

FOURNISSEURS d'EQUIPEMENT de VERIFICATION

SUPPLIERS of VERIFICATION EQUIPMENT

Mars 1987

FOURNISSEURS d'EQUIPEMENT de VERIFICATION

Important : Cette brochure n'est pas un document officiel et sa distribution est en principe restreinte aux services de métrologie nationaux.

Le BIML ne peut recommander spécialement aucun des fournisseurs indiqués et se décharge de toute responsabilité en ce qui concerne les fournitures éventuelles.

Les adresses ne sont pas indiquées selon un ordre de préférence mais suivent en général l'ordre alphabétique des noms français des pays.

SUPPLIERS of VERIFICATION EQUIPEMENT

Important : This brochure is not an official document and its distribution is generally limited to national metrology services.

The BIML does not specially recommend any of the suppliers indicated nor endorse any responsibility related to deliveries.

The addresses for each group are not indicated in any order or preference but follow in most cases the alphabetical order of the French name of countries.

Liste de fournisseurs éventuels

d'équipements de vérification pour services de métrologie

Les services nationaux de métrologie font souvent leurs achats en soumettant aux fabricants des spécifications similaires à celles suggérées dans la brochure du BIML : "Equipement d'un Service National de Métrologie". Il s'avère cependant souvent difficile de trouver les adresses des fabricants les mieux placés pour répondre à ces appels d'offres. Une consultation très large en utilisant des adresses relevées dans divers répertoires de constructeurs, guides d'exportation, etc. peut être coûteuse en correspondance et peut ne pas atteindre de petites maisons ou ateliers spécialisés ou encore se perdre dans de grandes compagnies où un département peut ne pas être au courant d'une petite production spécialisée d'un autre département.

Comme le BIML reçoit fréquemment des demandes dans ce domaine, nous avons pris la liberté de composer une liste de fournisseurs qui dans le passé ont livré du matériel spécialisé de métrologie. Nous espérons que nos pays membres sont en mesure de compléter et mettre à jour l'information.

Des fournisseurs d'instruments d'usage courant ne figurent en général pas dans la liste. Nous avons cependant, à la fin, indiqué quelques adresses d'organisations ou éditeurs qui peuvent fournir des répertoires généraux de fabricants d'instruments de mesure.

Afin de faciliter l'impression, le texte français est restreint aux têtes de chapitres.

Table des matières

	<u>Page</u>
1. Poids	3
2. Balances d'étalonnage	5
3. Balances de vérification	6
4. Etalons de capacité de liquides	8
5. Equipement pour la vérification de longueurs et dimensions	13
6. Equipement pour l'étalonnage d'aréomètres	21
7. Equipement pour l'étalonnage d'hygromètres	22
8. Equipement pour l'étalonnage de forces	23
9. Equipement pour l'étalonnage de pressions	24
10. Equipement pour l'étalonnage de thermomètres	27
11. Equipement d'étalonnage en électricité	34
12. Equipement d'étalonnage en photométrie	41
13. Etalonnage de dureté	46
14. Vérification d'instruments de mesure pour véhicules	47
15. Dosimétrie de radiations	47
16. Temps et fréquence	48
17. Equipement pour la vérification des produits préemballés	48
18. Poinçons de vérification et outillage de plombage	49
19. Sociétés d'exportation de matériel de vérification	50
20. Répertoire de fabricants d'instruments de mesure	51
Annexe : Fournisseurs de poids en fonte	55

List of possible suppliers of
verification equipment for metrology services

Most governmental metrology services usually make procurements by submitting to manufacturers specifications similar to those suggested in the brochure "Verification equipment for National Metrology Services". It is, however frequently found difficult to find addresses to those manufacturers likely to supply quotations on such submissions. A very wide consultation using listings found in various buyer's guides, export directories etc may be too costful in correspondence and may in addition not reach small specialized firms or workshops or sometimes get derouted in big companies where one branch may not be aware of a specialized small production of another branch.

As the BIML frequently receives requests in this matter we have taken the liberty of listing below some of the suppliers which have in the past been reported to supply such specialized equipment. We expect that our country members will be able to complete and update the information.

Commonly used measuring instruments have generally not been included, we have however at the end of the lists given a few addresses to editors or organisations which may supply general directories of measuring instruments.

C o n t e n t s

	<u>Page</u>
1. Weights	3
2. High-sensitivity calibration balances	5
3. Verification balances	6
4. Reference and verification standards of liquid capacity	8
5. Dimensional (length) measuring equipment	13
6. Hydrometer calibration equipment	21
7. Humidity calibration equipment	22
8. Force calibration equipment	23
9. Pressure calibration equipment	24
10. Temperature calibration equipment	27
11. Electrical calibration equipment	34
12. Photometry calibration equipment	41
13. Hardness calibration	46
14. Verification of instruments for vehicles	47
15. Radiation dosimetry	47
16. Time and frequency	48
17. Control of prepackages	48
18. Verification stamps, punches, marking and sealing tools	49
19. Export firms able to quote for supplies of verification	50
20. Directories of measuring instruments	51
Annex : Suppliers of cast iron weights	55

1. POIDS

WEIGHTS

1.1. Poids étalons (classe E₂ et F₁)

Reference standards of mass and analytical weights of stainless steel
(class E₂ and F₁)

Kern and Sohn
D-7470 ALBSTADT
Ebingen
Postfach 48
F.R. of Germany

Adolf Häfner
Hohenhardtsweiler Str. 2
D-7163 OBERROT
F.R. of Germany

Gottl. Haigis GmbH
Postfach 116
D-7470 ALBSTADT 3
F.R. of Germany

Anciens Ets H.L. Becker S.A.
Rue Masui Straat 220
B-1000 BRUXELLES
Belgium

Zavod za avtomatichni vezni (ZAV)
LIASKOVETZ-5140
Bulgaria

Ernest Pfeifle (Balances and weights)
64, Forest Park Crescent
THORNHILL, Ontario
Canada L3T 2M7

Prolabo
12 rue Pelée, BP 200
75526 PARIS Cedex 11
France

Ets Brouillaud
8 Impasse de la Baleine
75011 PARIS
France

Eegema
Slotsedijk 190
3195 NG PERNIS
Holland

Shimadzu Corporation
1, Nishinokyo-Kuwabara-cho
Nakagyo-ku
KYOTO
Japan

Chyo Balance Corporation
376-2 Tsukiyama-cho
Kuze
Minami-ku
KYOTO
Japan

Mettler AG
CH-8606 GREIFENSEE
Switzerland

Institut Métrologique Tchecoslovaque
Tr. L. Novomeského IV/487
842 55 BRATISLAVA
Czechoslovakia

Oertling Ltd
Cray Valley Road
St Mary Cray
ORPINGTON, Kent
United Kingdom

Troemner Inc.
6825 Greenway Avenue
PHILADELPHIA, Pa 19142
U.S.A.

Tehtnica-Zelezniki
64228 ZELEZNIKI
na Plavsu 79
Yugoslavia

1.2. Poids de vérification classe F₂ et M₁

(mêmes fournisseurs que pour 1.1. plus les suivants)

Verification standards of mass and special test weights in stainless steel, brass or bronze (class F₂ and M₁)

Same suppliers as for reference standards 1.1, plus

N.G. Brown and Associates Pty Ltd
7 Albert Street
RICHMOND, Vic. 3121
Australia

Anciens Ets Vial
4 bis rue Asseline
75014 PARIS
France

Zwiebel
St Jean Saverne
67700 SAVERNE
France

India Government Mint
Fort
BOMBAY 400023
India

Taisho Balance Mfg. Co., Ltd.
2-4219, Takasai, Shimosuma
IBARAKI
Japan

Institutul National de Metrologie
Sos. Vitan Bîrzesti nr. 11
75669 BUCAREST 5
Romania

Reverifications Ltd
Stocklake
AYLESBURY, Bucks
United Kingdom

Toledo Scale
P.O. Box 1705
COLUMBUS, Ohio 43216
U.S.A.

Tehtnica-Zelezniki
64228 ZELEZNIKI
na Plavsu 79
Yugoslavia

1.3. Poids en fonte : fabrication locale ou selon liste Annexe

Cast iron parallelepipedic weights of 10 and 20 kg corresponding to OIML Recommendation No.2 (class M₂)

Such weights if needed in big quantities should preferably be manufactured locally. If this is not possible it is advisable to contact the metrology service in a conveniently located country of supply. When such weights are used for verification purposes they should be made so as to be easily adjustable.

A few suppliers in some countries are listed in the annex to this list.

1.4. Masses de vérification : fabrication locale ou selon liste Annexe

Heavy weights 500 and 1000 kg

The same comments as for 1.3.

2. BALANCES D'ETALONNAGE

HIGH-SENSITIVITY CALIBRATION BALANCES used for the comparison of mass standards

2.1. Weighing capacity 1000 kg

Carl Schenck GmbH
Landwehrstrasse 55
D-6100 DARMSTADT
F.R. of Germany

International Steel
2880, Diab
Ville St-Laurent, QUEBEC
Canada H4S 1M7

Ets Vial
4 bis rue Asseline
75014 PARIS
France

Robichon
4 rue Hector Blanchet
38500 VOIRON
France

Chyo Balance Corporation
376-2 Tsukiyama-cho
Kuze
Minami-ku
KYOTO
Japan

Wirth Gallo & Co
Sonnenbergstrasse 55
CH-8032 ZÜRICH
Switzerland

Oertling Ltd (Avery)
Cray Valley Works
St Mary Cray
ORPINGTON, Kent BR5 2HA
United Kingdom

Troemner Inc.
6825 Greenway Avenue
PHILADELPHIA, Pa 19142
U.S.A.

Frazier Precision Instrument Co.
210 Oakmont Ave.
GAITHERSBURG, MD 20760
U.S.A.

Voland Corporation
5 Skyline Drive
P.O. Box 1002
HAWTHORNE
N.Y. 10532
U.S.A.

2.2. Weighing capacities 20 kg to 1 kg

Sauter
Postfach 250
D-7470 ALBSTADT 1
Ebingen
F.R. of Germany

Sartoriuswerke GmbH
Postfach 19
D-34 GÖTTINGEN
F.R. of Germany

Anciens Ets H.L. Becker S.A.
Rue Masui Straat 220
B.1000 BRUXELLES
Belgium

Institut Métrologique Tchecoslovaque
Tr. L. Novomeského IV/487
842 55 BRATISLAVA
Czechoslovakia

Chyo Balance Corporation
376-2 Tsukiyama-cho
Kuze, Minami-ku
KYOTO
Japan

Shimadzo Seisakusho Ltd
Nijo-Minami
Kawaramachi
Nakagyo-ku
KYOTO
Japan

Mettler AG
CH-8606 GREIFENSEE
Switzerland

Oertling Ltd
Cray Valley Works
St Mary Cray
ORPINGTON, Kent BR5 2HA
United Kingdom

(cont.)

Reverifications Ltd
Stocklake
AYLESBURY, Bucks
United Kingdom

Mashpriborintorg
Smolenskaia Sennaia 32/34
121200 MOSCOW
U.S.S.R.

Voland Corporation
5 Skyline Drive
P.O. Box 1002
HAWTHORNE
N.Y. 10532
U.S.A.

Tehtnica-Zelezniki
64228 ZELEZNIKI
na Plavsu 79
Yugoslavia

2.3. Weighing capacities of 200g and below

(au-dessous de 200 g, choisir balances analytiques)

Mass comparisons in this range may be accomplished using suitably sensitive analytical laboratory balances and microbalances for which there are usually numerous suppliers in many countries (see also suppliers under 2.2). It is advised to chose suppliers which have local installation and maintenance facilities.

3. BALANCES DE VERIFICATION

VERIFICATION BALANCES (Inspector's balances)

3.1. Balances à bras égaux, fixes ou mobiles

Two-armed balances (fixed or demountable for mobile use)

Gottl. Haigis
Postfach 116
7470 ALBSTADT 3
F.R. of Germany

N.G. Brown and Associates Pty, Ltd.
7 Albert Street
RICHMOND, Vic. 3121
Australia

Ernest Pfeifle
64, Forest Park Crescent
THORNHILL, Ontario
Canada L3T 2M7

Saple's Scale Mfg. Co. Ltd.
29 Raghunath Dadajee Street
Fort
BOMBAY-I
India

Murayama Seisakusho Co., Ltd.
2-13-8 Sakae-cho
Funabashi
CHIBA
Japan

Sauter
Postfach 250
D-7470 ALBSTADT 1
Ebingen
F.R. of Germany

Anciens Ets H.L. Becker S.A.
Rue Masui Straat 220
B.1000 BRUXELLES
Belgium

Ets Vial
4 bis rue Asseline
75014 PARIS
France

Miyamoto Scale Co., Ltd.
2415-1, 5-ku, kita-cho
Takamatsu
KAGAWA
Japan

Yamato Scale Co., Ltd.
5-22 Chaemba-cho
Akashi
HYOGO
Japan

(cont.)

Oertling Ltd
Cray Valley Works
St Mary Cray
ORPINGTON, Kent BR5 2HA
United Kingdom

Troemner Inc.
6825 Greenway Avenue
PHILADELPHIA, Pa 19142
U.S.A.

