
Modular plug-in unit and standard 19-inch rack mounting unit based on NIM standard (for electronic nuclear instruments)

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MODULAR PLUG-IN UNIT AND STANDARD 19-INCH RACK
MOUNTING UNIT BASED ON NIM STANDARD (FOR
ELECTRONIC NUCLEAR INSTRUMENTS)

Tiroirs et châssis de 19
pouces basés sur le système NIM
(pour appareils d'électronique
nucléaire)

Kassetten und Oberrahmen zum
Einbau in 19-inch-Gestelle nach
NIM-Standard (für
kernphysikalische elektronische
Geräte)

BODY OF THE HD

The Harmonization Document consists of:

- IEC 547 (1976) ed 1 + Amdt 1 (1985); IEC/TC 45, not appended

This Harmonization Document was approved by CENELEC on 1986-12-09.

The English and French versions of this Harmonization Document are provided by the text of the IEC publication and the German version is the official translation of the IEC text. The German translation is available.

According to the CENELEC Internal Regulations the CENELEC member National Committees are bound:

to announce the existence of this Harmonization Document at national level by or before 1987-06-01

to publish their new harmonized national standard by or before 1987-12-01

to withdraw all conflicting national standards by or before 1987-12-01.

Harmonized national standards are Listed on the HD information sheet, which is available from the CENELEC National Committees or from the CENELEC Central Secretariat.

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First edition
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basés sur le système NIM
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International Electrotechnical Commission
Telefax: +41 22 919 0300

e-mail: inmail@iec.ch

3, rue de Varembe Geneva, Switzerland
IEC web site <http://www.iec.ch>



Commission Electrotechnique Internationale
International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MODULAR PLUG-IN UNIT AND STANDARD 19-INCH RACK MOUNTING UNIT
BASED ON NIM STANDARD
(FOR ELECTRONIC NUCLEAR INSTRUMENTS)**

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

PREFACE

This publication has been prepared by IEC Technical Committee No. 45, Nuclear Instrumentation.

It is intended as a complement to IEC Publications 482, Dimensions of Electronic Instrument Modules (for Nuclear Electronic Instruments), and 516, A Modular System for Data Handling; CAMAC System.

IEC Publication 482 specifies three types of modular plug-in units, Types N, C and S, based on the NIM, CAMAC and Union of Soviet Socialist Republics standards, all of which are widely used in nuclear laboratories.

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IEC Publication 516 defines the whole CAMAC system, taking over the Type C modular plug-in unit and describing the corresponding standard 19-inch rack mounting unit.

This publication defines the NIM system, taking over the Type N modular plug-in unit and describing the corresponding standard 19-inch rack mounting unit.

A first draft, which described the NIM and CAMAC rack mounting units, was discussed at the meeting held in Milan in 1974, where the decision was taken to transform it into a document covering the whole NIM system. The draft, Document 45(Central Office)90, was submitted to the National Committees for approval under the Six Months' Rule in March 1975.

The following countries voted explicitly in favour of publication:

Australia	Poland
Belgium	Romania
Canada	South Africa (Republic of)
Czechoslovakia	Spain
Finland	Sweden
France	Switzerland
Germany	Turkey
Italy	United Kingdom
Japan	United States of America
Netherlands	Yugoslavia

Other IEC publication quoted in this publication:

Publication No. 297: Dimensions of Panels and Racks.

**MODULAR PLUG-IN UNIT AND STANDARD 19-INCH RACK MOUNTING UNIT
BASED ON NIM STANDARD
(FOR ELECTRONIC NUCLEAR INSTRUMENTS)**

1. Scope

This standard applies to modular electronic nuclear instruments.

Note. — Later IEC standards may extend the scope to other more general applications.

For reactor instrumentation and control systems, other packaging of electronic nuclear instruments may also be used.

2. Object

To define standard dimensions of a modular system based on NIM standard and comprising the plug-in unit Type N specified in IEC Publication 482, Dimensions of Electronic Instrument Modules (for Nuclear Electronic Instruments), the corresponding 19-inch rack mounting unit Type NC (conforming to IEC Publication 297, Dimensions of Panels and Racks) and the associated connectors.

