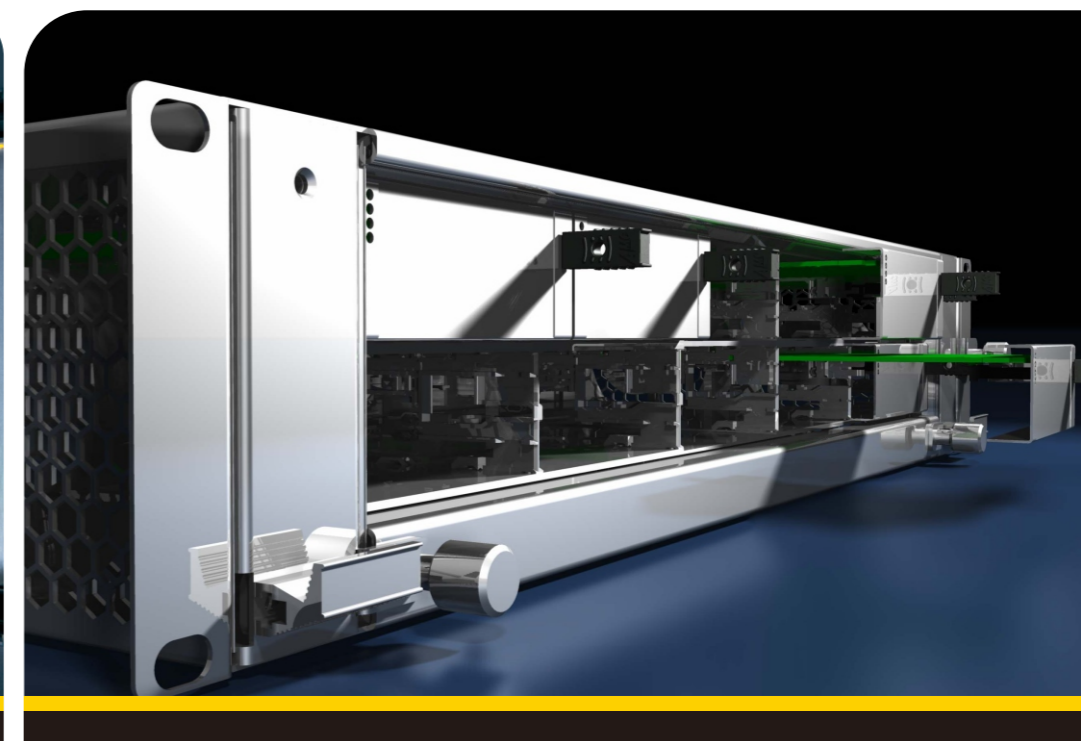




— Product Catalogue —
www.lintaiwj.com.cn



Top Quality through Elaborate Process Control



SHENZHEN LINTAI HARDWARE CO.,LTD.

SHENZHEN LINTAI HARDWARE CO.,LTD.

Address: 1-2/F 1st Building Shang Shi Jia Industry Park, Gong Ming Town, Baoan Shenzhen

Tel : 0755-29420816/26/36 Fax : 0755-29420815

Website : www.lintaiwj.com.cn Email : liuzy@szlintai.com.cn



COMPANY PROFILE

Lintai Hardware is a Shenzhen based company focusing on aluminum casing and cabinet design, manufacturing and marketing for electricity, communications, network and PCB'A installation facility. We have extensive experience on hardware for communications industry, machining and well established brand and service network all over China. We are proud of our professional management and technical service team providing satisfactory customer services and top quality products.

We have a large number of staff who have serious and creative work attitude, and they are the most valuable asset to our company, which constitutes the foundation and motivates us to develop and grow. Our management team encourages each individual to have his or her own career plan and work hard to have it realized by positively aspiring the concept "base on the enterprise and return to the Society" to daily work. The team is committed to the company's development by constantly providing good suggestions for continuous improvement

Quality and technology are our development strategy implemented through constant new equipment upgrade and technology investment. We use advanced 3D modeling technicals during product development and samples making. With that, the lead time to mass production is greatly shortened and precision is maintained. Certified by several international quality management system, we have over ten years of experience in designing and manufacturing communications equipment casing and cabinet. Our factory has a good number of high precision measurement system, CNC machining center and high speed stamping machine, NC bending machine, digital hydraulic cutting machine, NC milling machine and other general machines for welding, drilling, bending and riveting to ensure reliable quality. We can offer maximum customer satisfaction by our flexible production lines such as sheet metal, machining and casing production lines.

We uphold the management concept "care about customer needs, create characteristic advantage, establish brand image, continuously improve" to cast our brand, provide our best service, abide by all commercial credit and to innovate our products, so that we can be a modern enterprise with great competitiveness.

Our products are based on aluminum or aluminum/ magnesium alloy extrusions buy utilizing high precision tooling, numerical control facility, high precision measurement equipment. Our products comply with GB 3047.1-86, panel, rack and cabinet basic dimensions series section 2 specified rack, plug-in board casing, plug-ins' fundamental dimensions and international standard IEC297-3, 482.6mm(19in) series mechanical dimensions section 3: plug-in casing and its corresponding plug-ins. With excellent design and functional performance, all modularized components are easy for assembly. In any circumstances, your are satisfied by our design and surface treatment such as oxidation, hair brushing, spray paint and stoving vanish. We recently developed new industry-used Compact PCI casing, EMC/ ESD functional casing, waterproof and/ or dust proof specialized casing.

We have strong technical capability and can design to different specifications to fulfill all functional requirements of PCB plug-in casing, i.e. research -development -manufacturing, other than that, we can fabricate various kinds of components for specific customer needs.

Lintai series products have gained old and new customers' trust through good credit, quality service, excellent product quality. Today, our marketing has been throughout China, and we sincerely hope that we can co-develop with your company, believing that we can be of your best partner.



We believe :

Top Quality

All products use high grade aluminum with elaborate tooling design by our engineers. Our products' quality, performance, appearance have achieved or exceeded equivalent international standards.

Exquisite products

We constantly perfect our products through deploying scientific management system and applying international advanced technology.

Develop in depth and scope

Our competitiveness is greatly enhanced through integrated product research and development, reasonable pricing and prompt reaction to customer requirements.

Customer First

Customer satisfaction is guaranteed through outstanding after-sale service by our local offices in major cities in China. We promise to apply "Three Guarantees" to all our products and services.

INTEGRITY

Word of Honor and Integrity

*People in good faith,
Product in fine quality,
Prosperity in long term.*

—— our management concept

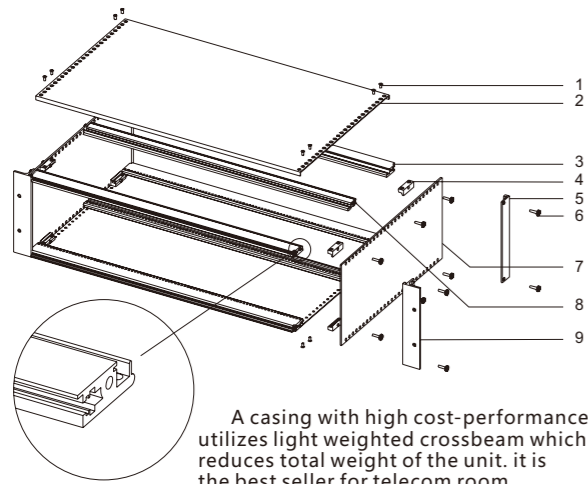


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type LT/(A)

LT/A1(standard type)

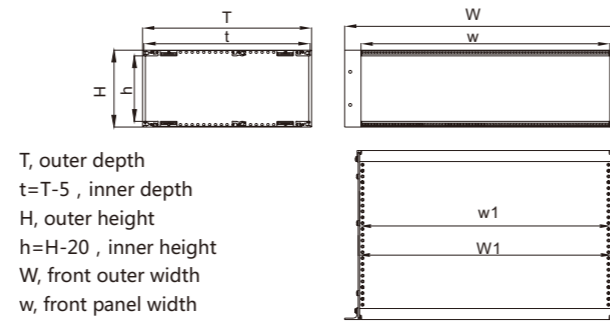


A casing with high cost-performance, utilizes light weighted crossbeam which reduces total weight of the unit. it is the best seller for telecom room.