Reverifications Ltd
Stocklake
AYLESBURY, Bucks
United Kingdom

Mashpriborintorg
Smolenskaia Sennaia 32/34
121200 MOSCOW
U.S.S.R.

3.2. Balances électroniques convenant à la vérification de poids

Electronic top-loading balances for verification of weights (and prepacked goods)

Electronic balances are usually more robust and suitable for transportation than previous versions of top-loading laboratory balances and find increased use as mass comparators in metrology services due to their convenience for routine work and the possibility of connection to printers and calculators. Balances using strain-gauge load cells do generally not allow a resolution higher than 1/5000. The more sensitive versions usually employ force-balance magnetic compensation and have such sensitivity as to allow verification of all commercial weights up to class M₁. As regards suppliers it is again recommended to choose those which have local maintenance facilities. The following firms are known to BIML as manufacturers of force-balance type of electronic balances.

Geb. Bosch
D-7455 JUNGINGEN
Hohenzollern
F.R. of Germany

Sartoriuswerke GmbH
Postfach 19
34 GÖTTINGEN
F.R. of Germany

Sauter
Postfach 250
D-7470 ALBSTADT 1
Ebingen
F.R. of Germany

A & D Co., Ltd.
Shintaiso Bldg., No.5-1052
2-10-7 Dogenzaka, Shibuya-ku
TOKYO
Japan

Shimadzu Corporation
1, Nishinokyo-Kuwabara-cho
Nakagyo-ku
KYOTO
Japan

Chyo Balance Corp.
376-2 Tsukiyama-cho
Kuze
Minami-ku
KYOTO
Japan

Shinko Denshi Co., Ltd.
3-9-11 Yushima
Bunkyo-ku
TOKYO
Japan

Murakami Koki Co., Ltd.
2-10-31 Akagawa
Asahi-ku
OSAKA
Japan

Mettler AG
CH-8606 GREIFENSEE
Switzerland

Wirth Gallo & Co
Sonnenbergstrasse 55
CH-8032 ZÜRICH
Switzerland

Oertling Ltd
Cray Valley Road
St Mary Cray
ORPINGTON, Kent BR5 2HA
United Kingdom

4. ETALONS DE CAPACITE DE LIQUIDES

REFERENCE AND VERIFICATION STANDARDS OF LIQUID CAPACITY

4.1. En verre

Made of glass

Consult first well-known chemical and medical laboratory suppliers catalogues on grade "A" standard laboratory volumetric glassware.

Specially made glass standards :

Fa Brand 6980 WERTHEIM Postfach 310 F.R. of Germany	Fa. Witeg Glasgeräte GmbH 6980 WERTHEIM F.R. of Germany
Fa. Glasbearbeitungswerke Alfred Link 6980 WERTHEIM F.R. of Germany	Haack Paul Garnisongasse 3 A-1090 WIEN Austria
Stölzle Oberglas AG Liechtensteinstrasse 22 A-1090 WIEN Austria	Boterdael en Zonen, p.v.b.a. Steenweg op Mechelen 660 B.1800 VILVOORDE Belgium
VEL, N.V. Geldenaaksebaan 464 B.3030 LEUVEN Belgium	OP "Edinstvo" PLOVDIV-4000 Bulgaria
Staklarski Zavod "Stind" Voenna Rampa SOFIA Bulgaria	Pullis & Hanique B.V. Brussellaan 1 5628 TA EINDHOVEN Holland
Ets Angelotti 2 rue Malebranche 75005 PARIS France	India Government Mint Fort BOMBAY 400023 India
Mueller & Krempel AG Schützenmattstrasse CH-8180 BÜLACH Switzerland	Shibata Scientific Technology Ltd. 3-1-25 Ikenohata Taito-ku TOKYO Japan
Astell-Hearson 172 Brownhill Road Catford LONDON SE6 2DL United Kingdom	Intos - R.O. TLOS Djure Djakovića 21 41000 ZAGREB Yugoslavia
	Intos - R.O. Boris Kidrič 5200 PULA Yugoslavia

4.2. En acier inoxydable, ou autre métal

Made of stainless steel or other metal

A great number of workshops can generally supply such equipment to specifications. It is advisable to chose designs of equipment which is being used by the national metrology service in the country of supply and to request initial verification by this service. As an indication only we are listing a few suppliers which have in the past furnished such equipment to metrology services :

Ludwig Brenner
Mühldorfstrasse 8
8000 MÜNCHEN 80
F.R. of Germany

Hermann Stimpfig
7 STUTTGART
Poststr. 64 a
F.R. of Germany

Diessel GmbH
3200 HILDESHEIM
Postfach 470
F.R. of Germany

Heilmittelwerke Wien GmbH
Laxenburgerstrasse 123
A-1100 WIEN
Austria

Acomal
Hanswijkvaart 10
2800 MECHELEN
Belgium

Anciens Ets Vial
4 bis rue Asseline
75014 PARIS
France

Chaudronnerie Ruault-Baron
8 rue Comte Bernadotte
56100 LORIENT
France

Nikron B.V.
Staalstraat 1
2984 AJ RIDDERKERK
Holland

Chiyoda Mfg. Co., Ltd.
29-6 Oyama-cho
Itabashi-ku
TOKYO
Japan

Anton Ellinghaus
472 BECKUM
Postfach 101
F.R. of Germany

Deutsche Gerätebau
4796 SALZKOTTEN
Postfach 119
F.R. of Germany

Schwelmer Eisenwerk
Müller and Co.
583 SCHWELM
F.R. of Germany

Ateliers Gardinal
Route de Bavay (Zoning)
7230 FRAMERIES
Belgium

Industries d'Acier Inoxydable Ltée
5675, Boulevard des Grandes-Prairies,
Suite 119
MONTREAL, Québec
Canada H1R 1B3

Chaudronnerie industrielle Ch. Gauthier
30 boulevard de Brandenbourg
94200 IVRY-PORT
France

Lebon & Visser N.V.
Kostverlorenweg 5B
3762 EM SOEST
Holland

Segaar
Schiedijk 116B
3211 AP LEIDEN
Holland

Oval Engineering Co., Ltd.
3-10-8 Kami-ochiai
Shinjuku-ku
TOKYO
Japan

(cont.)

Tokico Ltd.
Kyowa-kudan Bldg.
1-5-6 kudan-minami
Chiyoda-ku
TOKYO
Japan

Kasag-Flückiger AG
Hohgantweg
CH-3550 LANGNAU
Switzerland

Franke AG
Metallwerke
CH-4663 AARBURG
Switzerland

Wartmann AG
Industriestrasse
CH-4838 OBERBIPP
Switzerland

Aluminium-Schweisswerk AG
Bernstrasse 63
CH-8952 SCHLIEREN
Switzerland

Wragg Bros
Robert Way
Wickford Industrial Estate
WICKFORD, Essex SS11 8DQ
United Kingdom

Simmonds and Hawker Ltd.
Central Way
FELTHAM, Middlesex TW14 OUQ
United Kingdom

4.3. Equipement installé sur camion pour la vérification de fortes capacités de liquides

Special verification equipment of big volumes of liquid capacity installed on trailers (or trucks)

Wartungs und Prüfungsdienst
(Bopp and Reuther subsidiary)
68 MANNHEIM/WALDHOF
Postfach 310546
F.R. of Germany

Bennett and Emmott Ltd
1813, on 118 Avenue
EDMONTON, Alberta
Canada T5S 1M8

Mestrole
Rue Pierre et Marie Curie
Zone Industrielle
76650 LE PETIT COURONNE
France

Oval Engineering Co
3-10-8 Kami-Ochiai
Shinjuku-ku
TOKYO
Japan

Tokico Ltd.
Kyowa-kudan Bldg.
1-5-6 kudan-minami
Chiyoda-ku
TOKYO
Japan

Ateliers Gardinal
Route de Bavay (Zoning)
7230 FRAMERIES
Belgium

Remtec Inc.
933, rue Simard
CHAMBLY, Québec
Canada J3L 4B7

Anciens Ets Vial
4 bis rue Asseline
75014 PARIS
France

Chiyoda Mfg. Co., Ltd.
29-6 Oyama-cho
Itabashi-ku
TOKYO
Japan

Wartmann AG
Industriestrasse
CH-4838 OBERBIPP
Switzerland

Aluminium-Schweisswerk AG
Bernstrasse 63
CH-8952 SCHLIEREN
Switzerland

Kasag-Flückiger AG
Hohgantweg
CH-3550 LANGNAU
Switzerland

Simmonds and Hawker Ltd
Central Way
FELTHAM, Middlesex TW14 OUQ
United Kingdom

Moore, Barrett and Redwood Ltd
83 Kingsway
London WC2B 6SD
United Kingdom

Dresser Europe S.A.
Dresser Wayne Division
Western Road
BRACKNELL, Berkshire RG12 1RJ
United Kingdom

Gilbarco Ltd
Crompton Close
BASILDOW, Essex SS14 3BA
United Kingdom

Garsite Products Inc.
10 East Grand Blvd
DEER PARK

Avery Hardoll Ltd
Downley Road
Leigh Park
HAVANT, Hampshire PO16 7PZ
United Kingdom

L.I.
N.Y. 11729
U.S.A.

Energoinvest - R.O. Mjerni sistemi
Lukavica
71000 SARAJEVO
Yugoslavia

4.4. Installations de vérification de compteurs de liquides

Fixed equipment for verification of liquid meters
(hydrocarbon products, milk, water, etc.)

Consult the suppliers indicated in 4.3. and

Firma Hermann Gottwald
Tankanlagen
Branau
INNSBRÜCK
Austria

Elin-Union AG
Abteilung Wasserwerkstechnik
Hainburgerstrasse 33
A-1031 WIEN
Austria

Fa. Edvard Schinzel GmbH
Weissgerberlande 56
A-1030 WIEN
Austria

Schwingenschlögel GmbH
Gewerbestrasse 12
A-5301 SALZBURG-EUGENDORF
Austria

Wolbank Konstruktion GmbH
Trattengasse 2
A-9500 VILLACH
Austria

Ateliers Gardinal
Route de Bavay (Zoning)
7230 FRAMERIES
Belgium

RNG Equipment Ltd
32, Stoffel Drive
TORONTO, Ontario
Canada M9W 1A8

Graco Canada Inc.
3400, American Drive
MISSISSAUGA, Ontario
Canada L4V 1C1

I.C.G. Gaz Liquide Ltée
Division volumétrique
6660, Route 132 Ouest
VILLE STE-CATHERINE, Québec
Canada JOL 1E0

Liquid Transfer Systems Ltd
7990, Alfred Avenue
VILLE D'ANJOU, Québec
Canada H1J J1Z

(cont.)

TRAPIL
route du bassin n° 5
92230 GENNEVILLIERS
France

Landis & Gyr S.A.
CH-6300 ZUG
Switzerland

Twin Bay Industries
8980 Cairn Highway
ELK RAPIDS, Michigan 49629
U.S.A.

Enertec-Schlumberger
12 place des Etats-Unis
B.P. 620
92542 MONTRouGE CEDEX
France

Compagnie des Compteurs S.A.
Chemin Isaak-Anken 1
CH-1219 GENEVE/AÏRE

Flow Technology, Inc.
4250 East Broadway Road
P.O. Box 21346
PHOENIX, Arizona 85036
U.S.A.

5. EQUIPEMENT pour la VERIFICATION de LONGUEURS et DIMENSIONS

DIMENSIONAL (LENGTH) MEASURING EQUIPMENT

A quite large number of firms manufacture engineering metrology equipment for tool-rooms of the precision industry.

We are therefore mainly listing a few firms which are known to BIML as manufacturers of very high grade or of specialized equipment required for laboratories of the national metrology services.

Mesurage d'étalons à bouts plans

Measurement of end gauges

5.1. Etalons à bouts plans, classe AA et A

Gauge blocks for use as reference standards (class AA and A)

Karl Frank GmbH
Messzeugbau
6940 WEINHEIM/Bergstr.
F.R. of Germany

Carl Mahr
Spezialfabrik für Feinmessgeräte
und Lehren
7300 ESSLINGEN
F.R. of Germany

Le Calibre
52-62, avenue d'Enghien
93800 EPINAY SUR SEINE
France

Mitotoyo Mfg. Co. Ltd
5-33-7 Shiba
Minato-ku
TOKYO
Japan

CE Johansson
Box 365
S-63105 ESKILSTUNA 1
Sweden

Webber Gage Division
L S Starrett Co
24500 Detroit Road
CLEVELAND, Ohio 44145
U.S.A.

Micronaid Slip Gauges Ltd
1 Wesley Street
LEICESTER LE4 5QG
United Kingdom

Kolb + Baumann GmbH
& Co. KG
Fabrik für Präzisionsmesszeuge
Aschaffstrasse 68
8750 ASCHAFFENBURG
F.R. of Germany

Z.I.U.
ul. Vassil Kolarov N° 38
BLAGOEVGRAD 2700
Bulgaria

Kuroda Precision Industries Co., Ltd
239 Shimohirama, Saiwai-ku
Kawasaki-shi
KANAGAWA
Japan

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO
Japan

Cary
Concorde 31
CH-2400 LELOCLE
Switzerland

Coventry Gauge Ltd
Park Avenue
MEDLEY, Telford TF5 BP
United Kingdom

Yorkshire Precision Gauges Ltd
Hatfield
DONCASTER DN7 6QF
United Kingdom

5.2. Comparsateurs à tête de mesure inductive

Vertical contact comparator for the intercomparison of gauge blocks (with inductive transducers)

Carl Mahr
Postfach 147
7300 ESSLINGEN
F.R. of Germany

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO 105
Japan

Cary
Concorde 31
CH-2400 LE LOCLE
Switzerland

Tesa
38 rue du Bugnon
CH-1020 RENENS
Switzerland

5.3. Plans optiques pour la vérification de planéité

Optical flats for the verification of flatness of gauge blocks

Hommelwerke GmbH
POB 1229
D-7220 VS-SCHWENNINGEN
F.R. of Germany

VEB Carl Zeiss
69-JENA
German Dem. Rep.