3. Specifications

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3.1 Dimensions of plug-in unit and rack mounting unit (standards.iteh.ai)

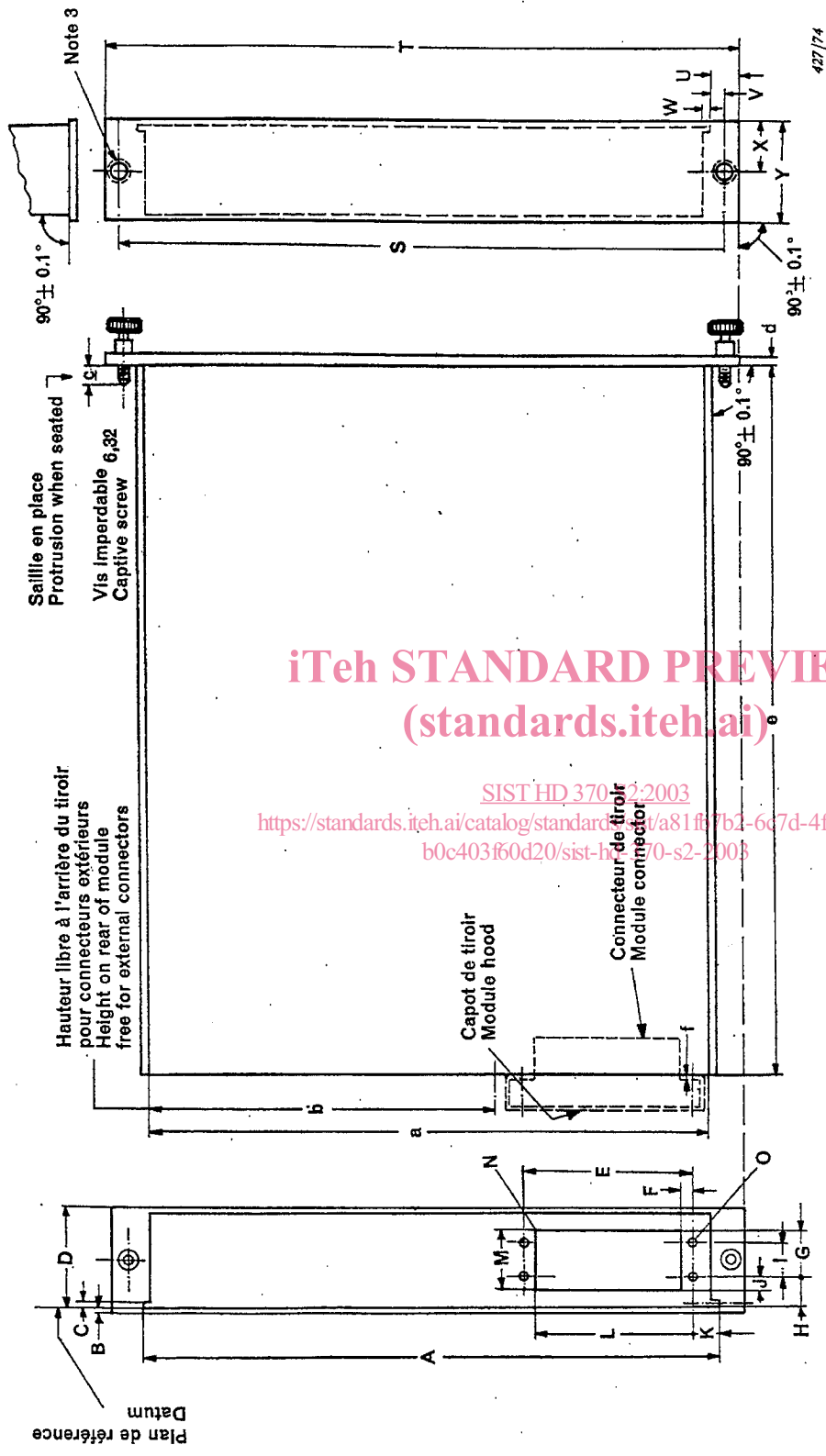
The dimensions of the modular plug-in unit Type N are given in Figure 1, page 8, and Tables I and II, page 9.

The dimensions of the standard 19-inch rack mounting unit Type NC are given in Figures 2, pages 10 and 11, 3 and 4, pages 12 and 13, and 5, pages 14 and 15, and Table III, pages 16 and 17.

3.2 Connector dimensions and pin assignments

3.2.1 The dimensions of the connector and associated hardware for module Type N and mounting unit Type NC shall be as specified in Figures 6 and 7, pages 18 and 19, and 8, page 22, and Table IV, page 21.

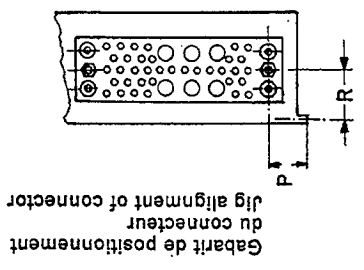
3.2.2 The connector pin assignments shall be in accordance with Table V, page 23.