1. M3×6 sunk screw
2. cover plate
3. standard front/rear crossbeam
4. cover plate connection items
5. rear flange
6. M4×12 round head screw
7. side panel
8. standard middle crossbeam
9. front flange

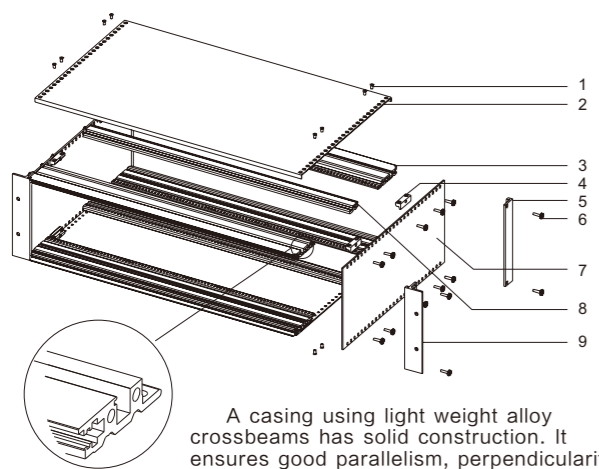
U	H(mm)	TE	W(mm)	w(mm)	w1(mm)
2U	87.6	20TE	157.5	101.6	106.6
3U	132.0	21TE	162.5	106.6	111.8
4U	176.5	28TE	198.1	142.2	147.2
5U	221.0	40TE	259.1	203.2	208.2
6U	265.4	42TE	269.3	213.4	218.5
7U	309.8	56TE	340.4	284.5	289.6
8U	354.2	60TE	360.7	304.8	309.8
9U	398.7	63TE	375.9	320.0	325.2
10U	443.2	84TE	482.6	426.7	431.8

Note: width option 94TE, 104TE and etc.



T, outer depth
 $t=T-5$, inner depth
 H, outer height
 $h=H-20$, inner height
 W, front outer width
 w, front panel width
 $W1=w1+5$, outer width
 w1, inner width

LT/A2(strengthened type)

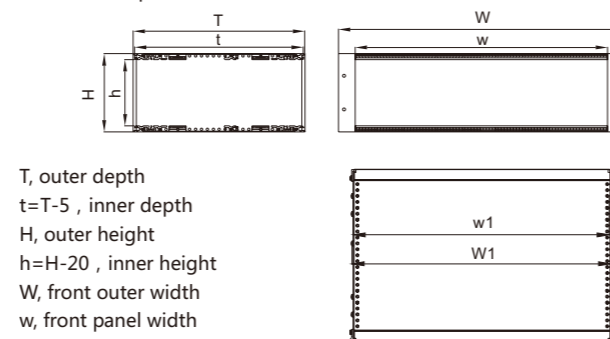


A casing using light weight alloy crossbeams has solid construction. It ensures good parallelism, perpendicularity and enhanced bearing capability. It is best for heavy duty plug-in casing.

1. M3×6 sunk screw
2. cover plate
3. strengthened front/rear crossbeam
4. cover plate connection items
5. rear flange
6. M4×12 round head screw
7. side panel
8. strengthened middle crossbeam
9. front flange

U	H(mm)	TE	W(mm)	w(mm)	w1(mm)
2U	87.6	20TE	157.5	101.6	106.6
3U	132.0	21TE	162.5	106.6	111.8
4U	176.5	28TE	198.1	142.2	147.2
5U	221.0	40TE	259.1	203.2	208.2
6U	265.4	42TE	269.3	213.4	218.5
7U	309.8	56TE	340.4	284.5	289.6
8U	354.2	60TE	360.7	304.8	309.8
9U	398.7	63TE	375.9	320.0	325.2
10U	443.2	84TE	482.6	426.7	431.8

Note: width option 94TE, 104TE and etc.



T, outer depth
 $t=T-5$, inner depth
 H, outer height
 $h=H-20$, inner height
 W, front outer width
 w, front panel width
 $W1=w1+5$, outer width
 w1, inner width

type LT/(A)

LT/A-1/2

Design features: using light weighted and enhanced crossbeams, distinctive fit for various applications.



Technical parameters:

Depth : 185、225、245、285、305、325、345、365、405、465、525、585mm
 Width : 19inch(482.6mm)
 Height : 2U、3U、4U、5U、6U、8U、9U、10U
 or customer design for specific application
 Material: aluminum magnesium alloy、6063-T5

Surface finish:

hair brushed, high pressure sand blast, electro-polishing, anodic oxidization, electric conductive oxidization, UV paint spray, electrostatic spray, laser engrave, screen print

Testing:

vibration test DIN IEC 68-2-6 Test Fc DIN IEC 68-2-27 Test Ea

Standard:

DIN 41494 -5、IEC 60297-3-4-5、EIA 310-D、GB/T19520

Optional accessories:

EMC shielding, pluggable front panel, handle, rear panel, plug-in box, guiding rail, cover plate, heat sink, grounding, shock absorbing items.

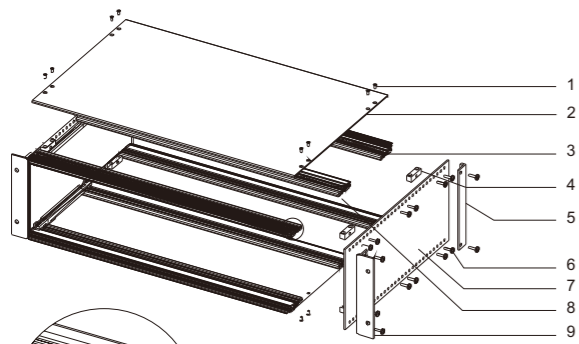
Colors:

original aluminum color, matte black, computer gray, military green, silver, dark gray and etc.



type LT/(A)

LT/A3

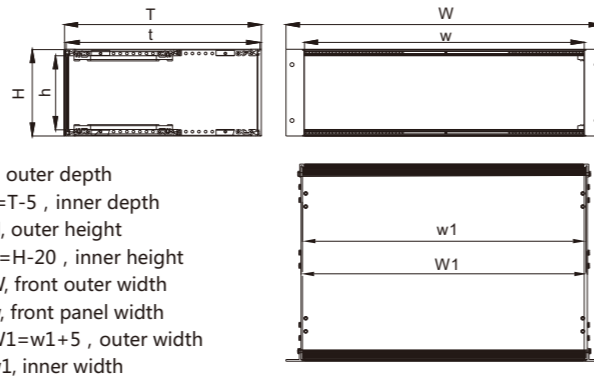


A casing using standard crossbeam (two fastening holes) realizes high mechanical strength and perfectly balanced volume and weight. It is best for airborne, vehicle borne equipment and rail transit communication control systems.

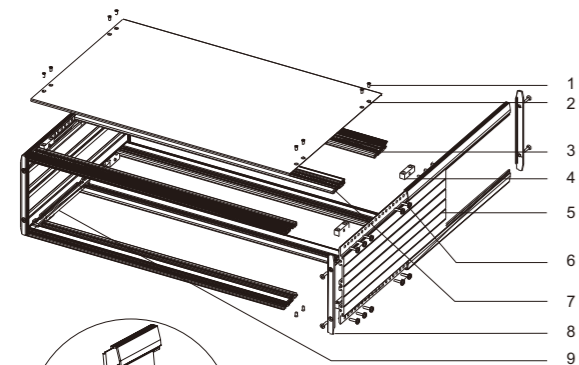
1. M3×6 sunk screw
2. cover plate
3. standard front/rear crossbeam
4. cover plate connection items
5. rear flange
6. M4×12 round head screw
7. plane side panel
8. standard middle crossbeam
9. front flange

U	H(mm)	TE	W(mm)	w(mm)	w1(mm)
2U	87.6	20TE	157.5	101.6	106.6
3U	132.0	21TE	162.5	106.6	111.8
4U	176.5	28TE	198.1	142.2	147.2
5U	221.0	40TE	259.1	203.2	208.2
6U	265.4	42TE	269.3	213.4	218.5
7U	309.8	56TE	340.4	284.5	289.6
8U	354.2	60TE	360.7	304.8	309.8
9U	398.7	63TE	375.9	320.0	325.2
10U	443.2	84TE	482.6	426.7	431.8

Note: width option 94TE, 104TE and etc.



LT/A4

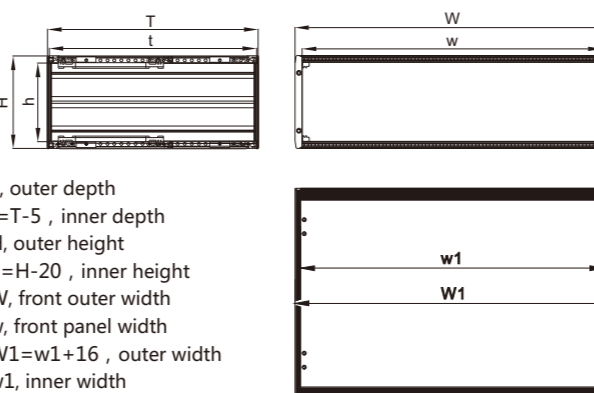


A casing using light-weight section bar side panel, streamline side panel concealing screw heads, preventing sharp corners from operational wounding, is best for stand-alone desk type equipment

1. M3×6 sunk screw
2. cover plate
3. standard front/rear crossbeam
4. cover plate connection items
5. section side panel
6. M4×12 round head screw
7. standard middle crossbeam
8. front/rear blend stop
9. guiding rails