Nihon Kougaku Kogyo Co. Ltd
3-2-3 Marunouchi, Chiyoda-ku
TOKYO
Japan

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO
Japan

Mitutoyo Mfg. Co. Ltd
5-33-7 Shiba
Minato-ku
TOKYO
Japan

Rank Taylor Hobson
PO Box 36
Guthlaxton Street
LEICESTER LE2 OSP
United Kingdom

Mashpriborintorg
Smolenskaia Sennaia 32/34
MOSCOW
U.S.S.R.

5.4. Machines universelles à mesurer à contact et pour l'étalonnage des règles divisées

Universal horizontal measuring machines for comparison of (long) gauge blocks by mechanical contact, external and internal measurements, and high-accuracy calibration of divided scales

Leitz
Postfach 2020
6320 WETZLAR
F.R. of Germany

VEB Carl Zeiss
69 JENA
German Dem. Rep.

Mitutoyo Mfg. Co. Ltd.
5-33-7 Shiba, Minato-ku
TOKYO
Japan

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO 105
Japan

(cont.)

Sigma Ltd
Spring Road
Letchworth
Herts SG6 4AJ
United Kingdom

Eley & Warren Precision Engineers Ltd
42-48 Ashbourne Road
Derby DE3 3AD
United Kingdom

L.K. Tool Co. Ltd.
East Midland Airport
Castle Donington
Derby DE7 2SA
United Kingdom

Société Gènevoise d'Instruments de Physique
8 rue des Vieux-Grenadiers
CH-1211 GENEVA 11
Switzerland

Institut Métrologique Tchécoslovaque
Tr. L. Novomeského IV/487
842 55 BRATISLAVA
Czechoslovaquie

5.5. Interféromètres pour l'étalonnage de calibres à bouts plans

Interferometers for absolute measurement of gauge blocks in terms of wave-lengths

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO 105
Japan

Mesurage de règles divisées

Measurement of divided scales

As regards line standards and equipment of very high accuracy for comparison of line standards see suppliers under universal measuring machines, point 5.4.

(à haute précision, voir 5.4)

5.6. Compérateurs de règles divisées (précision moyenne)

Line standard comparators of medium accuracy for local laboratories (for fixed installation according to specifications 1, 2 m or more)

F.W. Breithaupt and Sohn
Adolfstrasse 13
3500 KASSEL
F.R. of Germany

Hommelwerke GmbH
POB 1229
7220 VS-SCHWENNINGEN
F.R. of Germany

Johann Fischer
Präzisionswerk
Ruhlandstr. 72-74
8750 ASCHAFFENBURG-LEIDET
F.R. of Germany

Oelze
Präzisions-Messwerkzeugfabrik GmbH
Bollenwaldstr. 112
8750 ASCHAFFENBURG 19-Obernau
F.R. of Germany

Desauge et Lair
22-32 rue Marcel Bourdarias
94140 ALFORTVILLE
France

Ets GMT
9 rue Mederic
92250 LA GARENNE COLOMBES
France

India Government Mint
The Fort
BOMBAY 400023
India

Société Gènevoise d'Instruments de Physique
8 rue des Vieux-Grenadiers
CH-1211 GENEVE 11
Switzerland

(cont.)

5.7. Mètres rigides en acier pour vérification

Rigid meters for verification, of steel

Breithaupt and Sohn
Adolfstrasse 13
3500 KASSEL
F.R. of Germany

Hommelwerke GmbH
POB 1229
7220 VS-SCHWENNINGEN
F.R. of Germany

Johann Fischer
Postfach 105
8750 ASCHAFFENBURG
F.R. of Germany

Desauge-Lair
22-32 rue Marcel Bourdarias
94140 ALFORTVILLE
France

India Government Mint
Fort
BOMBAY 400023
India

Yamayo Measuring Tools Co. Ltd
4-2 Nihonbashi-honcho
Chuo-ku
TOKYO
Japan

Seiko Industry Co. Ltd
2-1-12 Higashi-Tabata
Kita-ku
TOKYO
Japan

Société Gènevoise d'Instruments
de Physique
8, rue des Vieux-Grenadiers
CH-1211 GENEVE 11
Switzerland

Carl Mahr
Postfach 147
7300 ESSLINGEN
F.R. of Germany

C. Stiefelmayer
7300 ESSLINGEN
F.R. of Germany

N.P.P.G.P.
ul. P. Tonev No. 10
SOFIA
Bulgaria

Ets GMT
9 rue Médéric
92250 LA GARENNE COLOMBES
France

Tajima Industry Co. Ltd
3-4-3 Azusawa
Itabashi-ku
TOKYO 105
Japan

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO 105
Japan

Theodor Schweitzer GmbH & Co. KG
Postfach
7137 STERNENFELS
F.R. of Germany

Coventry Gauge Ltd
Park Avenue
Madeley
TELFORD, Shropshire TF 5 BP
United Kingdom

Règles digitales Digital divided scales

Dr. J. Heidenhain
Postfach 1260
8225 TRAUNREUT
F.R. of Germany

Nihon Kougaku Kogyo Co., Ltd
3-2-3 Marunouchi, Chiyoda-ku
TOKYO
Japan

Mitutoyo Mfg. Co., Ltd
5-33-7 Shiba, Minato-ku
TOKYO
Japan

Sony Magnescale Inc.
3-9-17 Gotanda
Shinagawa-ku
TOKYO
Japan

(cont.)

Tokyo Seimitsu Co., Ltd
9-7-1 Shimorenjaku
Mitaka-shi
TOKYO
Japan

Mètres rigides en laiton pour vérification

Rigid meters for verification, of brass

Reverifications Ltd
Stocklake
AYLESBURY, Bucks
United Kingdom

Mashpriborintorg
Smolenskaia Sennaia 32/34
MOSCOW
U.S.S.R.

5.8. Rubans étalons

Standard tape measures (3 to 30 metres)

Stabila Messgeräte
Gustav Ullrich GmbH. & Co. KG.
Postfach 1340
6747 ANNWEILER am TRIFELS
F.R. of Germany

Weiss Messwerkzeuge GmbH.
Postfach 1168
8488 ERBENDORF
F.R. of Germany

Bayerische Massindustrie
Arno Keller GmbH
8562 HERSBRUCK
F.R. of Germany

A. Maywald KG
3548 AROLSEN WALDECK
F.R. of Germany

Friedrich Richter
Messwerkzeugfabrik KG. GmbH. & Co.
Postfach 63
8585 SPEICHERSDORF
F.R. of Germany

Gottlieb Nestle GmbH. & Co. KG.
Vermessungsgerätefabrik
Postfach 1180
7295 DORNSTETTEN
F.R. of Germany

Ets GMT
9 rue Médéric
92250 LA GARENNE COLOMBES
France

N.P.P.G.P.
ul. P. Tonev No. 10
SOFIA
Bulgaria

Tajima Industry Co., Ltd.
3-4-3 Azusawa
Itabashi-ku
TOKYO
Japan

Desauge-Lair
22-32, rue Marcel Bourdarias
94140 ALFORTVILLE
France

L.S. Starrett Co. Ltd.
Oxnam Road
JEDBURGH
Roxburghshire
Scotland TD8 6LR
United Kingdom

Yamayo Measuring Tools Co., Ltd
4-2 Nihonbashi Hon-cho
Chuo-ku
TOKYO
Japan

Rabone Chestermann
Pomona Street
SHEFFIELD S11 8TP
United Kingdom

5.9. Equipement général de vérification de produits finis,
voir les fabricants ci-dessous

Equipment for verification of commonly used instruments and
manufactured products

Such equipment includes tool-room microscopes, profile projectors, surface plates, gauge blocks grade B and C, sinus bars, tool maker's, knife-edges, comparators and dial indicators, micrometers, vernier calipers, height gauges, levels, mounting blocks, bore measuring equipment etc. and may be supplied by many firms including for instance Carl Mahr, Hommelwerke, Stiefelmayer, Carl Zeiss, VEB Zeiss-Jena, Coventry Gauge, Rank Taylor Hobson, Mitotoyo, CE Johansson, Tesa, Tsugami, etc. for which the addresses are indicated above or below. *

5.10. Instruments pour l'étalonnage de comparateurs et vis micrométriques

Equipment for calibrating dial indicators, micrometers and dial comparator:

Carl Mahr
Postfach 147
7300 ESSLINGEN
F.R. of Germany

Z.I.U.
ul. Vassil Kolarov N° 38
BLAGOEVGRAD 2700
Bulgaria

Mitotoyo Mfg. Co. Ltd
5-33-7 Shiba
Minato-ku
TOKYO
Japan

Ozaki Mfg. Co.
1-63-11 Jobandai
Itabashi-ku
TOKYO
Japan

Tesa
38 rue du Bugnon
CH-1020 RENENS
Switzerland

5.11. Mesurage d'états de surface

Measurement of surface finish

The following suppliers are known to manufacture instruments following the requirements of ISO Standards and using inductive transducers :

Feinprüf/Perthen GmbH
Postfach 119
3400 GÖTTINGEN
F.R. of Germany

Hommelwerke GmbH
P.O.B. 3268
7730 VILLINGEN-SCHWENNINGEN
F.R. of Germany

(cont.)

* A list of suppliers in the United Kingdom is given in the NPL Report MOM 22, March 1977 "Recommendations for the design and equipping of engineering metrology laboratories".

Mitotoyo Mfg. Co., Ltd
5-33-7 Shiba, Minato-ku
TOKYO
Japan

Tokyo Seimitsu Co., Ltd
9-7-1 Shimorenjaku
Mitaka-shi
TOKYO
Japan

Kosaka Laboratory Ltd
Ikeda Bldg.
3-49-2 Kanamachi
Katsushika-ku
TOKYO
Japan

Rank Taylor Hobson Ltd
P.O. Box 36
Leicester LE4 7JQ
United Kingdom

5.12. Etalons d'état de surface (voir aussi 5.11)

Surface roughness standards (with official certificates)

The same suppliers as for 5.11. plus

Eberhard Halle VDI
Feinwerktechnik
Bunzlaustrasse 2
3300 BRAUNSCHWEIG
F.R. of Germany

CE Johansson
33 boulevard Dubreuil
91400 ORSAY
France

Pierre Roch S.A.
ROLLE
Switzerland

Rubert and Co. Ltd
Accru Works
Demmings Road
CHEADLE, Cheshire SK8 2PG
United Kingdom

5.13. Mesurage d'angles

Angle measuring equipment, auto-collimators, optical polygons,
clinometers, etc.

F.W. Breithaupt and Sohn
Adolfstrasse 13
3500 KASSEL
F.R. of Germany

Leitz
Postfach 2020
6320 WETZLAR
F.R. of Germany

Dr. J. Heidenhain
Postfach 1260
8225 TRAUNREUT
F.R. of Germany

J.D. Möller Optische Werke GmbH
Postfach 280
2000 WEDEL/HAMBURG
F.R. of Germany

VEB Carl Zeiss
69 JENA
German Dem. Rep.

N.P.P.G.P.
ul. P. Tonev No.10
SOFIA
Bulgaria

Nihon Kougaku Kogyo Co. Ltd
3-2-3 Marunouchi, Chiyoda-ku
TOKYO
Japan

Kuroda Precision Industries Co. Ltd
239 Shimohirama, Saiwai-ku
Kawasaki-shi
KANAGAWA
Japan

Tsugami Corporation
1-18-16 Shinbashi
Minato-ku
TOKYO 105
Japan

Daiichi Gauge Seisakusho Ltd
2-1-23 Higashi-machi, Hoya-shi
TOKYO
Japan

(cont.)

Huggenberg AG
Hohlstrasse 176
CH-8040 ZÜRICH
Switzerland

Rank Taylor Hobson
P.O. Box 36
2 New Star Road
LEICESTER LE4 7JQ
United Kingdom

L.S. Starrett Company
Quarry Road, Box 408
MOUNT AIRY
North Carolina 27030
U.S.A.

Moore Special Tool Co. Inc.
800 Union Avenue
BRIDGEPORT 7., Conn.
U.S.A.

Webber Gage division
24 500 Detroit Road
CLEVELAND, Ohio 44 145
U.S.A.