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Gabarit de positionnement du connecteur
du connecteur

Notes:

1. — Pour les dimensions, voir les tableaux I et II.
2. — Les dimensions sont données pour l'extérieur du tiroir. L'épaisseur du métal doit être comprise dans ces dimensions. Les dimensions sont absolues et comprennent les saillies telles que têtes de vis, etc.
3. — Trous à l'arrière du panneau, 2 trous au minimum:
 - perçage \varnothing 6,53 \pm 0,13 mm;
 - fraisage à 82°, profondeur 0,51 \pm 0,13 mm.
4. — Les dimensions en millimètres proviennent des dimensions originales en pouces.

Notes:

1. — For dimensions, see Tables I and II.
2. — Dimensions are given for the outside of the module. Metal thickness must be included in these dimensions. Dimensions are absolute and include projections such as screw heads, etc.
3. — Drill 0.257 \pm 0.005 in (6.53 \pm 0.13 mm) and countersink 82°, 0.020 \pm 0.005 in (0.51 \pm 0.13 mm) deep on rear of panel, 2 holes minimum.
4. — The millimetre dimensions are derived from the original inch dimensions.

FIG. 1. — Dimensions des tiroirs du type N.
Dimensions of instrument module Type N.

TABLEAU I (voir la figure 1, page 8)

TABLE I (see Figure 1, page 8)

Référence Reference	Nominal (mm)	Tolérance Tolerance (mm)		Nominal (in)	Tolérance Tolerance (in)		Remarque Remark
A	199,97	+ 0,00	-0,25	7,873	+ 0,000	-0,010	Note 1
B	0,38	± 0,13		0,015	± 0,005		
C	1,63	± 0,13		0,064	± 0,005		
D							
E	57,94	± 0,13		2,281	± 0,005		
F	3,25	± 0,13		0,128	± 0,005		
G	15,98	± 0,13		0,629	± 0,005		
H	10,92	± 0,25		0,430	± 0,010		
I	11,89	± 0,25		0,468	± 0,010		
J	4,09	± 0,13		0,161	± 0,005		
K	11,71	± 0,25		0,461	± 0,010		
L	54,69	± 0,13		2,153	± 0,005		
M	20,07	± 0,13		0,790	± 0,005	Note 2	
N	0,38			0,015			
O	3,30	± 0,13		0,130	± 0,005	Note 3	
P	11,71	± 0,13		0,461	± 0,005		
R	15,98	± 0,13		0,629	± 0,005		
S	210,57	± 0,25		8,290	± 0,010		
T	221,30	± 0,20		8,712	± 0,008		
U	10,69	± 0,25		0,421	± 0,010		
V	5,36	± 0,25		0,211	± 0,010		
W	3,20	± 0,13		0,126	± 0,005		
X	17,15	± 0,13		0,675	± 0,005		
Y						Note 1	
a	193,57	+ 0,00	-0,38	7,621	+ 0,000	-0,015	Note 4
b	117,98	± 0,13		4,645	± 0,005		
c	6,35	± 1,52		0,250	± 0,060		
d	3,18	± 0,25		0,125	± 0,010		
e	245,72	+ 0,00	-0,25	9,674	+ 0,000	-0,010	
f	0,79	± 0,08		0,031	± 0,003		

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Notes 1. — Voir le tableau II.

2. — Rayon donné à titre d'exemple.

3. — Diamètre, 4 trous.

4. — Voir le capot de tiroir.

5. — Les dimensions en millimètres proviennent des dimensions originales en pouces.

Notes 1. — See Table II.

2. — Typical radius.

3. — Diameter, 4 holes.

4. — See module hood.

5. — The millimetre dimensions are derived from the original inch dimensions.

TABLEAU II (voir la figure 1, page 8)

