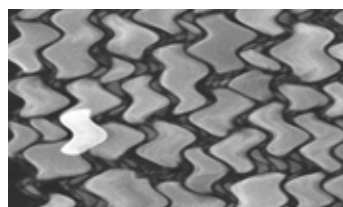
After countermeasure

## Magnetic field countermeasure

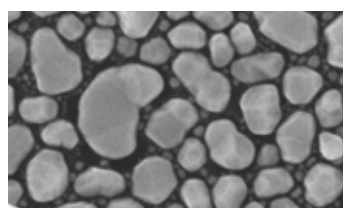
JEOL has exclusively developed active magnetic field cancellation system suitable for analytical instruments such as electron microscopes, NMR and EB systems. It features extremely low noise electrical circuit design in order to assure high image quality and resolution. Also its expandability enables upgrade of performance by adding extra controller or sensor if required.



Example of canceller cage



Before countermeasure



After countermeasure

▼ Local office



\*Specifications and appearance are subject to change without notice.

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**ARGENTINA**  
COASIN S.A.C.I.F.  
Virrey del Pino 4071,  
C1430CAM-Buenos Aires  
Argentina  
Tel. 54-11-4552-3185  
Fax. 54-11-4555-3321

**AUSTRALIA & NEW ZEALAND**  
JEOL (AUSTRALASIA) Pty.Ltd.  
Suite 1, Level 2, 18 Aquatic Drive  
Frenchs Forest NSW 2086  
Australia  
Tel. 61-2-9451-3855  
Fax. 61-2-9451-3822

**AUSTRIA**  
JEOL (GERMANY) GmbH  
Gute Aenger 30  
85356 Freising, Germany  
Tel. 49-8161-9845-0  
Fax. 49-8161-9845-100

**BANGLADESH**  
A.C. CHOWDHURY SCIENCE & SYNERGY PVT. LTD.  
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Baridhara, Dhaka1212  
Bangladesh  
Tel. 880-2-2-2226-2272  
Fax. 880-2-2-2226-4428

**BELGIUM**  
JEOL (EUROPE) B.V.  
Planet II, Gebouw B  
Leuvensesteenweg 542,  
B-1930 Zaventem  
Belgium  
Tel. 32-2-720-0560  
Fax. 32-2-720-6134

**BRAZIL**  
JEOL Brasil Instrumentos Cientificos Ltda.  
Av. Jabaquara, 2958 5º andar conjunto 52  
04046-500 Sao Paulo, SP  
Brazil  
Tel. 55-11-5070-4000  
Fax. 55-11-5070-4010

**CANADA**  
JEOL CANADA, INC.  
3275 1ere Rue, Local #8  
St-Hubert, QC J3Y-8Y6, Canada  
Tel. 1-450-766-1835  
Fax. 1-450-766-1897

**CHINA**  
JEOL (BEIJING) CO., LTD.  
Zhongkeziyuan Building South Tower 2F,  
Zhongguancun Nanshanje Street No. 6,  
Haidian District, Beijing 100190, P.R.China  
Tel. 86-10-6804-6332/6322/6323  
Fax. 86-10-6804-6324

JEOL (BEIJING) CO., LTD., SHANGHAI BRANCH  
2F-8C Room, Building A, Mingji Business Plaza,  
No.207 Songhong Road, Changning District,  
Shanghai 200335, P.R.China  
Tel. 86-21-6248-4487  
Tel. 86-21-6306-4330  
Fax. 86-21-5836-3668

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Rm.3501, OnshikCenter, 230 Tianhe Road, Tianhe District,  
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JEOL LTD. (BEIJING) CO., LTD., CHENGDU BRANCH  
1807A Zongfu Building,  
NO. 35 Zhongfu Road, Chengdu, Sichuan, 610016  
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Fax. 86-28-8662-2544

**EGYPT**  
JEOL SERVICE BUREAU  
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Dokki, (Cairo), Egypt  
Tel. 20-2-3335-7220  
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**FRANCE**  
JEOL (EUROPE) SAS  
Espace Claude Monet, 1 Allée de Giverny  
78290, Croissy-sur-Seine, France  
Tel. 33-13015-3737  
Fax. 33-13015-3717

**GERMANY**  
JEOL (GERMANY) GmbH  
Gute Aenger 30  
85356 Freising, Germany  
Tel. 49-8161-9845-0  
Fax. 49-8161-9845-100

**UNITED KINGDOM (UK)**  
JEOL(U.K.)LTD.  
Silver Court, Watchmead,  
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Tel. 44-1707-37-7117  
Tel. 44-1707-37-3254

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Tel. 34-91-663-0545

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99/9 Moo 2, Maha Sawat, Pathumthorinthon, Nakhon Pathom. 73170  
Thailand  
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Fax. 66-3424-6250

JEOL ASIA(THAILAND)CO., LTD.  
118 BLOCK 28X Building, 4th Floor, Room No.X401, Soi Chula 5,  
Wangmai sub-district, Phatumwan district, Bangkok 10330  
Thailand  
Tel. 66-2121-7424

**THE NETHERLANDS**  
JEOL (EUROPE) B.V.  
Lirweg 4, NL-2153 PH Nieuw-Vennep,  
The Netherlands  
Tel. 31-252-623-500  
Fax. 31-252-623-501

**TURKEY**  
KARFO Endüstriyel  
Yüksan Dudağıllı, Karfo Plaza, Şerifali Mah, Beyan Sokakı No:23,  
34776 Istanbul, Turkey  
Tel. 90-216-660-0315

META Analitik  
Atatürk Mah, Meriç Cad, Turkuaz Plaza No:5/38 Ataşehir,  
34758 Istanbul, Turkey  
Tel. 90-216-580-8020

**UNITED STATES OF AMERICA (USA)**  
JEOL USA, INC.  
11 Dearborn Road, Peabody, MA 01960, USA  
Tel. 1-978-535-6900  
Tel. 1-978-536-2205/2206

JEOL USA, INC. WEST OFFICE  
5653 Stoneridge Drive Suite #110  
Pleasanton, CA 94588, USA  
Tel. 1-925-737-1740  
Fax. 1-925-737-1749

**VENEZUELA**  
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Urbanizacion Montaban III  
Residencias Don Andres - Piso 7 - Apartamento 74  
Avenida 3, entre calles 7 y 6  
Montaban, Caracas, Venezuela  
Tel. 58-212-443-4342  
Fax. 58-212-443-4342

**VIETNAM**  
T&N Trading and Investment Company Limited  
19 Hang Thiec, Hoan Kiem Ward,  
Hanoi, Vietnam  
Tel. 84-94343-1990/Ho Chi Minh (HCM) 84-90565-3866