5.14. Lasers stabilisés par cellules à absorption saturée selon la Recommandation CIPM 1 de 1983

Lasers stabilized by use of saturated absorption cells according to CIPM Recommendation 1, 1983

Ets Jaeger
2, rue Baudin
92300 LEVALLOIS-PERRET
France

Etablissement Technique Central
de l'Armement
16 bis, avenue Prieur de la Côte d'Or
94114 ARCUEIL CEDEX
France

Sopra
5, rue Jean-Baptiste Henri Lafolie
92250 LA GARENNE COLOMBES
France

Mitutoyo Mfg. Co., Ltd
5-33-7 Shiba, Minato-ku
TOKYO
Japan

5.15. Lasers stabilisés par d'autres moyens convenant aux mesures de longueurs par interférométrie

Lasers stabilized by other means suitable for use in length measurements

Lumonics Inc.
105, Schneider Road
KANATA, Ontario
Canada K2K 1Y3

Photonetics
52, avenue de l'Europe
78160 MARLY LE ROI
France

Techno 2000
Hameau de Courcelles
122, rue de Paris
78470 SAINT REMY LES CHEVREUSE
France

Barr & Stroud Ltd
Caxton Street
Anniesland
GLASGOW G13 HZ
Scotland

Hewlett-Packard
1501 Page Mill Road
PALO ALTO, California 94304
U.S.A.

Spectra Physics
Optics Division
1250 W. Middlefield Road
MOUNTAIN VIEW, CA 94042
U.S.A.

6. EQUIPEMENT pour l'ETALONNAGE d'AREOMETRES

HYDROMETER CALIBRATION EQUIPMENT

Such equipment can generally be obtained from well-known chemical laboratory suppliers. We are below only listing a few other possible sources.

6.1. Aréomètres étalons Standard hydrometers

Horst Rempt
Schönwalderstrasse 23
1 BERLIN 44

Fa. Gering u. Co.
Postfach 1245
3520 HOFGEISMAR
F.R. of Germany

Fa. Greiner-Glasinstrumente
Postfach 243
4920 LEMGO
F.R. of Germany

Fa. Günther und Scharr
Phil.-Schmittstr. 14/16
6902 SANDHAUSEN
F.R. of Germany

Fa. Leo Kühler GmbH
Hardstr. 8
7500 KARLSRUHE 21
F.R. of Germany

Fa. Franz Widder OHG
6983 KREUZWERTHEIM/M
F.R. of Germany

Prolabo
12 rue Pelée
B.P. 200
75526 PARIS CEDEX 11
France

G.H. Zeal Ltd
Lombard Road
Merton
LONDON SW19
United Kingdom

Carlton Instrument Co.
107 Bowen Street
BRISBANE
Queensland 4000
Australia

S Hillis
9 Tasman Road
AVALON, NSW 2107
Australia

Anton Paar K.G.
Postfach 58
A-8054 GRAZ
Austria

Epprecht Instruments & Controls AG
Bichwilerstrasse
CH-8303 BASSERDORF
Switzerland

Astell-Hearson
172 Browhill Road
LONDON SE6
United Kingdom

Poulten, Self & Lee,
Wickford
Essex
United Kingdom

6.2. Enceintes thermostatées

Thermostated jacket with flat glass window connected to circulating thermostat for testing hydrometers

Messgerätewerk Lauda
Postfach 350
6970 LAUDA/TAUBER
F.R. of Germany

Haake Messtechnik
Dieselstrasse 4
D-7500 KARLSRUHE
F.R. of Germany

Prolabo
12 rue Pelée
B.P. 200
75526 PARIS CEDEX 11
France

Tamson B.V.
Industrieweg 7
ZOETERMEER
Netherlands

7. EQUIPEMENT POUR L'ETALONNAGE D'HYGROMETRES HUMIDITY CALIBRATION EQUIPMENT

7.1. Hygrostats à sels saturés

Salt hygrostats (specially made for calibration purposes)

VEB Feutron Greiz
Postfach 3/4
66 GREIZ
German Democratic Republic

(Salt hygrostats can also be supplied by several of the great chemical laboratory suppliers as well as by some of the suppliers of climatic test cabinets).

7.2. Hygromètres étalons à point de rosée

Automatic dew point hygrometers (using frigistor cooling)

Humidity Calibration Equipment
Techniquip
2 Haitel Close
West Pymble
NSW 2073
Australia

Sulzer S.A.
CH-8400 WINTHERTHUR
Switzerland

EG and G Environmental Equipment
151 Bear Hill Road
WALTHAM, Mass. 02154
U.S.A.

Prolabo
12 rue Pelée
B.P. 200
75526 PARIS CEDEX 11
France

MBW Elektronik AG Wettingen
Seminarstrasse 55
CH-5430 WETTINGEN
Switzerland

General Eastern Instruments Corp.
36 Maple Street
WATERTOWN, Mass. 02171
U.S.A.

8. EQUIPEMENT POUR L'ETALONNAGE DE FORCES

FORCE CALIBRATION EQUIPMENT

Dynamometers and load cells are manufactured by a great number of firms. However only few may be suitable for use as reference standards due to ageing problems. We indicate below a few suppliers known to have furnished such equipment to national metrology services.

8.1. Dynamomètres de référence

Reference dynamometers

Dr. Ing. Georg Wazau
Keplerstrasse 12
1000 BERLIN 10

VEB Kraftmessgeräte Halle
402 HALLE/SAALE
Burgenhagenstrasse 12
German Dem. Rep.

Maekawa Testing Machine Mfg. Co., Ltd
3-16-20 Shibaura
Minato-ku
TOKYO
Japan

Tokyo Koki Seizosho Ltd
4-4 Nihonbashi - Muromachi
Chuo-ku
TOKYO
Japan

The Sheffield Testing Works Ltd
Nursery Street
SHEFFIELD S3 8GP
United Kingdom

Morehouse Instrument Co
1742 Sixth Avenue
YORK, Pa 17403
U.S.A.

8.2. Cellules de charge et ponts de mesure

Load cells and bridges

Hottinger-Baldwin Messtechnik
Postfach 4235
6100 DARMSTADT 1
F.R. of Germany

Siemens AG, Gerätewerk Karlsruhe
Postfach 211080
7500 KARLSRUHE 21
F.R. of Germany

Philips Ned. B.V.
att. de R. Dam
groep proces-techniek
Gebouw VB 3 - kamer 2
Boschdijk 526
5600 PD EINDHOVEN
Holland

T.N.O. - Iweco
Postbus 29
2600 AA DELFT
Holland

MOM kalibergyar
Rózsafa u. 13-17
1134 BUDAPEST
Hungary

Molenschot
Postbus 3246
4800 DE BREDA
Holland

Toyo Baldwin Co., Ltd
Mori Bldg., No.23
1-23-7 Toranomon
Minato-ku
TOKYO
Japan

Servo Balans
Contactweg 40
1014 AN AMSTERDAM
Holland

AB Bofors Elektronik
Box 600
690 20 BOFORS
Sweden

Kyowa Electronic Instruments Co., Ltd
3-5-1 Chofugaoka
Chofu
TOKYO
Japan

Vibrometre S.A.
Rte de Moncor 4
1752 VILLARS SUR GLANNE
Switzerland

(cont.)

Davy Instruments Ltd.
Darnall Works
SHEFFIELD S9 4FA
United Kingdom
Revere Corporation
845 N. Colony Road
WALLINGFORD, CT 06492
U.S.A.

Lebow Associates Inc.
1728 Maplelawn Road
P.O. Box 1089
TROY, Michigan 48099
U.S.A.

8.3. Machines d'étalonnage de force

Calibrators for load cells and dynamometers

Carl Schenck
Maschinenfabrik GmbH
Landwehrstrasse 55
D-6100 DARMSTADT
F.R. of Germany

Mohr-Federhaff-Losenhausen (MFL)
Postfach 1502
D-6800 MANNHEIM
F.R. of Germany

A.M. Erichsen GmbH
Wittensteinstr. 53
D-5600 WUPPERTAL 2
F.R. of Germany

Maekawa Testing Machine Mfg. Co. Ltd
3-16-20 Shibaura
Minato-ku
TOKYO
Japan

Morehouse Instrument Co
1742 Sixth Avenue
YORK, Pa 17403
U.S.A.

9. EQUIPEMENT POUR L'ETALONNAGE DE PRESSIONS

PRESSURE CALIBRATION EQUIPMENT

9.1. Manobaromètres

Mercury mano-barometers and associated test equipment

Très haute précision
Very high accuracy (+ 0.05 mbar) :

Jaeger
96 bis, rue Edouard Vaillant
92303 LEVALLOIS-PERRET
France

Nagano Keiki Seisakusho Ltd
1-30-4 Higashimagome
Ohta-ku
TOKYO
Japan

Schwien Engineering Inc
2882 Metropolitan Place
POMONA Ca 91767
U.S.A.

Haute précision
High accuracy (+ 0.1 mbar) :

Dr. A. Müller
Meteorologische Instrumente
(R. Fuess Nachfolger)
Lützowstrasse 102-104
D-1000 BERLIN 30

Műszeripari Kutató Intézet
Vésó utca 3
BUDAPEST XIII
Hungary

(cont.)

Wallace and Tiernan Ltd
Priory Works
TONBRIDGE, Kent
United Kingdom

Hass Instrument Corp.
6711 Old Branch Avenue
WASHINGTON, DC 20031
U.S.A.

Ideal Aerosmith Inc.
1505 E. Fox Farm Road
CHEYENNE, N.Y. 82001
U.S.A.

Exactel Instruments Co
Division of Statham Instruments
2230 Statham Boulevard
OXNARD, Calif.
U.S.A.

9.2. Mano-baromètres de transfert à lecture digitale

Transfer standard, force compensation digital, mano-barometers (+ 0.2 mbar)

Crouzet
rue Jules Védrines
B.P. 1014
26010 VALENCE CEDEX
France

Nagano Keiki Seisakusho Ltd
1-30-4 Higashimagome
Ohta-ku
TOKYO
Japan

Mensor Corp.
1055 Conrad Saver Road
HOUSTON, Texas 77043
U.S.A.

Ruska Instrument Corporation
P.O. Box 36010
HOUSTON, Texas 77036
U.S.A.

Airesearch Manufacturing Company of California
2525 West 190th Street
TORRANCE, California 90509
U.S.A.

9.3. Manomètres à piston pour étalonnages (*)

Piston type dead-weight pressure calibrators and test equipment

Maihak AG
Semperstrasse 38
2000 HAMBURG 39
F.R. of Germany

VEB Messgerätewerk Beierfeld
9433 BEIERFELD
German Dem. Rep.

Maschinenfabrik Andritz
Reichsstrasse 66
A-8051 GRAZ
Austria

Desgranges et Huot
10 rue Bernard Mazoyer
93300 AUBERVILLIERS
France

Tradinco Instr. App. B.V.
P.O. Box 37
2650 AA BERKEL EN RODENRIJS
Holland

Ora-Müszeripari Szövetkezet
Jókai utca 9
BUDAPEST VI
Hungary

Asakawa Sokki Seisakusho Co. Ltd
5-21-3 Nishi-Oku
Arakawa-ku
TOKYO
Japan

Futaba Sokki Seisakusho Co., Ltd
8-21-14 Higashi-Oku
Arakawa-ku
TOKYO
Japan

Nagano Keiki Seisakusho Ltd
1-30-4 Higashimagome
Ohta-ku
TOKYO
Japan

Huber Instrumente
Freihofgasse 4
CH-4410 LIESTAL
Switzerland

(cont.)

(*) Such instruments are manufactured in many countries.
We are limiting the list to a few makers of metric testers of this type.

Institut Métrologique Tchecoslovaque
Tr. L. Novomeského IV/487
842 55 BRATISLAVA
Czechoslovaquie

Budenberg Gauge Co. Ltd
P.O. Box 5, Broadheath
ALTRINCHAM WA14 4ER
United Kingdom

Ametek
Mansfield and Green Division
8600 Somerset Drive
LARGO, FL. 33543
U.S.A.

Ruska Instrument Corporation
P.O. Box 36010
6121 Hillcroft
HOUSTON, Texas 77036
U.S.A.

9.4. Manomètres différentiels à colonne de liquide ou à capsule

Differential manometers

Schiltknecht AG
CH-8625 GOSSAU / ZH
Switzerland

Revue Thommen AG
CH-4437 WALDENBURG
Switzerland

9.5. Etalons pour la mesure du vide

Vacuum standard measuring instruments

Spinning rotor gauges :

Leybold-Heraeus GmbH
Bonner Strasse 504
Postfach 510 760
D-5000 KÖLN
F.R. of Germany

MKS Instruments Inc.
34 Third Avenue
BURLINGTON, MA 01803
U.S.A.

Mc Lead gauges and Bayard-Alpert ionization gauges :

SVT
135 rue du Théâtre
75015 PARIS
France

Edwards High Vacuum
Manor Royal
Crawley
West Sussex
United Kingdom

10. EQUIPEMENT POUR L'ETALONNAGE DE THERMOMETRES

TEMPERATURE CALIBRATION EQUIPMENT (*)

10.1. Point triple de l'eau et autres points fixes

Water triple point cells (and other fixed points reproducing IPTS 1968)

Forschungsgemeinschaft Glas
Postfach 1302
6980 WERTHEIM 1
F.R. of Germany

Kamerlingh Onnes Laboratorium
Nieuwsteeg 18
LEIDEN
Holland

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Institutul de Metrologie
Soseaua Vitan Birzesti 11
BUCAREST 5
Romania

National Physical Laboratory
Division of Chemical Standards
TEDDINGTON, Middlesex
United Kingdom

Office of Standard Reference Materials
National Bureau of Standards
GAITHERSBURG, MD 20899
U.S.A.