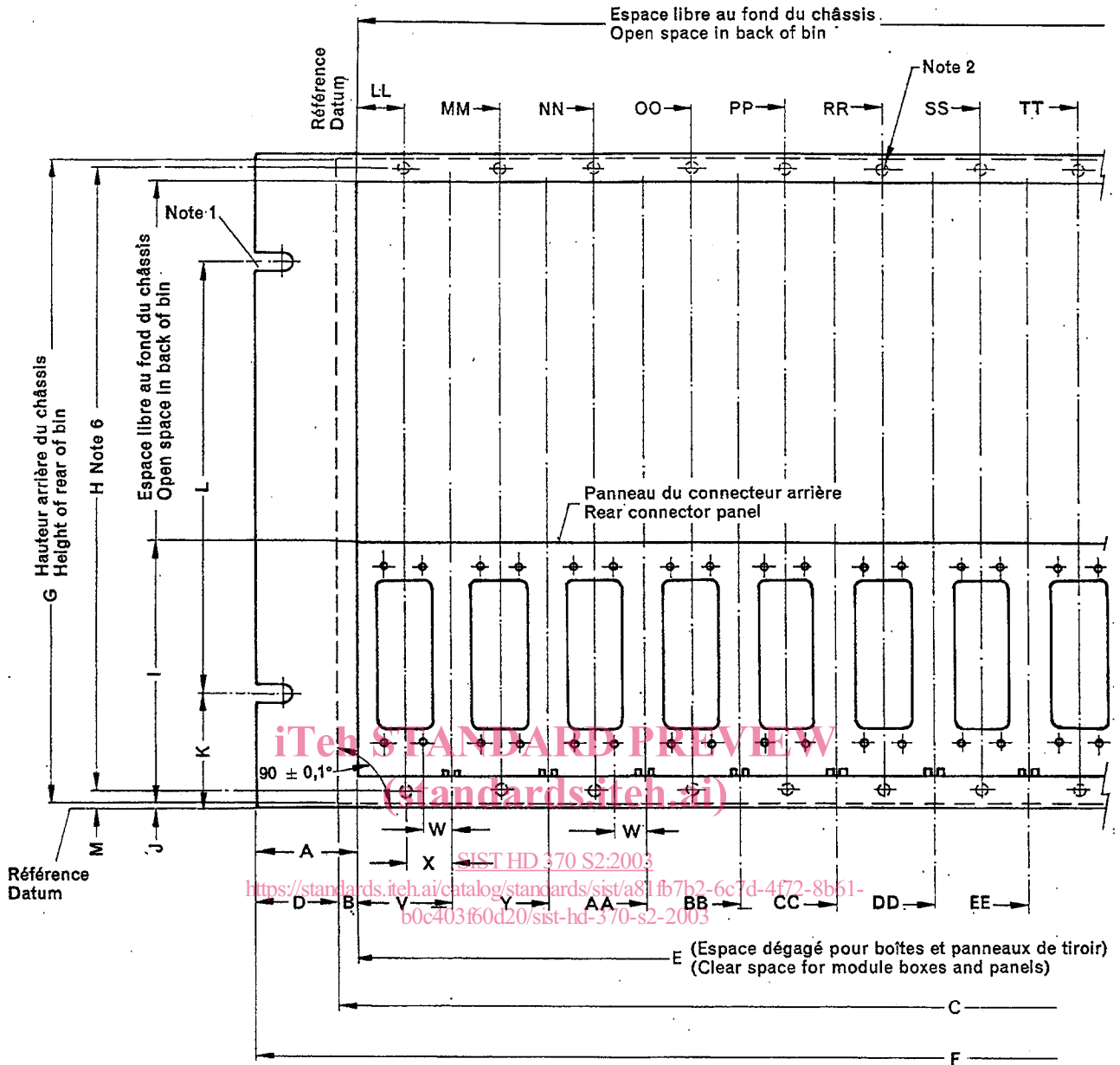
TABLE II (see Figure 1, page 8)

Nombre de modules Width units	Nominal ¹⁾ Y (mm)	Nominal ²⁾ Y (in)	Nominal ¹⁾ D (mm)	Nominal ²⁾ D (in)
1	34,29	1,350	33,53	1,320
2	68,68	2,704	67,92	2,674
3	103,07	4,058	102,31	4,028
4	137,46	5,412	136,70	5,382
5	171,86	6,766	171,09	6,736
6	206,25	8,120	205,49	8,090
7	240,64	9,474	239,88	9,444
8	275,03	10,828	274,27	10,798
9	309,42	12,182	308,66	12,152
10	343,81	13,536	343,05	13,506
11	378,21	14,890	377,44	14,860
12	412,60	16,244	411,84	16,214

¹⁾ Tolérance + 0,00
Tolerance - 0,25 mm

²⁾ Tolérance + 0,000
Tolerance - 0,010 in

Note. — Les dimensions en millimètres proviennent des dimensions originales en pouces.
The millimetre dimensions are derived from the original inch dimensions.



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Notes:

1. — Echantures ouvertes ou fermées conformes à la Publication 297 de la CEI.
2. — Pour l'acier, percer et tarauder au n° 6-32, ajuster classe 2 (24 trous). Pour l'aluminium, percer et rapporter filetage à la presse.
3. — Fixer chaque connecteur d'alimentation avec un calibre le positionnant par rapport à la ligne centrale du guide inférieur adjacent.
4. — Entretoise de 0,031 in (0,79 mm) entre connecteurs et plaque de montage si on n'utilise pas de capuchon de protection.
5. — R est mesuré entre les surfaces internes de glissement des guides inférieurs et supérieurs.
6. — H est mesuré entre les centres des trous de montage du panneau.

(For the notes in English, see page 11.)

Suite de la figure 2, page 11.
Continuation of Figure 2, page 11.

FIG. 2. — Dimensions du châssis du type NC — Vue avant.