U	H(mm)	TE	W(mm)	w(mm)	w1(mm)
2U	87.6	20TE	122.2	101.6	106.6
3U	132.0	21TE	127.2	106.6	111.8
4U	176.5	28TE	162.8	142.2	147.2
5U	221.0	40TE	223.8	203.2	208.2
6U	265.4	42TE	234.0	213.4	218.5
7U	309.8	56TE	305.1	284.5	289.6
8U	354.2	60TE	325.4	304.8	309.8
9U	398.7	63TE	340.6	320.0	325.2
10U	443.2	84TE	447.3	426.7	431.8

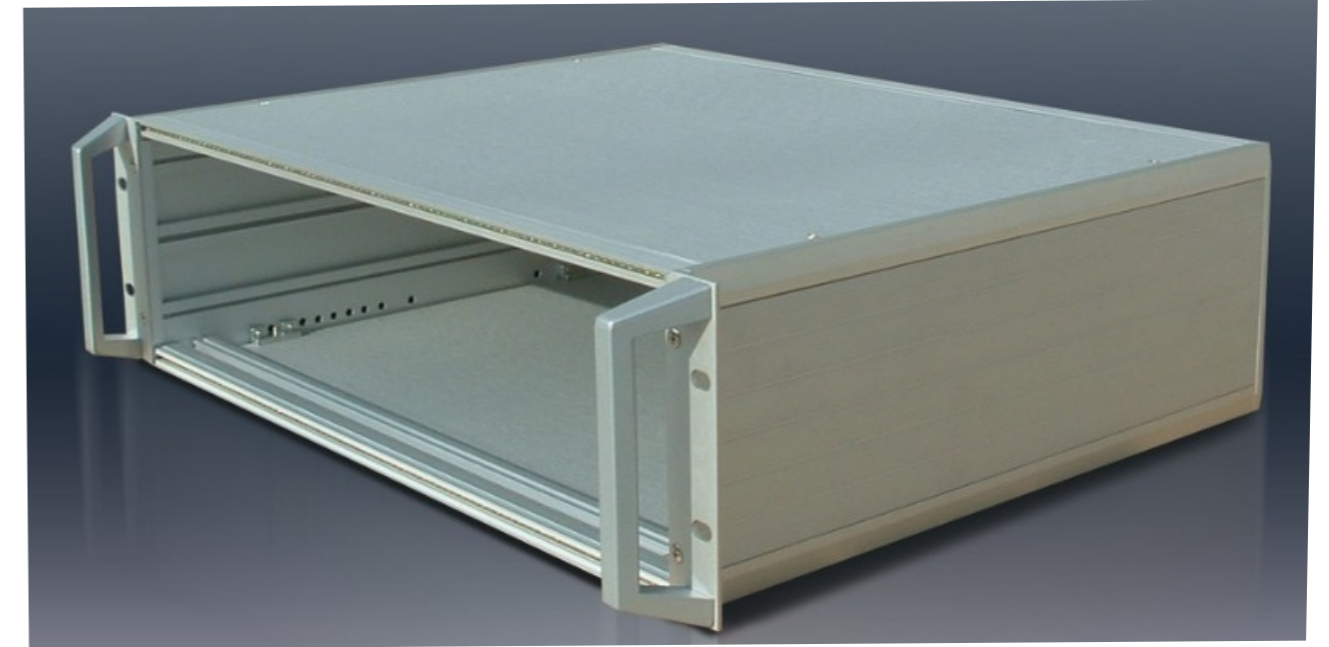
Note: width option 94TE, 104TE and etc.



type LT/(A)

LT/A-3/4

Design features: Standard cross beams, side panel type I (flat) and type II (section bar assembly), type I for rack assembly, type II for desk top assembly.



Technical parameters:

Depth : 185、225、245、285、305、325、345、365、405、465、525、585mm
 Width : 19inch(482.6mm)
 Height : 1U、2U、3U、4U、5U、6U、7U、8U、9U、10U
 or customer design for specific application
 Material: aluminum magnesium alloy、6063-T5

Surface finish:

hair brushed, high pressure sand blast, electro-polishing, anodic oxidization, electric conductive oxidization, UV paint spray, electrostatic spray, laser engrave, screen print

Testing:

vibration test DIN IEC 68-2-6 Test Fc DIN IEC 68-2-27 TEST EA

Standard:

DIN 41494 -5、IEC 60297-3-4-5、EIA 310-D、GB/T19520

Optional accessories:

EMC shielding, pluggable front panel, handle, rear panel, plug-in box, guiding rail, cover plate, heat sink, grounding, shock absorbing items.

Colors:

original aluminum color, matte black, computer gray, military green, silver, dark gray and etc.



type LT/(B)

design features:

1U/1.5U/2U/2.5U/3U/4U casing for industry control unit, server, switchboard and etc, it has high inner volume, and can be used for multiple applications with reserved positions for side panel guiding rails.it can also be used for drawer casing with other casing or machine cabinet.



Technical parameters:

Depth : 180、240、300、360mm

Width : 19inch(482.6mm)

Height : 1U、1.5U、2U、3U、 other

Material: aluminum magnesium alloy、 6063-T5

Surface finish:

hair brushed, high pressure sand blast, electro-polishing, anodic oxidization, electric conductive oxidization, UV paint spray, electrostatic spray, laser engrave, screen print

Testing:

vibration test DIN IEC 68-2-6 Test Fc DIN IEC 68-2-27 Test Ea

Standard:

DIN 41494-5、 IEC 60297-3-4-5、 EIA 310-D

GB/T19520

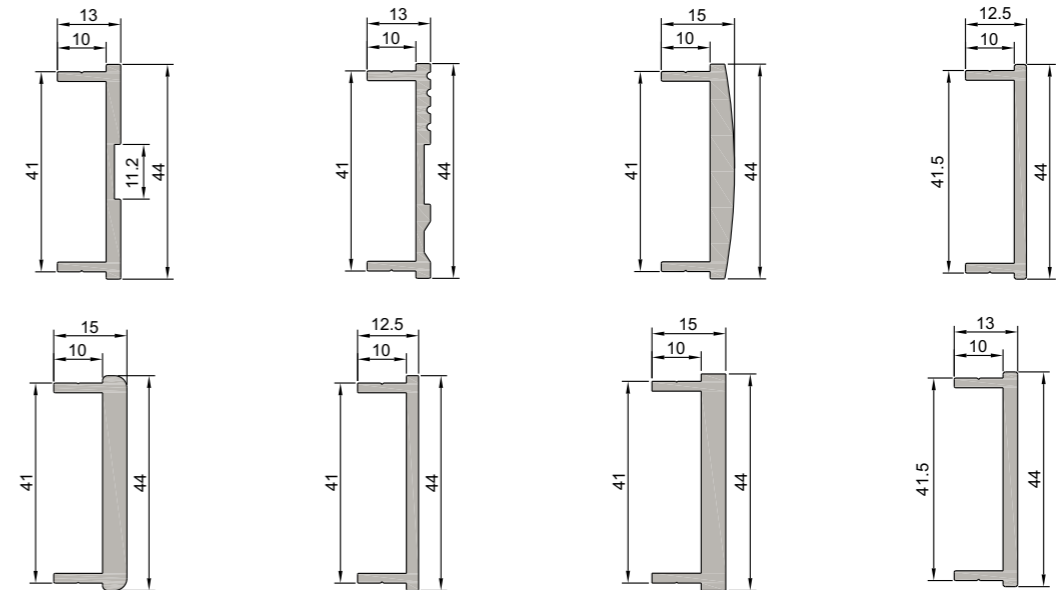
Optional accessories:

pluggable front、 handle, front panel, outer guiding rail,

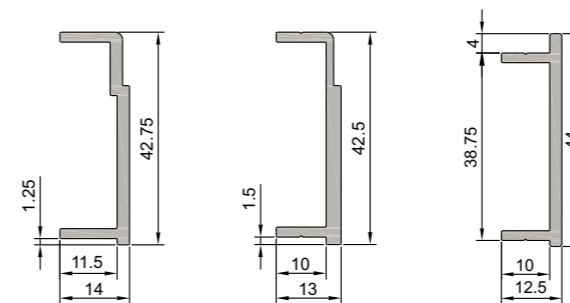


type LT/(B)