Jarrett Instruments Co.
2910 Lindell Street
WHEATON, MD 21601
U.S.A.

Van Swinden Laboratorium
Postbus 654
2600 AR DELFT
Holland

Atago Bussan Co. Ltd
Sanyei Building
7-23, 5-chome Shimbashi
Minato-ku
TOKYO 105
Japan

Shimadzu Corporation
1, Nishinokyo-Kuwabara-cho
Nakagyo-ku
KYOTO
Japan

Institut Métrologique Tchecoslovaque
Tr. L. Novomeského IV/487
842 55 BRATISLAVA
Czechoslovakia

Spembly Ltd
Nowbury Road
ANDOVER SP10 4DR
United Kingdom

Yellow Springs Instrument Co. Inc.
P.O. Box 279
YELLOW SPRINGS, Ohio 45387
U.S.A.

Institut za nuklearne nauke
"Boris Kidrič"
Pob. 522 Vinča
1100 BEOGRAD
Yugoslavia

(*) A list of suppliers of temperature calibration equipment in the United Kingdom is given in the NPL Report TSZ1 of 28/11/78 "The design of measurement standard laboratories" by P.B. Coates.

10.2. Thermomètres étalons à résistance de platine

High accuracy platinum resistance thermometers

W.C. Heraeus GmbH
Postfach 169
6450 HANAU
F.R. of Germany

Chino Works, Ltd.
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Rosemount Inc.
P.O. Box 35129
MINNEAPOLIS, Mn 55435
U.S.A.

Priborostroïtelen Zavod
KOPRIVSHTITSA 2090
Bulgaria

H. Tinsley and Co. Ltd
Werndee Hall
South Norwood
LONDON SE25
United Kingdom

Yellow Springs Instrument Co.
P.O. Box 279
YELLOW SPRINGS, Ohio 45387
U.S.A.

10.3. Ponts de haute précision pour thermomètres à résistance

Bridges for use with high accuracy resistance thermometers

Same suppliers as for 10.2. (except Heraeus), plus

Guildline Instruments Inc.
P.O. Box 99
SMITH FALLS
Ontario K7A 4S9
Canada

Cropico Ltd
Hampton Road
CROYDON, Surrey
United Kingdom

Automatic Systems Laboratories
Construction House
Grovebury Road
LEIGHTON BUZZARD
United Kingdom

10.4 Thermocouples étalons

Standard thermocouples (supplied with official certificates)

Degussa
Leipziger Strasse 10
6450 HANAU/MAIN
F.R. of Germany

Laboratoire National d'Essais
1 rue Gaston Boissier
75015 PARIS
France

Chino Works, Ltd.
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Priborostroïtelen Zavod
KOPRIVSHTITSA 2090
Bulgaria

Van Swinden Laboratorium
Postbus 654
2600 AR DELFT
Holland

Institutul National de Metrologie
Sos. Vitan Birzesti 11
BUCAREST 5
Romania

(cont.)

Johnson Matthey Metals Ltd
South Way
Exhibition Grounds
WEMBLEY, Middlesex
United Kingdom

Engelhard Industries Ltd
St Nicholas House
St Nicholas Road
SUTTON, Surrey
United Kingdom

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

10.5. Bains thermostatés pour l'étalonnage de thermomètres

Liquid baths specially conceived for the calibration of thermometers

Boepple and Co
Am unteren Rain 2
6300 GIESSEN
F.R. of Germany

Messgerätewerk Lauda
Postfach 350
6970 LAUDA/TAUBER
F.R. of Germany

Haake Messtechnik
Dieselstrasse 4
D-7500 KARLSRUHE 41
F.R. of Germany

Schwing Verfahrenstechnik
4133 NEUKIRCHEN - VLUYN
Oderstr. 7, Postf. 219
F.R. of Germany

VEB Prüfgerätewerk Medingen
Leskestrasse 10
821 FREITAL
German Dem. Rep.

HETO
Klintehoj Vaenge 3
3460 BIRKEROD
Denmark

Dott. Ing. Scandura & C S.p.a.
Via Noera 43
20141 MILANO
Italy

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Tamson B.V.
Industrieweg 7
ZOETERMEER
Netherlands

H.N. Irving
258 Kingston Road
TEDDINGTON, Middlesex
United Kingdom

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

Rosemount Inc.
P.O. Box 35129
MINNEAPOLIS, Mn 55435
U.S.A.

10.6. Fours pour l'étalonnage de thermocouples

Thermocouple calibration furnaces

Heraeus GmbH
Postfach 169
6450 HANAU/MAIN
F.R. of Germany

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Institutul National de Metrologie
Sos. Vitan Birzesti 11
BUCAREST 5
Romania

Institut Métrologique Tchécoslovaque
Tr. L. Novomeského IV/487
842 55 BRATISLAVA
Czechoslovakia

(cont.)

Stanton Redcroft Ltd.
Copper Mill Lauc
LONDON SW 17 OBN
United Kingdom

Johnson Matthey and Co. Ltd
South Way
Exhibition Grounds
WEMBLEY, Middlesex
United Kingdom

Kaye Instruments Inc.
15 De Angelo Drive
BEDFORD, MA 01730
U.S.A.

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa. 19454
U.S.A.

10.7. Bains pneumatiques à sable

Pneumatic sand baths for calibration of thermometers

Isothermal Technology Ltd
Pine Grove
Southport
MERSEYSIDE PR9 9AG
United Kingdom

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

Techne (Cambridge) Ltd
Duxford
CAMBRIDGE CB2 4PZ
United Kingdom

Procedyne Corporation
221 Somerset Street
NEW BRUNSWICK, N.J. 08903
U.S.A.

10.8. Point de glace automatique

Automatic ice-point reference apparatus

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nish-Shinjuku-ku
TOKYO
Japan

Mectron (Frigistor) Ltd
480 Bath Road
SLOUGH, Bucks SL1 6BL
United Kingdom

Delristor Ltd
21 Windsor Street
UXBRIDGE, Middlesex
United Kingdom

Kaye Instruments Inc.
15 De Angelo Drive
BEDFORD, MA 01730
U.S.A.

10.9. Commutateurs pour thermocouples

Thermocouple switsches

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Tinsley and C. Ltd
Werndee Hall
South Norwood
LONDON S5 5S
United Kingdom

Cropico Ltd
Hampton Road
CROYDON, Surrey
United Kingdom

Leeds and Northrup
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

10.10. Potentiomètres de haute précision

Potentiometers, high resolution type

J L William Scientific Instruments
19 Willesden Road
Hughesdale
VICTORIA 3166
Australia

Guildline Instruments
P.O. Box 99
SMITH FALLS
Ontario K7A 4S9
Canada

Tettex AG
Rotbuchstrasse 45
ZURICH
Switzerland

Cropico Ltd
Hampton Road
CROYDON, Surrey
United Kingdom

H. Tinsley and Co. Ltd
Werndee Hall
South Norwood
LONDON SE25
United Kingdom

Leeds and Northrup Co.
Summeytown Pike
NORTH WALES, Pa 19454
U.S.A.

Julie Research Labs
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

10.11. Voltmètres numériques sensibles à 1 microvolt

High resolution digital voltmeters (sensitive to 1 microvolt or less)

Kombinat VEB Funkwerk Erfurt
Rudolfstrasse 47
501 ERFURT
German Dem. Rep.

Priborostroitelene Zavod
PRAVETZ 2161
Bulgaria

Guildline Instruments Inc.
P.O. Box 99
SMITH FALLS
Ontario K7A 4S9
Canada

Enertec-Schlumberger
12 place des Etats-Unis
B.P. 620
92542 MONTROUGE CEDEX
France

Yokogawa Electric Works Ltd
2-9-32 Nakacho
Musachino-shi
TOKYO 180
Japan

Datron Electronics Ltd
Hurricane Way
Norwich Airport
NORWICH NR6 6JB
United Kingdom

The Solartron Electronic Group
Victoria Road
FARNBOROUGH GU14 7PW
United Kingdom

John Fluke Mfg. Co
P.O. Box 43210
Mountlake Terrace
WASHINGTON 98043
U.S.A.

Hewlett-Packard Co
1501 Page Mill Road
PALO ALTO, Calif. 94304
U.S.A.

Data Precision Corp.
Andubon Road
WAKEFIELD, MA 01880
U.S.A.

Julie Research Labs
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

California Instruments
5150 Convoy Street
SAN DIEGO, CA 92111
U.S.A.

(cont.)

Keithley Instruments
28775 Aurora Road
CLEVELAND, Ohio 44139
U.S.A.

Systron-Donner
1 Systron Drive
CONCORD, CA 94518
U.S.A.

Racal-Dana Instruments, Inc.
18912 Von Karmin Avenue
IRVINE, CA 92713
U.S.A.

10.12. Pyromètres optiques convenant pour étalonnages
Optical pyrometers suitable as calibration instruments

Institut für Kerntechnik und
Energiewandlung
Holderbuschweg 52
7000 STUTTGART 80
F.R. of Germany

Schmidt und Haensch
Naumannstrasse 33
1000 BERLIN 62

Laboratorium voor Instrumentele
Electronica
Garenhof 2
NOORDWIJK
Holland

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Sinjuku-ku
TOKYO
Japan

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

Mashpriborintorg
Smolenskaia Sennaia 32/34
121200 MOSCOW
U.S.S.R.

10.13. Lampes étalons à ruban de tungstène pour l'étalonnage de pyromètres optiques
Calibrated tungsten ribbon lamps for calibration of optical pyrometers

Osram GmbH
Hellabrunner Strasse 1
8000 MÜNCHEN
F.R. of Germany

General Electric Ltd
Hirst Research Centre
East Lane
WEMBLEY, Middlesex
United Kingdom

10.14. Alimentation stabilisée en courant continu pour lampes étalons pyrométriques
DC current regulated power supplies with high resolution of adjustment
suitable for use with calibrated optical pyrometer lamps

Suppliers are numerous, a few examples :

Fa. Heinzinger
Happinger Strasse 71
D-8200 ROSENHEIM
F.R. of Germany

Pierre Fontaine
20 avenue Arago
91380 CHILLY-MAZARIN
France

Oltronix AB
Box 20085
S-161 20 BROMMA
Sweden

Hewlett Packard Co
1501 Page Mill Road
PALO ALTO, California 94304
U.S.A.

Kepeco Inc.
131-38 Sanford Avenue
Flushing
NY 11352
U.S.A.

10.15. Etalons de résistance pour utilisation avec lampes pyrométriques et voltmètres numériques (voir 12.12)

High stability standard resistors for use with tungsten ribbon lamps (connected as shunts to digital voltmeter)

See addresses under 12.12.

10.16. Sources pour l'étalonnage de pyromètres infrarouges

Radiation sources for calibration of infrared radiation pyrometers

Ultrakust-Gerätebau GmbH
Postfach 63
D-8375 RUHMANNSELDEN
F.R. of Germany

Chino Works, Ltd
Shinjuku-Nomura Bldg.
1-26-2 Nishi-Shinjuku-ku
TOKYO
Japan

Land Pyrometers Ltd
Wreakes Lane
Dronfield
Sheffield S18 6DJ
United Kingdom

The Eppley Laboratory Inc.
12 Sheffield Avenue
NEWPORT R.I. 02841
U.S.A.

10.17. Matériel optique d'observation

Optical observation equipment (telescopes, magnifiers) for thermometers and similar

J.D. Möller Optische Werke GmbH
Postfach 280
2000 WEDEL bei Hamburg
F.R. of Germany

Spindler and Hoyer GmbH
Postfach 122
D-3400 GOTTINGEN
F.R. of Germany

Ealing Corporation
2225 Massachusetts Ave.
CAMBRIDGE, MA 02140
U.S.A.

10.18. Accessoires pour étalonnage de thermomètres (tubes céramiques, etc.)

Accessories for thermometer calibration (ceramic tubing, heating wire, thermocouples, etc.)

Degussa AG
Postfach 2644
D-6000 FRANKFURT 1
F.R. of Germany

W.C. Heraeus GmbH
Postfach 169
D-6450 HANAU
F.R. of Germany

Bulten-Kanthal S.A.
Rue Buisson des Loups 10
Parc Industriel
1400 NIVELLES
Belgium

11. EQUIPEMENT D'ETALONNAGE EN ELECTRICITE

ELECTRICAL CALIBRATION EQUIPMENT

Suppliers, in particular of electronic or "active" calibration equipment are numerous and it is in this field difficult to make a limited directory and keep it up to date.

Classical "passive" equipment such as class 0.1 analog meters, potentiometers etc. as required by industrial and local legal metrology laboratories are becoming scarce and may be difficult to locate as one manufacturer after the other give up due to high cost of specialized craftsmanship and low demand.

We warmly recommend the interested metrology services in case of difficulties in procurements to take contact with the electrical laboratories of the specialized national laboratories to locate suppliers and follow-up the trends.

We are listing below some of the more known suppliers of both types of equipment.

Equipement du type "passif"

"PASSIVE TYPE OF CALIBRATION EQUIPMENT

11.1. Enceintes thermostatées, étalons de tension

Thermostated Weston Cell enclosures

Elmeasco Instruments
15 Mac Donald Street
MORTLAKE, N.S.W. 2137
Australia

H. Tinsley and Co. Ltd
Werndee Hall
South Norwood
LONDON SE25 5LA
United Kingdom

The Eppley Laboratories, Inc.
12 Sheffield Avenue
NEWPORT, RI 02840
U.S.A.

Julie Research Labs
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

Guildline Instruments
P.O. Box 99
SMITH FALLS
Ontario K7A 4S9
Canada

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

James G. Biddle Company
Township Line and Jolly Roads
PLYMOUTH MEETING, Pa 19462
U.S.A.

Etalons de tension à semi-conducteur Semi-conductor voltage references :

J.L. William Scientific Instruments
19 Willesden Road
Hughesdale
VICTORIA 3166
Australia

Cropico Ltd
Hampton Road
CROYDON, Surrey
United Kingdom

11.2. Etalons de résistance, type référence primaire

Primary reference standards of resistance

1 ohm and 10 000 ohm

Yokogawa Electric Works Ltd
2-9 Nakacho
Musashino-shi
TOKYO 180
Japan

Tettex AG
Rotbuchstrasse 45
CH-8042 ZÜRICH
Switzerland

Leeds and Northrup Co.
Sumneytown Pike
NORTH WALES, Pa 19454
U.S.A.

10 000 ohm

Electro Scientific Industries Inc.
13900 N.W. Science Park Drive
PORTLAND, Oregon 97229
U.S.A.

General Radio Co.
300 Baker Avenue
CONCORD, Ma 01742
U.S.A.

Julie Research Labs
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

11.3. Etalons de référence de capacité

Reference standards of capacitance

Tettex S.A.
Rotbuchstrasse 45
ZURICH
Switzerland

General Radio Co.
300 Baker Avenue
CONCORD, Ma 01742
U.S.A.

ESI
14000 N.W. Science Park Drive
PORTLAND, Oregon 97229
U.S.A.

11.4. Potentiomètres, ponts, étalons de résistance, diviseurs de tension, boîtes de shunt, détecteurs, etc.

Potentiometers, resistance bridges, secondary resistance standards, voltage dividers, shunt boxes, null detectors, etc.

Burster Präzisionsmesstechnik
Talstrasse 7
7562 GERNSBACH
F.R. of Germany

Hartmann and Braun
Gräfstrasse 97
6000 FRANKFURT
F.R. of Germany

VEB Messtechnik Mellenbach
6428 MELLENBACH/Thör.
German Dem. Rep.

J L William Scientific Instruments
19 Willesden Road
Hughesdale
VICTORIA 3166
Australia

Priborostroitelene Zavod
PRAVETZ 2161
Bulgaria

Guildline Instruments
P.O. Box 99
SMITH FALLS, Ontario K7A 4S9
Canada

Yokogawa Electric Works Ltd
2-9 Nakacho
Musashino-shi
TOKYO 180
Japan

Institutul National de Metrologie
Sos. Vitan Birzesti 11
BUCAREST 5
Romania

Tettex AG
Rotbuchstrasse 45
ZURICH
Switzerland

Cropico Ltd
Hampton Road
CROYDON, Surrey
United Kingdom

H. Tinsley
Werndee Hall
South Norwood
LONDON SE25 5LA
United Kingdom

J.J. Lloyd Instruments Ltd
Brook Avenue
Warsash
SOUTHAMPTON SO3 6HP
United Kingdom

EM Electronics Ltd
6, Farbailey Close
CHESTER CH4 7QH
United Kingdom

Welvyn Electric Ltd
Bedlington
NORTHWEMBERLAND NE 22 JAA
United Kingdom

Leeds and Northrup Co.
Summeytown Pike
NORTH WALES, Pa 19454
U.S.A.

Keithley Instruments Inc.
28775 Aurora Road
CLEVELAND, Ohio 44139
U.S.A.

Electro Scientific Industries Inc.
13900 N.W. Science Park Drive
PORTLAND, Oregon 97229
U.S.A.

Julie Research Laboratories
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

James G. Biddle Company
Township Line and Jolly Roads
PLYMOUTH MEETING, Pa 19462
U.S.A.

General Resistance Company
75 Haven Avenue
MOUNT VERNON, N.Y. 10553
U.S.A.

11.5. Instruments analogiques classe 0,1 et 0,2

Class 0.1 and class 0.2 indicating analog voltmeters, amperemeters and wattmeters suitable for calibrating AC/DC meters

Hartmann and Braun AG
Gräfstrasse 97
6000 FRANKFURT 90
F.R. of Germany

Goerz Elektro AG
5 Sonnleithnergasse
A-1101 WIEN
Austria

Norma Messtechnik, Optik,
Elektronik GmbH
Eumigweg 7
A-2351 WIENER NEUDORF
Austria

Ganz Műszerv Művek
Vöröshadsevey utja 64
BUDAPEST XIX
Hungary

Yokagawa Electric Works Ltd
2-9 Nakacho
Musashino-shi
TOKYO 180
Japan

11.6. Equipement d'étalonnage de transformateurs de mesure

Instrument transformer standards and calibration equipment

Messwandler-Bau GmbH
Nürnberger Strasse 199
8600 BAMBERG
F.R. of Germany

Norma Messtechnik, Optik, Elektronik GmbH
Eumigweg 7
A-2351 WIENER NEUDORF
Austria

Helbo - Elektronik und Regelungstechnik
A-4713 GALLSPACH
Austria

Dr.-Ing. Hans Ritz
Messwandler GmbH
A-4614 MARCHTRENK
Austria

Österreichische Messwandlerbau GmbH
Postfach 20
A-4713 GALLSPACH
Austria

Zavod za transformatori
bd Iliensko chaussée
1771 SOFIA
Bulgaria

Guildline Instruments Inc.
P.O. Box 99
SMITH FALLS, Ontario K7A 4S9
Canada

Institutul de Metrologie
Sos. Vitan Birzesti 11
BUCAREST 5
Romania

Haefeli & Cie AG
Lehenmattstrasse 353
CH-4052 BASEL
Switzerland

Tettex AG
Rotbuchstrasse 45
ZURICH
Switzerland

H. Tinsley and Co. Ltd
Werndee Hall
South Norwood
LONDON SE25 5LA
United Kingdom

Elektrotehnicki institut "Nikola Tesla"
11000 BEOGRAD
Viktora Igoa 3
Yugoslavia

Institut "Rade Končar"
41000 ZAGREB
Baštijanova bb
Yugoslavia

11.7. Installations d'étalonnage de compteurs d'énergie électrique

Electrical energy meter calibration equipment

Hamburger Elektronik Gesellschaft GmbH Bachstrasse 9-17 2000 HAMBURG 76 F.R. of Germany	Zera Postfach 1160 5330 KÖNIGSWINTER 1 F.R. of Germany
EMH Energie-Messtechnik-Hamburg GmbH Zum Förstenmoor 11 2100 HAMBURG 90 F.R. of Germany	Siemens A.G. Postfach 21 10 80 7500 KARLSRUHE 21 F.R. of Germany
Paton Electrical Pty Ltd 90 Victoria Street Ashfield NSW 2131 Australia	Norma Messtechnik, Optik, Elektronik GmbH Eumigweg 7 A-2351 WIENER NEUDORF Austria
Sangamo Canada Ltd 215, Laird Drive Toronto, Ontario Canada M4G 3X1	Multi-Amp. Canada Ltd 445, Finchdene Square Scarborough, Ontario Canada M1X 1B7
Enertec Schlumberger 12, place des États-Unis 92542 MONTROUGE Cedex France	Ganz Műszer Művek Vöröshadsereg utja 64 BUDAPEST XIX Hungary
Landis and Gyr S.A. 6300 ZUG Switzerland	Iskra Savska Loka 4 64000 KRANJ Yugoslavia
Institut "Mihailo Pupin" 11000 BEOGRAD Volgina 15 Yugoslavia	

11.8. Equipement de transfert courant alternatif/courant continu

AC/DC Transfer equipment for voltage and current (using thermal converters)

VEB Messtechnik Mellenbach 6428 MELLENBACH German Dem. Rep.	Guildline Instruments P.O. Box 99 SMITH FALLS, Ontario K7A 4S9 Canada
Institutul National de Metrologie Sos. Vitan Birzesti 11 BUCAREST 5 Romania	CPD Engineering (formerly HOLT Instruments) 126 Mott Street OCONTO, Wi 54153 U.S.A.
John Fluke Mfg. 60 P.O. Box 43210 Mountlake Terrace WASHINGTON 98043 U.S.A.	Ballantine Labs 90 Fanny Road Box 97 BOONTON, N.J. 07005 U.S.A.
Julie Research Labs 211 W. 61st Street NEW YORK, N.Y. 10023 U.S.A.	

11.9. Wattmètres électroniques (étalonnables en courant continu)

AC/DC Wattmeter transfer equipment (electronic)

Hamburger Elektronik Gesellschaft GmbH Bachstrasse 9 - 17 2000 HAMBURG 76 F.R. of Germany	Zera Postfach 1160 5330 KÖNIGSWINTER 1 F.R. of Germany
Norma Messtechnik, Optik, Elektronik GmbH Eumigweg 7 A-2351 WIENER NEUDORF Austria	Guildline Instruments P.O. Box 99 SMITZ FALLS, Ontario K7A 4S9 Canada
Landis & Gyr S.A. 6300 ZUG Switzerland	Ballantine Labs 90 Fanny Road Box 97 BOONTON, N.J. 07005 U.S.A.
Institut "Mihailo Pupin" Volgina 15 11000 BEOGRAD Yugoslavia	Iskra - Podnart 64244 OTOČE Yugoslavia

11.10. Equipement d'étalonnage à basse fréquence de capacité,
inductance et impédance

Low-frequency high accuracy capacitance, inductance and impedance
calibration equipment including standards

Tettex AG Rotbuchstrasse 45 CH-8042 ZÜRICH Switzerland	Institutul National de Metrologie Sos. Vitan Birzesti nr 11 75669 BUCAREST Romania
H.W. Sullivan Division of AVO Limited Archliffe Road DOVER, Kent United Kingdom	General Radio Co. 300 Baker Avenue CONCORD, Ma 01742 U.S.A.
Gertsch Singer Instrumentation 5340 Alla Road LOS ANGELES, CA 90066 U.S.A.	ESI 14000 N.W. Science Park Drive PORTLAND, OR 97229 U.S.A.
Dytronics 4800 Evanswood Drive COLUMBUS, OH 43229 U.S.A.	Boonton Electronics Corp. Rt 287 at Smith Road PARSIPPANY, N.J. 07054 U.S.A.
	Hewlett Packard Co 1501 Page Mill Road PALO ALTO, California 94304 U.S.A.

Equipement d'étalonnage du type "actif"

"ACTIVE" (or electronic) CALIBRATION EQUIPMENT

(For procurements pay attention to mains frequency, maintenance and calibration requirements)

11.11. Sources étalons de tension en courant continu et alternatif

DC and AC calibrated voltage and current sources (calibrators)

Heinzinger
Happinger Str. 71
D-8200 ROSENHEIM
F.R. of Germany

Zera
Postfach 1160
D-5330 KÖNIGSWINTER 1
F.R. of Germany

Paton Electrical Pty Ltd
90 Victoria Street
ASHFIELD, NSW 2131
Australia

Adret Electronique
12 Avenue Vladimir Komarov
B.P. N° 33
78192 TRAPPES
France

Yokogawa Electric Works Ltd
2-9 Nakacho
Musashino-shi
TOKYO 180
Japan

Datron Instruments
Hurricane Way Norwich Airport
NORWICH NR6 6JB
United Kingdom

John Fluke Mfg Co
P.O. Box 43210
Mountlake Terrace
WASHINGTON 98043
U.S.A.

Hewlett Packard Co
1501 Page Mill Road
PALO ALTO, California 94304
U.S.A.

Julie Research Laboratories
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

Keithley Instruments Inc.
28775 Aurora Road
CLEVELAND, Ohio 44139
U.S.A.

Rotek Instrument Corp.
40 Guinan Street
WALTHAM, Ma 02154
U.S.A.

Electronic Development Corp.
11 Hamlin Street
BOSTON, Ma 02127
U.S.A.

Valhalla Scientific Inc.
7707 Convoy Court
SAN DIEGO, CA 92111
U.S.A.

General Resistance Inc.
75 Haven Avenue
MOUNT VERNON, N.Y. 10553
U.S.A.

Berkley Instruments, Inc.
1701 Reynolds
SANTA ANNA, CA 92705
U.S.A.

Wavetek
P.O. Box 651
SAN DIEGO, CA 92112
U.S.A.

RFL Industries
BOONTON, N.J. 07005
U.S.A.

11.12. Voltmètres numériques, voir 10.11 et 11.11

Digital voltmeters and printers of high resolution suitable for calibration set-ups

The suppliers are largely the same as for points 10.11. (temperature calibration) and 11.11. plus

Prema
Robert-Koch-Str. 10
D-6500 MAINZ 42
F.R. of Germany

Priporostroitelène zavod
PRAVETZ-2161
Bulgaria

12. EQUIPEMENT D'ETALONNAGE EN PHOTOMETRIE

PHOTOMETRY CALIBRATION EQUIPMENT

12.2. Lampes étalons

Standard lamps (and irradiance standards)

Osram GmbH
Hellabrunner Strasse 1
D-8000 MÜNCHEN 90
F.R. of Germany

Hoffman Engineering Corporation
183 Sound Beach Avenue
P.O. Box 300
OLD GREENWICH, Conn. 06870
U.S.A.