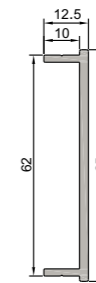
1U panel section bar



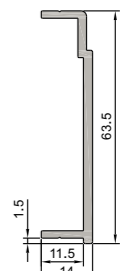
1U side panel section bar



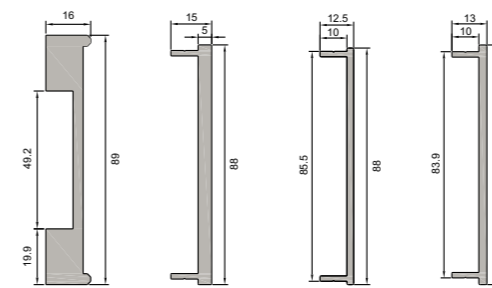
1.5U panel section bar



1.5U side panel section bar



2U panel section bar



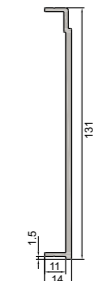
2U side panel section bar



3U panel section bar



3U side panel section bar



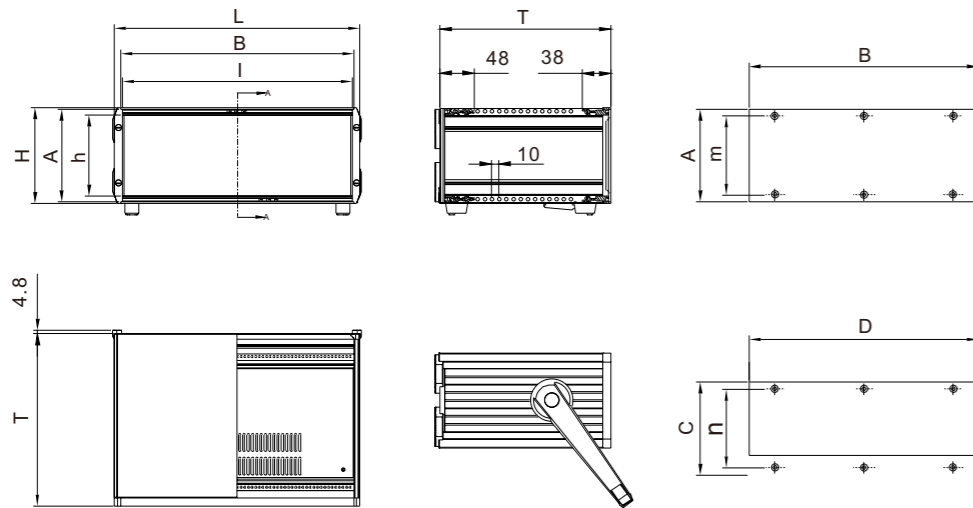
type LT/(C)

- aluminum alloy+high quality steel plate construction
- upper/ lower cover plate powder coated, spray paint
- simple construction, easy assembly
- customized color options
- dimension adjustable per customer requirement
- convenient options for special design



Height/ width table

outer		inner		panel		panel installation		
total height	cross beams	total width	clear height	clear width	front panel	rear panel	front panel	rear panel
H	(HP)	L	h	l	BxA	DxC	m	n
2U	42	235	68	218	213x85	213x86	78	78
2U	63	342	68	325	320x85	320x86	78	78
2U	84	449	68	432	427x85	427x86	78	78
3U	42	235	113	218	213x130	213x131	123	123
3U	63	342	113	325	320x130	320x131	123	123
3U	84	449	113	432	427x130	427x131	123	123
4U	42	235	157	218	213x174	213x175	167	167
4U	63	342	157	325	320x174	320x175	167	167
4U	84	449	157	432	427x174	427x175	167	167

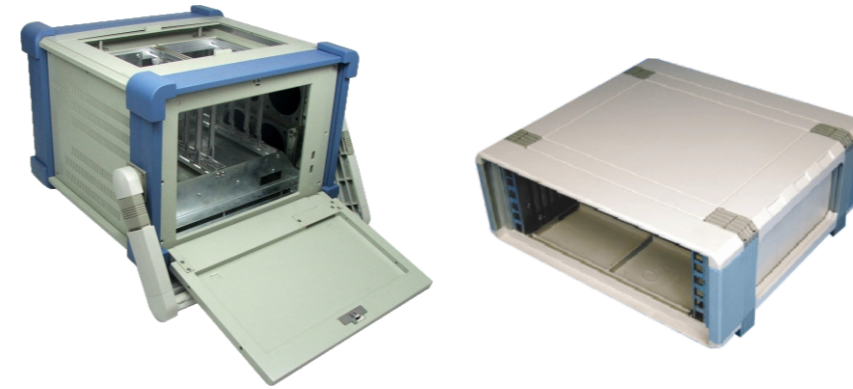


depth table

depth	depth
T	t
180	164
240	224
300	284
320	304
360	344

Note: optional for customized height

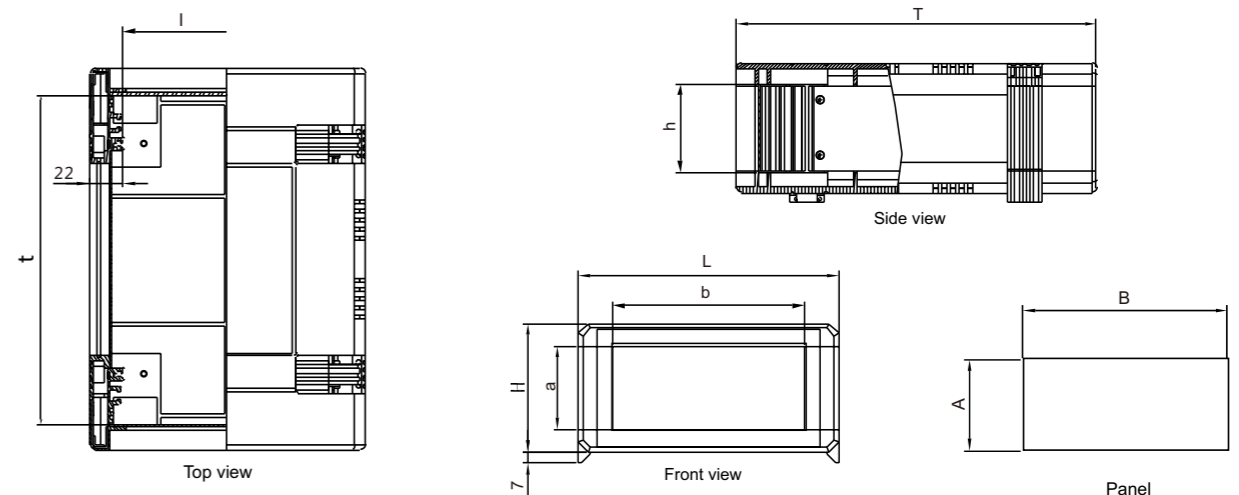
type LT/(D)



- plastic cover plate
- multiple casing stacking
- casing height customizable
- simple construction, easy assembly
- optional color
- 3 types of handles
- special assembly service

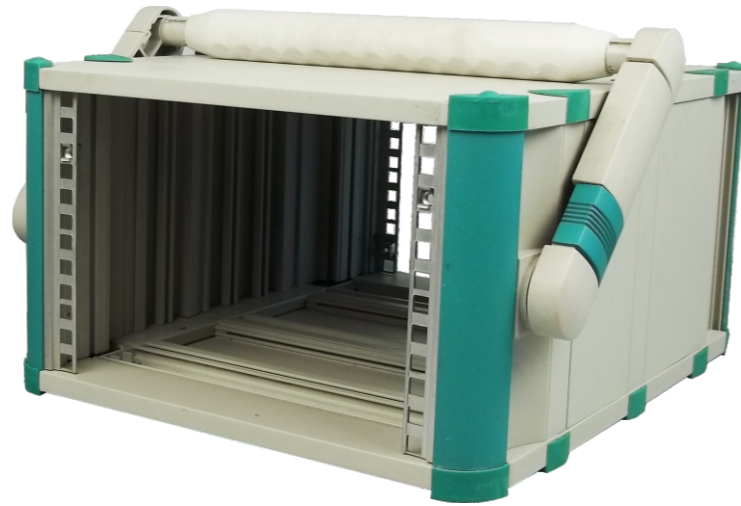
dimensions table

model number	outer			inner			panel			
	total height	total width	total depth	clear height	clear width	clear depth	max dims		feature dims	
	H	L	T	h	l	t	B	A	b	a
LT/D-1-1	2U	280	300	62	236	264	254	61	58	231.5
LT/D-1-2	3U	280	300	107	236	264	254	106	103	231.5
LT/D-1-3	4U	280	300	151	236	264	254	150	147	231.5
LT/D-1-4	5U	280	300	196	236	264	254	195	192	231.5
LT/D-2-1	2U	360	300	62	316	264	334	61	58	311.5
LT/D-2-2	3U	360	300	107	316	264	334	106	103	311.5
LT/D-2-3	4U	360	300	151	316	264	334	150	147	311.5
LT/D-2-4	5U	360	300	196	316	264	334	195	192	311.5
LT/D-3-1	2U	440	350	62	396	314	413	61	58	391.5
LT/D-3-2	3U	440	350	107	396	314	413	106	103	391.5
LT/D-3-3	4U	440	350	151	396	314	413	150	147	391.5
LT/D-3-4	5U	440	350	196	396	314	413	195	192	391.5
LT/D-4-1	2U	180	250	62	136	214	153	61	58	131.5
LT/D-4-2	3U	180	250	107	136	214	153	106	103	131.5
LT/D-4-3	4U	180	250	151	136	214	153	150	147	131.5
LT/D-4-4	5U	180	250	196	136	214	153	195	192	131.5



type LT/(E)