General Electric Company
(attention Mr E.B. Power)
Hirst Research Centre
East Lane
WEMBLEY, Middlesex
United Kingdom

Optronic Labs Inc.
730 Central Florida Parkway
ORLANDO, Florida 32809
U.S.A.

12.2. Sphères d'intégration

Ulbricht's integrating spheres (diameter > 1 m) and accessories

Schmidt and Haensch GmbH
Naumannstrasse 33
1000 BERLIN 62

Lichtmesstechnik
Helmholtzstrasse 9
1000 BERLIN 10

PRC Krochmann
Geneststrasse 6
1000 BERLIN 62

Goniomètres intégrateurs

Integrating goniometers

ATB, Aktiengesellschaft für technische Beleuchtung
CH-8952 SCHLIEREN
Switzerland

12.3. Photomètres numériques corrigés à la vision de l'observateur normal
Digital photometers, luminancemeters and colorimeters,
filter-corrected to eye vision

Osrám GmbH
Hellabrunner Strasse 1
8000 MÜNCHEN 90
F.R. of Germany

Lichtmesstechnik
Helmholzstrasse 2-9
1000 BERLIN 10

PRC Krochmann
Geneststrasse 6
1000 BERLIN 62

Optronik GmbH
Kurfürstenstrasse 84
1000 BERLIN 30

Macam Photometrics Ltd
10 Kelvin Square
LIVINGSTON EH54 5DG
Scotland
United Kingdom

EG and G Electro-optics division
35 Congress Street
SALEM, Mass. 01970
U.S.A.

Optronic Labs Inc.
730 Central Florida Parkway
ORLANDO, Florida 32809
U.S.A.

12.4. Téléphotomètres corrigés à la vision de l'observateur normal
Telephotometers, filter-corrected to eye vision (for directional
measurements on headlights, reflection materials, etc.)

Alphametrics Ltd
532 Berry Street
WINNIPEG R3H OR9
Canada

Minolta Camera Co. Ltd
30, 2-chome
Azuchi Machi
Higashi-ku
OSAKA 541
Japan

B Hagner AB
Box 247
17120 SOLNA
Sweden

Photo Research
3000 N. Hollywood Way
BURBANK, Calif. 91505
U.S.A.

EG & Gamma Scientific
3777 Ruffin Road
SAN DIEGO, Calif. 92123
U.S.A.

12.5. Bancs optiques pour la photométrie
Optical benches and accessories suitable for photometry

Spindler and Hoyer GmbH
Postfach 122
D-3400 GÖTTINGEN
F.R. of Germany

Physik Instrumente
Siemensstrasse
Postfach 1140
7517 WALDBRONN
F.R. of Germany

Micro Controle
Z.I. St-Guénault
Rue Jean Mermoz
BP. 144
91005 EVRY Cedex
France

Soro Electro-optics
26 rue Berthollet
94110 ARCUEIL
France

(cont.)

Ealing Corporation
2225 Massachusetts Avenue
CAMBRIDGE, MA 02140
U.S.A.

Newport Corporation
PO Box 8020
FOUNTAIN VALLEY, CA 92728
U.S.A.

Oriel
15 Market Street
STAMFORD, Conn. 06902
U.S.A.

12.6. Alimentation régulée de tension continue pour alimentation des lampes

Direct current regulated voltage supplies (with high adjustment resolution, specify output voltage, current and mains frequency)

F HG Elektronik GmbH
Florianstrasse 2
8200 ROSENHEIM-LANGENPFUND
F.R. of Germany

Fa. Heinzinger
Happingerstrasse 71
8200 ROSENHEIM
F.R. of Germany

Pierre Fontaine Electronique
20 Avenue Arago
91380 CHILLY-MAZARIN
France

Drusch et Cie
62 rue Gallieni
92500 RUEIL MALMAISON
France

Lambda Electronique S.A.
Route de Grivery
Gometz-le-Château
91403 ORSAY
France

Witmer AG
Seestrasse 141
CH-8703 ERLNBACH
Switzerland

Philips
EINDHOVEN
Netherlands

Wallis Electronics Ltd
Decoy Road
Dominion Way
WORTHING, Sussex
United Kingdom

Kepco Inc.
131-38 Sanford Avenue
FLUSHING, NY 11352
U.S.A.

Spellman High Voltage Electronics Corp.
7 Fairchild Avenue
Plainview
NEW YORK
U.S.A.

Hewlett Packard Co.
1501 Page Mill Road
PALO ALTO, Calif. 94304
U.S.A.

12.7. Alimentation régulée de tension alternative à faible distorsion

Alternating current electronically regulated voltage supplies
(suitable for use in calibrations of fluorescent lamps -
specify mains frequency, and distorsion to be less than 3%)

50 Hz supplies :

Zera Electric GmbH
Hauptstrasse 392
Postfach 1160
5330 KÖNIGSWINTER 1
F.R. of Germany

Wandel and Goltermann
Postfach 45
7412 ENINGEN u. A.
F.R. of Germany

(cont.)

Philips
EINDHOVEN
Netherlands

Sorensen AG
Hallbartenstrasse 54
CH-5430 WETTINGEN
Switzerland

12.8. Ballasts étalons pour lampes fluorescentes

Calibrated ballasts for fluorescent lamps (specified voltage, frequency and wattage of lamps to be calibrated)

Brown Boveri AG
Postfach 351
6800 MANNHEIM 1
F.R. of Germany

Philips
EINDHOVEN
Netherlands

12.9. Voltmètres numériques à conversion quadratique pour la mesure en valeur efficace de tensions alternatives des lampes

Digital electronic voltmeters suitable for measurement of voltage of incandescent and fluorescent lamps

(5-digit multirange models 0.1 to at least 500 V full scale in DC and 1 to at least 500 V full scale in AC with full rms-conversion)

Datron Electronics Ltd
Hurricane Way
Norwich Airport
NORWICH NR6 6JB
United Kingdom

John Fluke Mfg. Co
P.O. Box 43210
Mountlake Terrace
WASHINGTON 98043
U.S.A.

Hewlett-Packard Co.
1501 Page Mill Road
PALO ALTO, Calif. 94304
U.S.A.

Data Precision Corp.
Andubon Road
WAKEFIELD, MA 01880
U.S.A.

Keithley Instruments
28775 Aurora Road
CLEVELAND, OH 44139
U.S.A.

12.10. Wattmètres électroniques à faible consommation

Digital electronic wattmeter of low consumption for use in calibrations of fluorescent lamps

Norma Messtechnik, Optik, Elektronik GmbH
Eumigweg 7
A-2351 WIENER NEUDORF
Austria

Yokogawa Electric Works Ltd
2-9 Nakacho
Musashino-shi
TOKYO 180
Japan

Landis & Gyr S.A.
CH-6300 ZUG
Switzerland

Institut "Mihailo Pupin"
11000 BEOGRAD
Volgina 15
Yugoslavia

12.11. Instruments de mesure analogiques à réponse en valeur efficace et faible consommation, utilisés comme alternatives à 12.9. et 12.10.

Direct indicating AC/DC analogue precision measuring sets of voltage, current and power fully rms responding for use in calibrations of fluorescent lamps (as alternatives to item 12.10 and AC-part of 12.9).

Hartmann and Braun AG
Gräfstrasse 97
6000 FRANKFURT 90
R.F. of Germany

Goerz Elektro AG
5 Sonnleithnergasse
A-1101 WIEN
Austria

Norma Messtechnik, Optik, Elektronik
Eumigweg 7
A-2351 WIENER NEUDORF
Austria

Ganz Műszerv Művek
Vöröshadsevey utja 64
BUDAPEST XIX
Hungary

Yokagawa Electric Works Ltd
2-9 Nakacho
Musashino-shi
TOKYO 180
Japan

12.12. Résistances étalons utilisées comme shunts pour la mesure du courant de lampes à l'aide d'un voltmètre digital

Four-thermal standard resistors for use as shunts in current measurement on lamps

(with high voltage output so as to be suitable for use with digital voltmeters in both DC and low-frequency AC)

Rother u. Bauer GmbH
Zimmermannstrasse 23
1000 BERLIN 41

Guildline Instruments
P.O. Box 99
SMITH FALLS, Ontario K7A 4S9
Canada

Tettex AG
Rotbuchstrasse 45
CH-8042 ZÜRICH
Switzerland

H. Tinsley and Co. Ltd
Werndee Hall
South Norwood
LONDON SE25
United Kingdom

Leeds and Northrup Co
Summeydown Pike
NORTH WALES, Pa 19454
U.S.A.

Julie Research Laboratories Inc.
211 W. 61st Street
NEW YORK, N.Y. 10023
U.S.A.

13. BLOCS D'ETALONNAGE DE DURETE

HARDNESS CALIBRATION BLOCKS

Certified hardness blocks can be supplied by

Amsler- Otto Wolpert-Werke GmbH
Postfach
D-6700 LUDWIGSHAFEN/Rh.
F.R. of Germany

Ernst Leitz, Wetzlar GmbH
Postfach 2020
D-6330 WETZLAR 1
F.R. of Germany

Georg Reicherter GmbH
Rechbergstrasse 42
D-7306 DENKENDORF
F.R. of Germany

Hahn & Kolb, Abt. 6
Postfach 333
D-7000 STUTTGART 1
F.R. of Germany

Karl Frank GmbH
Postfach 149
D-6800 MANNHEIM-RHEINAU
F.R. of Germany

Krautkrämer GmbH
Postfach 1164
D-5030 HÜRTH 5
F.R. of Germany

Zwick + Co. KG.
Postfach 4350
D-7900 ULM
F.R. of Germany

VEB Werkzeugfabrik
DDR-6824 KÖNIGSEE
Thüringen
German Dem. Rep.

Ets C.F. Escoffier
Parc d'activités de la Route des Lacs
BP 287
27100 VAL DE REUIL
France

Japan Bearing Inspection Institute
2-25-3 Nishi-Shinbashi
Minato-ku
TOKYO
Japan

Yamamoto Scientific Tool Laboratory
Co. Ltd
2-15-4, Sakae-cho, Funabashi
CHIBA
Japan

United Testing Systems, Inc.
2165 Avon Industrial Drive
Auburn Heights, Michigan 48057
U.S.A.

Vickers Ltd.
Engineering Group
Crayford Works
CRAYFORD, Kent DA1 4AX
United Kingdom

Rockwell Testers Ltd
Sandy Lane
Stourport-on-Severn
Worcestershire
United Kingdom

Avery-Denison Ltd
Moor Road
Leeds LS10 2DE
United Kingdom

Engineering & Scientific Equipment Ltd
22-26 Mount Pleasant
Alperton
WEMBLEY, Middlesex HA0 1TV
United Kingdom

Pénétrateurs à diamant

Diamond cone and diamond pyramid indenters

Diamant-Friel
Liesinger Flur-Gasse 4
A-1235 WIEN
Austria

Fa. Audia, Diamantwerkzeuge
Laaber-Strasse 65
A-2384 BREITENFURT
Austria

(cont.)

Osaka Diamond
80, 2-cho
Otorikata - Machi
SAKAI
Japan

Star Industrial Tools Ltd
Mechanical Measurements Laboratory
42 Westfield Road
Kings Heath
Birmingham B14 7ST
United Kingdom

14. VERIFICATION D'INSTRUMENTS DE MESURE POUR VEHICULES

VERIFICATION OF MEASURING INSTRUMENTS FOR VEHICLES

Kienzle Apparate GmbH
Postfach 1650
D-7730 VILLINGEN
F.R. of Germany

Stiller Electronic
Hummelstr. 96
D-8510 FÜRTH
F.R. of Germany

V D O
Gräfstr. 103
D-6000 FRANKFURT
F.R. of Germany

Fa. Schenck AG
Postfach 4018
D-6100 DARMSTADT
F.R. of Germany

Jaeger
2 rue Baudin
92300 LEVALLOIS-PERRET
France

Gatsometer B.V.
Postbus 9
2050 AA OVERVEEN
Holland

Nishibe Keiki Mfg. Co. Ltd
1-16-5 Omori Nishi
Ohta-ku
TOKYO
Japan

15. DOSIMETRIE DE RADIATIONS

RADIATION DOSIMETRY

Physikalisch-Technische Werkstätten
/Dr. P. Pychlau/
D-7800 FREIBURG
Lörracher Str. 7
F.R. of Germany

VEB Robotron
Messelektronik "Otto Schön"
P.O. Box 211
DDR-8012 DRESDEN
German Dem. Rep.

Österreichische Forschungszentrum
Seibersdorf
Lenaugasse 10
A-1080 WIEN
Austria

Laboratoire de Métrologie de Rayonnements
Ionisants
Boîte postale 21
91190 GIF SUR YVETTE
France

Office national des mesures
/Országos Mérésügyi Hivatal/
H-1124 BUDAPEST
Németvölgyi ut 37-39
Hungary

Nuclear Enterprises Ltd
Bath Road, Beenham
READING, RG7 5PR
United Kingdom

Vinten Instruments Ltd
Jessamy Road
WEYBRIDGE, Surrey KT13 8LE
United Kingdom

(cont.)