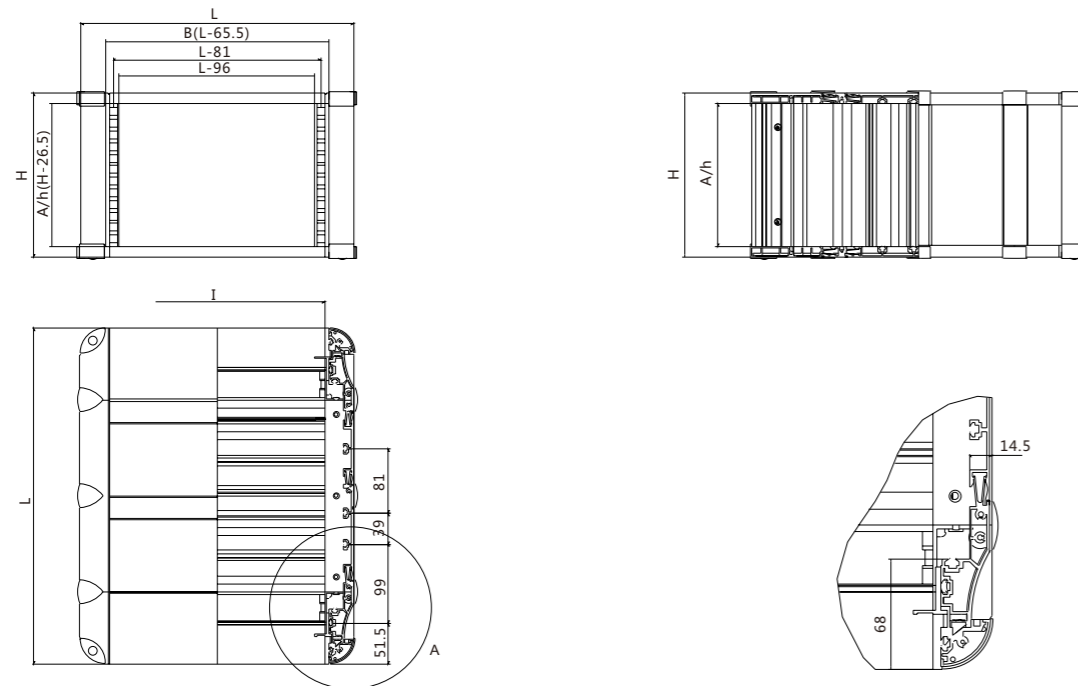
- all aluminum construction
- optional large handle
- simple construction, easy assembly
- optional color
- large range of dimensions
- special assembly services



Height/ width table

outer		inner		panel
total height	total width	clear height	clear width	panel dims
H	L	h	l	BxA
2U	238	62	163	172.5x61.5
2U	345	62	272	279.5x61.5
2U	452	62	379	386.5x61.5
3U	238	107	163	172.5x106.5
3U	345	107	272	279.5x106.5
3U	452	107	379	386.5x106.5
4U	238	151	163	172.5x150.5
4U	345	151	272	279.5x150.5
4U	452	151	379	386.5x150.5

T= 300+29m+120n



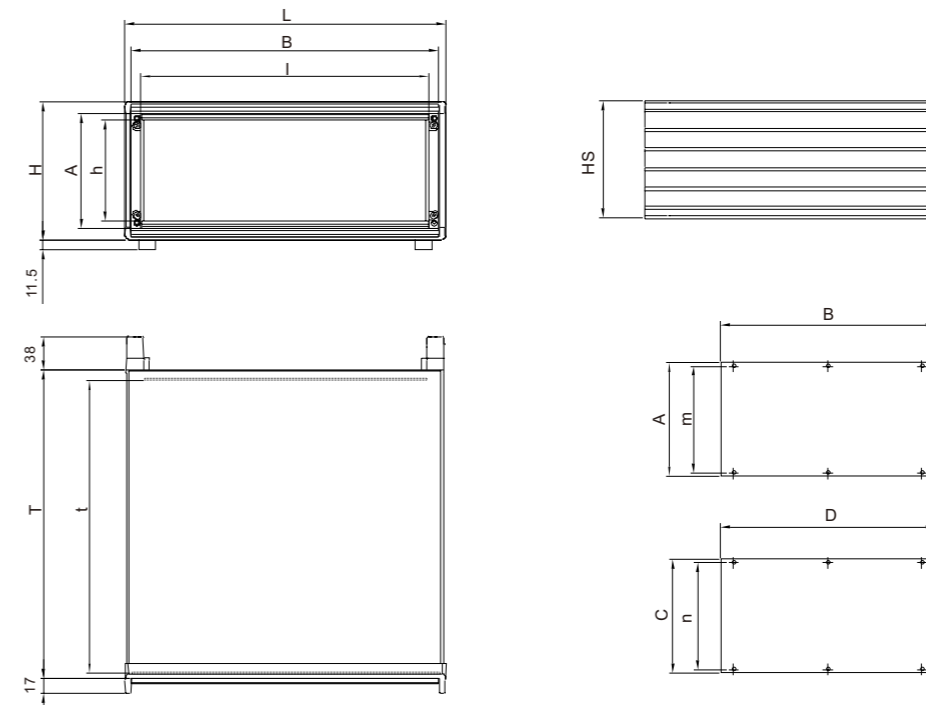
type LT/(F)

- all aluminum construction
- powder coated or spray paint for upper/ lower plate
- simple construction, easy assembly
- optional color
- large range of dimensions
- special assembly services



Height/ width table

outer		inner		panel		panel installation			
total height	cross beams (HP)	total height	total width	clear height	clear width	front panel	rear panel	front panel	rear panel
HS	(HP)	H	L	h	l	BxA	DxC	m	n
2U	42	112	257	68	218	240.5x85	215x85	78	78
2U	63	112	364	68	325.5	347.5x85	322.5x85	78	78
3U	42	157	256	113	218	240.5x130	215x130	123	123
3U	63	157	364	113	326	347.5x130	324x130	123	123
3U	84	157	469	113	431.5	453x130	428.5x130	123	123
4U	63	201	364	157	326	347.5x174	324x174	167	167
4U	84	201	469	157	431.5	453x174	428.5x174	167	167



depth table

depth	depth
T	t
280	267
300	287
320	307
340	327
360	347
380	367

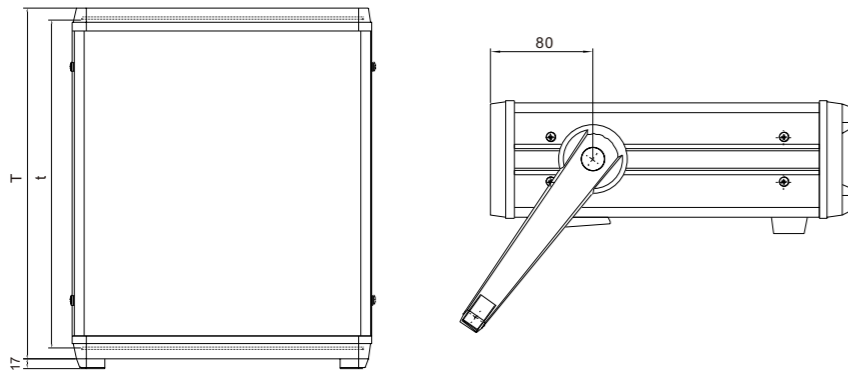
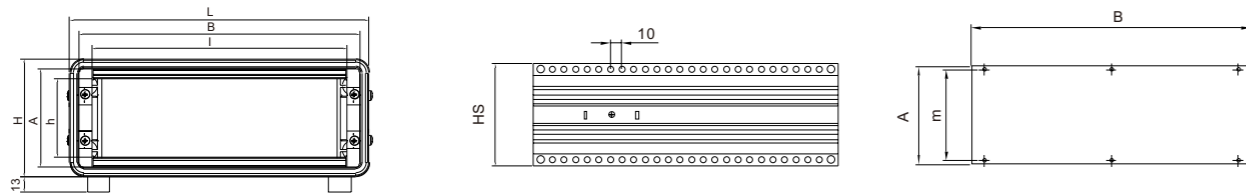
type LT/(G)



- all aluminum construction
- powder coated or spray paint for upper/ lower plate
- simple construction, easy assembly
- optional color
- large range of dimensions
- special assembly services

Height/ width table

side panel height	outer		inner			panel	panel installation
	total height	crossbeam length(HP)	total width	clear height	clear width	/	/
HS	H(mm)		L(mm)	h(mm)	l(mm)	B(mm)xA(mm)	m(mm)
2U	102	42	259	68	218	242x85	78
2U	102	63	366	68	325	349x85	78
3U	147	42	259	113	218	243x129	123
3U	147	63	366	113	325	349.5x130	123
3U	147	84	473	113	432	455.5x129	123
4U	191	42	259	157	218	242.5x174	167
4U	191	63	366	157	325	349.5x174	167
4U	191	84	473	157	432	455.5x174	167



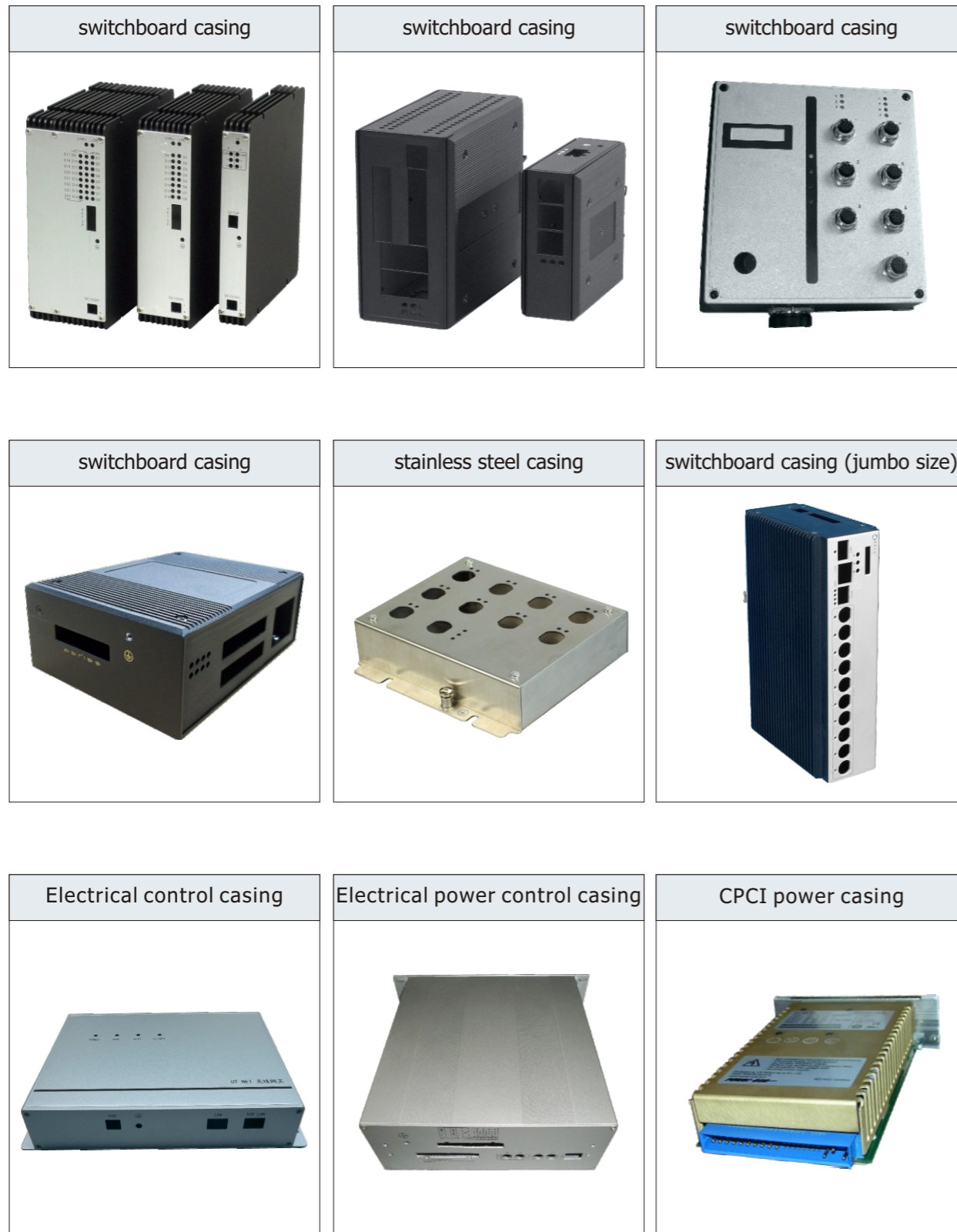
depth table

depth	depth
T	t
180	158
240	218
300	278
320	298
360	338

Note: optional for customized height

type LT/(H)





type CPCI

▼ features:

- 19 inches racket plug-in casing with 300 mm depth
- height: 1-4U (1U design unit =44.45mm) optional
- material: steel plate+section aluminum alloy bar
- surface finish: spray paint
- 2 front and 2 rear slots per 1U, 4TE wide per slot, used for CPCI/VME plug-in card lateral insertion from the front and back direction.
- CPCI/ VME slots area on the left, 6x160mm plug-in card installed in the front, 6Ux80mm installed at the back.
- ATX power supply or hot pluggable CPCI power supply can be installed on the right
- electric fan can be installed from left to right, wind direction from left to right.
- integrated EMC consideration
- conformance to IEEE1101.1/10/11 and CPCI regulation

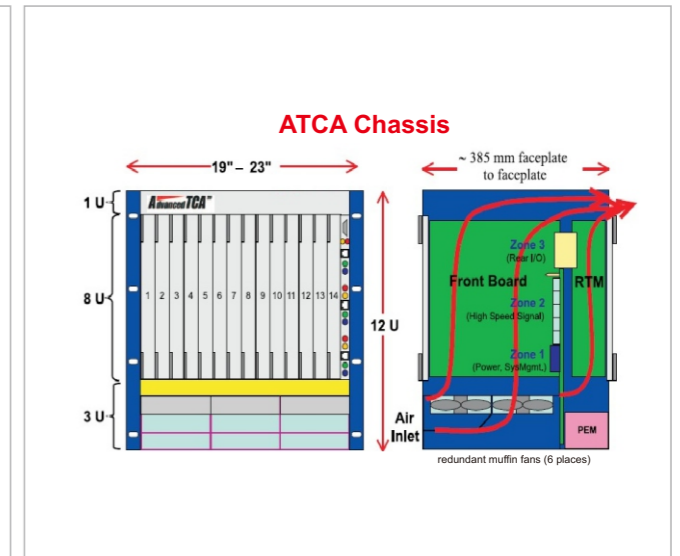


type ATCA

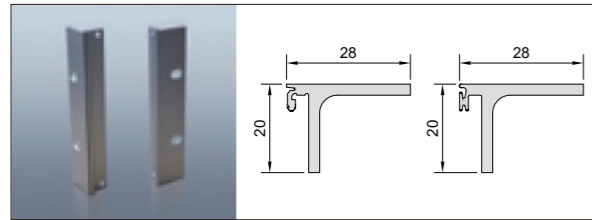
ATCA (Advance Telecom Computing Architecture) is derived from the new generation computing technology - CompactPCI standard largely used for telecom, aerospace, industry control, medical equipment, intelligent transportation, military equipment. its high cost-performance ratio is aimed for next generation telecom and data network combination, and it is based on modularized construction, compatibility and extendibility hardware architecture.

ATCA is an totally open and interoperable telecom industry standard, using entirely new design standards. this standard facilitates telecom equipment manufacturer to cater for ever higher requirement from telecom operators.

- 1) flexible back-panel construction
- 2) excellent heat sinking capability and reliability
- 3) an open standard, due to these advantages it is not only widely used in telecom industry, but also gets more attention from military and aerospace industry

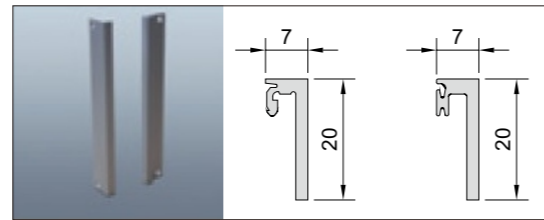


front flange



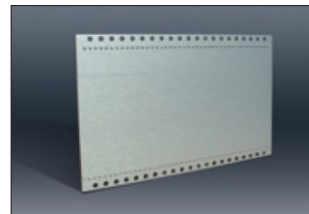
- specification: 2U, 3U, 4U, 5U, 6U, 8U, 9U, 10U.
- application: to fasten casing and cabinet or rack and can install handles
- material: aluminum section bar
- surface finish: sand blast, spray paint, chromate passivation

rear flange



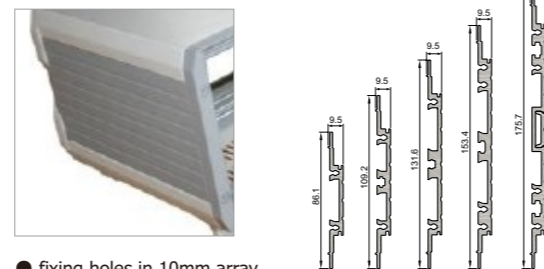
- specification : 2U, 3U, 4U, 5U, 6U, 8U, 9U, 10U.
- application: used for where there is not need for cabinet and rack assembly
- front flange clearance compensation
- material: section aluminum 6063-T5
- surface finish: sand blast, chromate passivation, spray paint.