The Victoreen Instrument Company
10101 Woodland Avenue
CLEVELAND, Ohio 44104
U.S.A.

Institut "Boris Kidrič" - Vinča
p.p. 522
11001 BEOGRAD
Yugoslavia

Institut "Jožef Stefan"
61000 LJUBLJANA
Jamova 39
Yugoslavia

16. TEMPS et FREQUENCE

TIME and FREQUENCY

Rohde & Schwarz
Mühlendorfstrasse 15
D-8000 MÜNCHEN 80
F.R. of Germany

Oscilloquartz SA
CH-2002 NEUCHÂTEL 2
Switzerland

Efratom Division
18851 Bardeen Avenue
IRVINE, California 92715
U.S.A.

Frequency and Time Systems, Inc.
34 Tozer Road
BEVERLY, MA 01915
U.S.A.

Hewlett-Packard Company
3000 Hanover Street
PALO ALTO, California 94304
U.S.A.

17. EQUIPEMENT pour la VERIFICATION des PRODUITS PREEMBALLÉS

EQUIPEMENT FOR CONTROL OF PREPACKAGES

17.1. Balances électroniques avec dispositifs de calcul et enregistrement Electronic balances with computing and recording devices

See suppliers under 3.2.

17.2. Mesures de volume spécialement fabriquées pour la vérification du volume de liquides des préemballés

Specially manufactured volume measures for prepackages control

Boterdael en Zonen, p.v.b.a.
Steenweg op Mechelen 660
1800 VILVOORDE
Belgium

VEL, N.V.
Geldenaaksebaan 464
3030 LEUVEN
Belgium

Pulles en Hanique B.V.
Brussellaan 1
5628 TA EINDHOVEN
Holland

Laborglas B.V.
Stephensonstraat 45
2014 KC HAARLEM
Holland

17.3. Gabarits gradués pour la mesure de niveaux de bouteilles
Templets for checking bottle contents

Boers en Co
Postbus 67
3100 AB SCHIEDAM
Holland

W. Reeves & Co. Ltd
Lombard Road
MERTON S.W.19 3UU

17.4. Aréomètres électroniques
Electronic density motors

Fa Anton Paar
Kärntnerstrasse 322
Postfach 58
A-8054 GRAZ-Strassgang
Austria

17.5. Pycnomètres résistants à la pression pour aérosols
Pressure proof pycnometers for aerosols

Willi Mäder AG
CH-8808 PFÄFFIKON/SZ
Switzerland

17.6. Equipement général pour la vérification des préemballages
General equipment for prepackage control

John Reid & Sons Ltd
6450, St-James Street West
MONTREAL, Quebec
Canada
H4B 1T6

18. POINCONS DE VERIFICATION et OUTILLAGE DE PLOMBAGE

VERIFICATION STAMPS, PUNCHES, MARKING and SEALING TOOLS

Many countries are able to supply such equipment. We are below giving only a few suppliers of such equipment from records presently available at BIML.

F.R. of Germany

Ernst Beu
Postfach 15 0134
Brüderstrasse 28
D-5650 SOLINGEN 15

Belgium

Streel S.A.
Rue Bonne Nouvelle 55
4000 LIEGE

Absil
Rue des Carmes 63
5000 NAMUR

(cont.)

France

Official stamps (poinçons officiels)

Administration des Monnaies et Médailles
11 quai de Conti
75270 PARIS Cedex 06

Tools, pincers, etc (outillage)

Ets Morin
14 rue du Vert-Bois
75003 PARIS

Holland

Rijksmunt
Leidseweg 90
UTRECHT

Fa. Biesheuvel
Prof. Asserlaan 22
VOORSCHOTEN

Suisse

Guellex Söhne
8115 HUTTIKON

Copper stamps for wood (bois)

R. Witschi
Haldenweg 31
3400 BURGDORF

United Kingdom

Frederick Follows Ltd
48 Ward Street
BIRMINGHAM B19 3TD

Mellor and Waring Ltd
383 Pennistone Road
SHEFFIELD S6 2FL

19. SOCIETES D'EXPORTATION DE MATERIAL DE VERIFICATION EN GENERAL
EXPORT FIRMS ABLE TO QUOTE FOR SUPPLIES OF VERIFICATION EQUIPMENT

The firms below are known to have supplied special verification equipment for length, mass and volume as export agents. (Requests for quotation from such suppliers have generally to be accompanied by detailed specifications).

Manfried Zierath
Vertrieb von Messgeräten
Import-Export
Im Gettelhagen 4
D-3300 BRAUNSCHWEIG
F.R. of Germany

Isotimpex
ul. Tchapaev No.51
SOFIA
Bulgaria

Anciens Ets Vial
4 bis, rue Asseline
75014 PARIS
France

Machinoexport
ul. Aksakov No.5
SOFIA
Bulgaria

Electroimpex
ul. Washington No.17
SOFIA
Bulgaria

VTO Technika
bd. Lénine 125 b1.2
SOFIA
Bulgaria

(cont.)

Avery Export Limited
Smethwick
WARLEY, West Midlands B66 2LP
United Kingdom

Mashpriborintorg
Smolenskaia Sennaia 32/34
121200 MOSCOW
U.S.S.R.

20. REPERTOIRES DE FABRICANTS D'INSTRUMENTS DE MESURE

DIRECTORIES OF MEASURING INSTRUMENTS

We give below some indications as where to find directories of measuring instruments in general including both instruments of common use and special calibration equipment.

F.R. of Germany

Verzeichnis von Herstellern und
Lieferanten von Messgeräten
(List of Manufacturers and Suppliers
of Measuring Instruments)
by A. Vellingiri - Juni 1978

Edited by
PTB
Bundesallee 100
3300 BRAUNSCHWEIG

Interkamaexhibition catalogue

Edited by
Düsseldorfer Messgesellschaft GmbH
Postfach 320203
4000 DÜSSELDORF

Internationaler Waagen-katalog
(International catalogue of scales
and weighing machines)
2nd ed. 1978

Edited by
ITW-Verlag
Postfach 34
734 GEISLINGEN/STEIGE

German Dem. Rep.

Interetalonpribor
Katalog
DDR - Referenznormale

General catalogue of calibration
equipment obtainable through ASMW,
Fürstenwalder Damm 388
1162 BERLIN

Belgium

Exhibition Catalogue
"Instrurama-Euromation"

Edited by
UDIAS
Avenue Slegers 203
1200 BRUXELLES

Répertoire UDIAS

Edited by
UDIAS
Avenue Slegers 203
1200 BRUXELLES

(cont.)

France

Guide de la mesure, de la régulation
et de l'automatisme

Edité par la Compagnie Française
d'Information pour les Entreprises
40 rue du Colisée
75381 PARIS Cedex 08

Catalogue d'exposition MESUCORA

Association MESUCORA
20 rue Hamelin
75116 PARIS

Annuaire du SYNAME

Syndicat National de la Mesure
électrique et électronique
20 rue Hamelin
75116 PARIS

Annuaire du MHP (Syndicat de la Mécanique de la haute précision)
et du SGOIP (Syndicat général de l'optique et des instruments de précision)

15 rue Beaujon
75008 PARIS

Japan

Japanese Measuring Instruments
(Only mechanical measuring instruments
included)

Edited by
Japan Measuring Instruments Federation
25-1 Nando-cho, Shinjuku-ku
TOKYO

Precision Measuring Instruments
and Machines Guide Book

Edited by
Japan Precision Measuring
Instruments Association
1-20-3 Nihonbashi- Chuo-ku
TOKYO

Guide Book of Japanese Optical
Precision Instruments

Edited by
Japan Optical Industry Association
Kikai Shinko Bldg.
3-5-8 Shibakoen, Minato-ku
TOKYO

Netherlands

Ministerie van Economische Zaken
Directie Dienst EVD
Bezuidenhoutseweg 151
2594 AG DEN HAAG

F.M.E.
Afdeling produktinformatie
Postbus 190
2700 AD ZOETERMEER

Romania

The Institute of Metrology of Bucarest manufactures advanced calibration,
equipment mainly for electrical measurements and thermometry, a complete
catalogue may be obtained from

Institutul de Metrologie
Sos. Vitan Birzesti 11
BUCAREST 5

(cont.)

Suisse

Swiss Export Products and Services
Directory

by Swiss Office for the Development
of Trade
Dept. H
P.O. Box ..
CH-8035 Zürich

United Kingdom

UK Kompass
Scientific and Industrial Instruments

Edited by
Kompass Publishers Ltd
Windsor Court
East Grinstead House
West Sussex RH19 1XD

SIMA
Members Product Guide

Edited by
Scientific Instrument
Manufacturers Association
Leicester House
Leicester Street
London WC2H 7BN

Directory of Products and Services

CTMA Metrology Section
24, White Hart Street
High Wycombe
Bucks HP11 2ML

Specific individual information may also be obtained from :
(usually through subscription)

Siraid
Sira Institute Ltd
South Hill
Chislehurst, Kent BR7 5EH
England

(Sira also provide for test
facilities especially for
industrial measurement and
control equipment)

U.S.A.

Measurement Instrumentation
part III - Survey of the Industry -
A study of the National Measurement
System
by R.C. Sangster - Jan. 1979

This memorandum contains practically
all addresses to instrument suppliers
and manufacturers in the USA. It is
not an official publication but
enquiries may be addressed to
the Office of the Director
NBS/Boulder Labs
National Bureau of Standards
Boulder, Colorado 80302

ISA Directory of Instrumentation

Edited by
ISA
Box 122 77
Research Triangle Park
N.C. 27709

(Buyer's guides are also published from time to time by other technical
magazines such as Weighing and Measurement, Electronics, etc.)

(cont.)

U.S.S.R.

Interetalonpribor catalogue

General catalogue of calibration
equipment used in the CMEA (Comecon)
countries and obtainable through
Gosstandart or from Mashpriborintorg
Smolenskaia Sennaia 32/34
121200 Moscow

FOURNISSEURS DE POIDS EN FONTE

SUPPLIERS OF CAST IRON WEIGHTS TO OIML (or other) SPECIFICATIONS

F.R. of Germany

Gottl. Kern and Sohn
D-7470 ALBSTADT 1 - Ebingen
Gartenstrasse 63, Postfach 48

Gottl. Haigis
D-7470 ALBSTADT 3
Onstmettingen (Württ)
Schwabstrasse 70/72

Belgium

p.v.b.a. A. Claeys
Ruddervoordsestraat 82
8211 ZEDELGEM

Kempische Gieterijen, N.V.
Wuytsbergen 2
2410 HERENTALS

Firma Martin p.v.b.a.
Lorckenstraat 34-42
9000 GENT

Vulcain N.V.
Wijngaardveld 34
9300 AALST

Cuba

Empresa de Fabricación y Reparación de Medios de Pesar (EFREMP)
Calle 15, No. 475
e/ Concepción y Dolores - Lawton
Ciudad HABANA

France

Ets P. Winterberger
72300 SABLE SUR SARTHE

Société Générale de Fonderie (Chappee)
8 place d'Iéna
75016 PARIS

Ets Léon Zwiebel
St Jean Saverne
67700 SAVERNE

Brouillaud
9, impasse de la Baleine
75011 PARIS

Yvelines Pesage
rue des Frères Leiris
L'Hautil
78510 TRIEL SUR SEINE

E.V.
19, rue Cail
75010 PARIS

India

India Government Mint
Fort, BOMBAY 400023

Saple's Scale Mfg., Ce, Pvt, Ltd
29, Raghunath Dadajee Street,
Fort, BOMBAY-I

Shanker Wire Products Industries
B-Deoghar
SANTHAL PARGANA, Bihar

(cont.)

Japan

Yamato Scale Co. Ltd
5-22 Chaenbacho, Akashi-shi
HYOGO

Nihon Hyosui Co. Ltd
257 Hayashi-cho, Takamatsu-shi
KAGAWA

Chyo Balance Corp.
376-2 Tsukiyame-cho, Kuze,
Minamiku-
KYOTO

Kamacho Scale Co. Ltd
2246 Mure-cho, Kida-gun
KAGAWA

Netherlands

Eegema-B
Verhage, Maarland 89 NZ
BRIELLE

A.W. Renaud
Molenstraat 8-10
DELFT

Haagsche Balansen- en Gewichtenfabriek
Denneweg 138-142a
s' GRAVENHAGE

Sweden

Skeppshults Gjuteri
330 24 SKEPPSHULT

Switzerland

Hegi and Cie AG
Eisengiesserei
3414 OBERBURG

United Kingdom

W and T Avery Ltd
Soho Foundry
SMETHWICK-VARLEX
Worcs B66 2LP

U.S.A.

Ohaus Scale Corporation
29 Hanover Road
FLORHAM PARK, New Jersey 07932

Troemner Inc
6824 Greenway Ave
PHILADELPHIA, Pa 19142

AES Inc.
1821 University Ave
Suite 178 N
SAINT PAUL, MN 55104

Rice Lake Bearing Inc.
230 W. Coleman St
P.O. Box 272
RICE LAKE, WI 54868

Precision Cast Weights
Airport Industrial Park
HWY.80 East
JACKSON, MS 39208