side plate



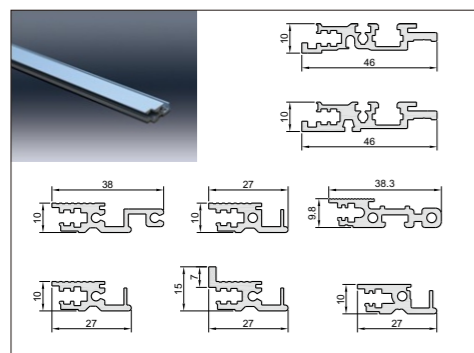
- fixing holes in 10mm array
- positioning boss height 1mm
- material thickness 2.5mm
- material: 5052 aluminum sheet
- surface finish: sand blast+chromate passivation, anodic oxidization, spray paint
- application: casing side structural support, crossbeam and casing assembly

side strengthening plate



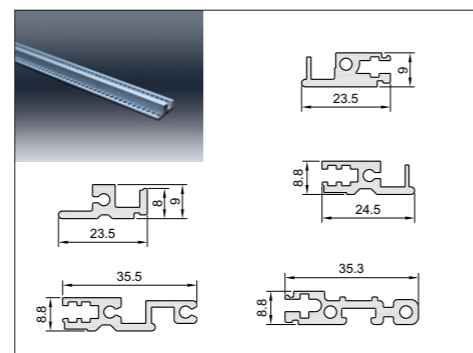
- fixing holes in 10mm array
- material: section aluminum 6063-T5
- surface finish: sand blast+chromate passivation, anodic oxidization, spray paint
- application: casing side structural support, crossbeam and casing assembly

front and rear crossbeam



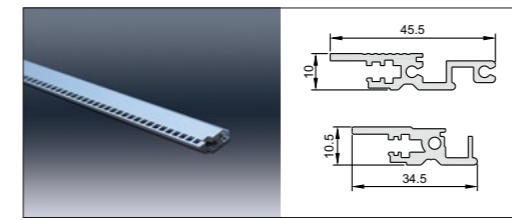
- used for installing of plug-in guiding rail and fixing front panel
- front section higher than panel by 2.5mm, conforms to IEC 60 297-3
- holes array by TE interval for precise plug-in guiding rails installation
- front screw holes M4
- through-hole
- material: section aluminum bar
- surface finish: chromate passivation, anodic oxidization, spray paint

horizontal middle crossbeam



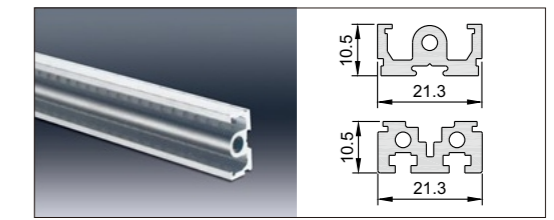
- used for installing plug-in guiding rails and z section bar, or fixing insulator or contact bar
- screw hole M2.5, interval 1 TE
- holes array by HP interval for precise installing plug-in guiding rails
- screw M2.5 for installing z section bar, insulator or contact bar

front/ rear horizontal crossbeam



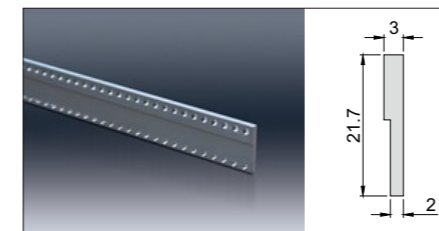
- used for plug/ unplug assistance
- used for installing plug-in board guiding rails, and fixing front panel
- Front height and holes arrays based on IEEE1101.10 and IEC 60 297-5-101. it is for type V plug-in and unplug assistance
- holes array TE intervals are for precise installing plug-in board guiding rails

horizontal middle crossbeam



- used for type z, installing insulator or contact bar when 6u PC board or plug in modulation box are used.
- 84 threaded holes for M2.5

middle crossbeam



- used for installing connector
- 84 threaded holes for M2.5

handles



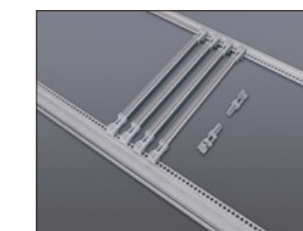
- used for assembly box
- installed on flanges with handle's hole
- specification: 3u/4u L=115 6u/7u L=248, fixing holes M4
- material: precision zinc alloy die cast.
- surface finish: silver spray paint or pearl chrome plated.

standard guiding rails



- used for plug-in board guiding, or contact spring installation
- used for 160, 220 280mm PC board, 2mm max

combined guiding rails



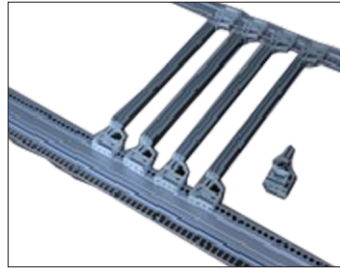
- used for PC board 1.6mm thick
- three-stage guiding rails assembly with aluminum middle section + two end items
- aluminum middle section can be customized.

standard CPCI guiding bars



- plug-in board guiding rails 4 TE, can be encoded.
- used for 1.6mm - 2.0mm 160, 220 280 PC boards.
- encoding cabinet used for installing encoding pin.
- static electric feet for installing discharging electrode.
- various color fro slotting differentiation.
- Note: combined with V type plug-in/ unplug assistance, type 160 has standard and 2.54mm offset to support CPCI two types of power supply.

combined CPCI guiding rail A



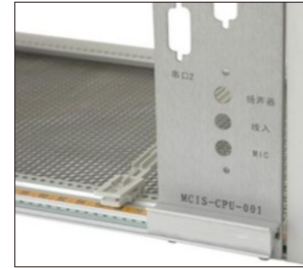
- three sectioned 4 TE, middle section + two end sections
 - used for 1.6mm - 2.0mm rated thickness
 - aluminum middle section can be customized.
- Note: used with type v plug-in/ unplug assistance

combined CPCI guiding rail B



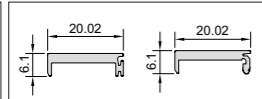
- used for PCB and guiding rails' insulation, length can be customized.
- Note: used with type v plug-in/ unplug assistance.

aluminum handle



- material: extruded aluminum section bar
- surface finish: anodic oxidation, chromate passivation or powder coating
- customized width

type U panel



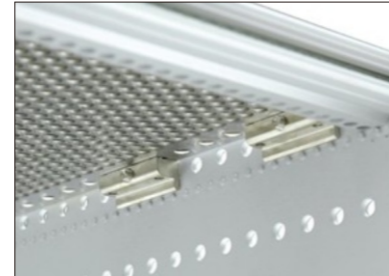
- material: extruded aluminum section bar
- surface finish: hair brush or anodic oxidation, chromate passivation, powder coating or spray paint.
- width: 4TE, 5TE, 6TE, 7TE, 8TE, 9TE, 10TE, 10TE, 12TE, 14TE, 16TE, height, holes and printing conform to the customer drawing.

PCB installing stopper



- used as PCB installing stopper and position fixing.

cover plate fixing block



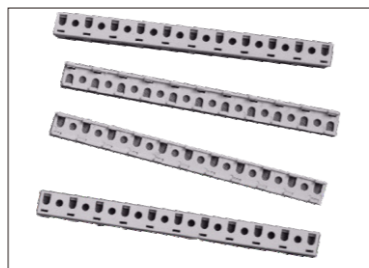
- used for attaching side panel and cover plate

screw bar



- used for assembling front panel and mother board

insulation bar



- used for crossbeam and mother board insulation

guiding rail ESD discharging legs



- used for PCB discharging during plugging and unplugging, attached to guiding rails for reliable grounding to casing.

guiding rail spring



- used for ESD discharging from PCB plugging and unplugging, attached to guiding rails for reliable grounding to casing.

shielding crossbeam



- used for casing shielding, material: stainless steel, standard width 84 TE

cover plate shielding bar



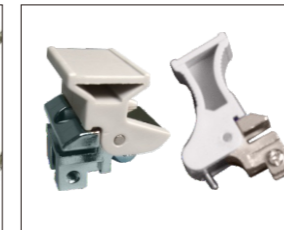
- used for casing shielding, material: stainless steel, standard width 84TE

front panel



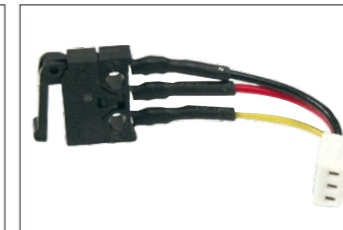
- used for casing shielding, material: stainless steel, standard width 3U, 4U, 6U, 9U

type I II puller



- black or gray color, used for front panel and PCB plug and unplug, appropriate for DIN 41612 connector.

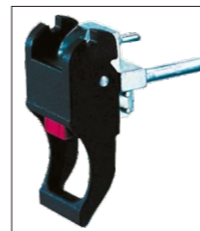
micro switch



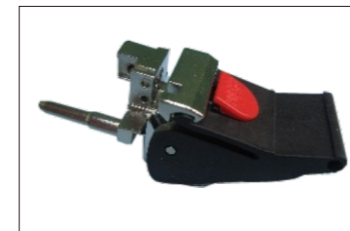
type V puller A



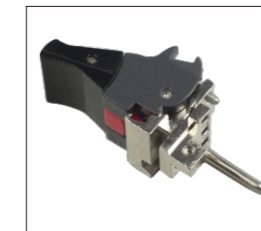
type V puller B



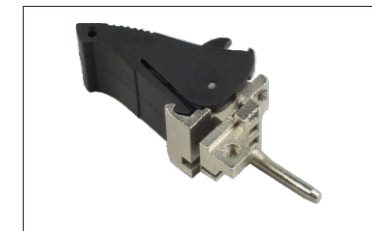
type V puller C



type V puller D



type V puller E



standard type and 2.54mm offset type supporting CPCI power supply

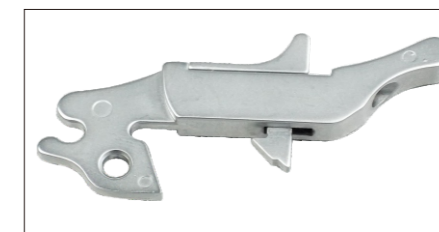
type V puller F



HARTING puller



ATCA puller



PCB fixing block



Technical specification

What is 19" (482,6mm)?

- 19" or 482.6mm refers to the front panel width of rack type equipment
- PCB is fixed to the front panel, front panel is fixed to the casing through the guiding rails.
- 19" technical standards specifies all components' dimensions, even the component types, for example, Eurocard, Double-Eurocard, back panel, connector dimensions., Eurocard, Double-Eurocard,
- it has been the recognized standard for casing and cabinet

Typical dimensions

Height

3U (appropriate for Euro-cards)

3 X 44.45mm = 133.35mm

6U (appropriate for double Euro-card)

6 X 44.45mm = 266.7mm

Width

4 HP (equivalent to 1 slot of a backplane)

4 x 5.08mm = 20.32 mm

Depth

160 mm (appropriate for Euro-card / double Euro-card)

19" technical advantages,

- provide the best installing conditions for electric components
- support forward, backward compatibility
- outer dimensions of front panel and board card is defined.
- plug-in modulation optimizes electronic components' installation
- it is the most popular standard in the industry
- plug-in components can save time for maintenance and repair

Dimensions

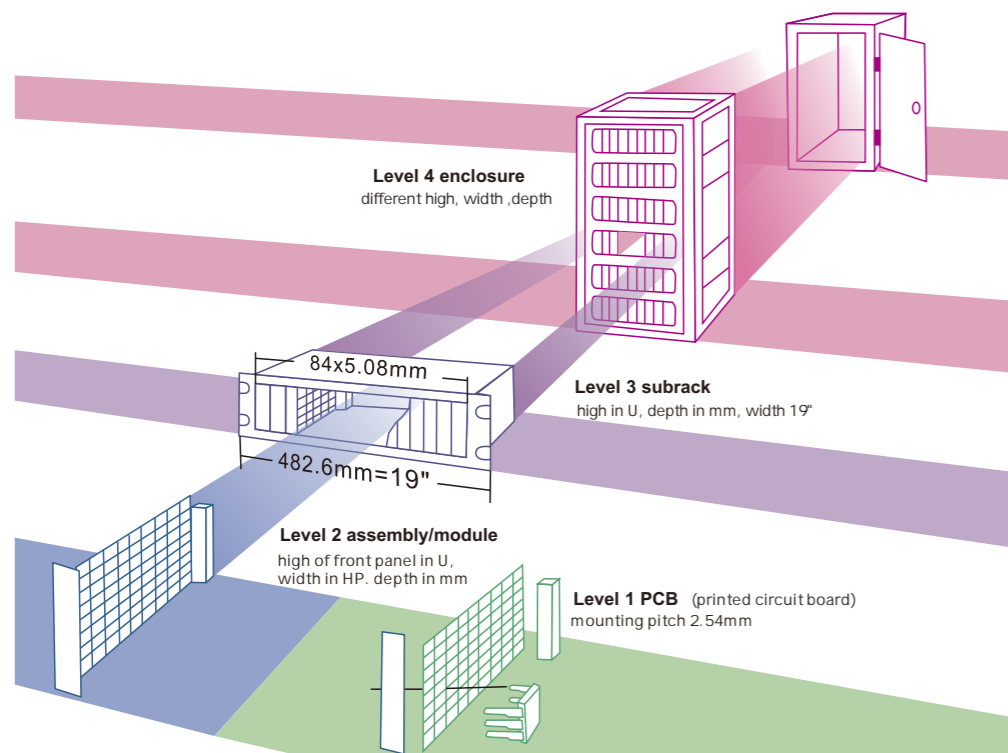
Height in U (Units)

1 U = 44.45 mm (1 3/4")

Width in HP (Height Pitch)

1 HP = 5.08 mm (2/10 ")

Depth: in mm



19" - standard :
from board level
to cabinets for
electronic
systems

IEC 60297 -1 to-4
DIN IEC 297-3
DIN EN 60297
GB/T19520

Technical specification

conversion table:U/HP, unit: mm (inch)

U# theoretical height in metric

U	mm	inch	U	mm	inch	U	mm	inch
1	44.45	1.75	19	844.55	33.25	37	1644.65	64.75
2	88.90	3.50	20	889.00	35.00	38	1689.10	66.50
3	133.35	5.25	21	933.45	36.75	39	1733.55	68.25
4	177.80	7.00	22	977.90	38.50	40	1778.00	70.00
5	222.25	8.75	23	1022.35	40.25	41	1822.45	71.75
6	266.70	10.50	24	1066.80	42.00	42	1855.90	73.50
7	311.15	12.25	25	1111.25	43.75	43	1911.35	75.25
8	355.60	14.00	26	1155.70	45.50	44	1955.80	77.00
9	400.06	15.75	27	1200.75	47.25	45	2000.25	78.75
10	444.50	17.50	28	1244.60	49.00	46	2044.70	80.50
11	488.95	19.25	29	1289.05	50.75	47	2089.15	82.25
12	533.40	21.00	30	1333.50	52.50	48	2133.60	84.00
13	577.85	22.75	31	1377.95	54.25	49	2178.05	85.75
14	622.30	24.50	32	1422.40	56.00	50	2222.50	87.50
15	666.75	26.25	33	1466.85	57.75	51	2266.95	89.25
16	711.20	28.00	34	1511.30	59.50	52	2311.40	91.00
17	755.65	29.75	35	1555.75	61.25	53	2355.85	92.75
18	800.10	31.50	36	1600.20	63.00	54	2400.30	94.50

casing actual height(mm/inch)

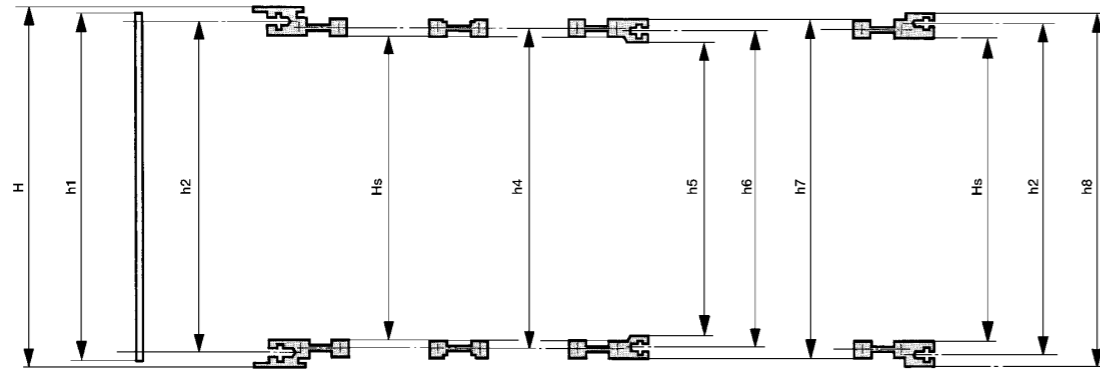
U	mm	inch	U	mm	inch	U	mm	inch	U	mm	inch
1	43.60	1.71	6	265.95	10.46	11	488.10	19.21	16	710.35	27.96
2	88.05	3.45	7	310.30	12.21	12	532.56	20.96	17	754.80	29.71
3	132.50	5.27	8	354.75	13.96	13	577.00	22.71	18	799.25	31.46
4	176.95	6.96	9	399.20	15.71	14	621.45	24.46			
5	221.40	8.71	10	443.65	17.46	15	665.90	26.21			

HP width table

HP	mm	inch	HP	mm	inch	HP	mm	inch
1	5.08	0.20	29	147.32	5.80	57	289.56	11.40
2	10.16	0.40	30	152.40	6.00	58	294.64	11.60
3	15.24	0.60	31	157.48	6.20	59	299.72	11.80
4	20.32	0.80	32	162.56	6.40	60	304.80	12.00
5	25.40	1.00	33	167.64	6.60	61	309.88	12.20
6	30.48	1.20	34	172.72	6.80	62	314.96	12.40
7	35.56	1.40	35	177.80	7.00	63	320.04	12.60
8	40.64	1.60	36	182.88	7.20	64	325.12	12.80
9	45.72	1.80	37	187.96	7.40	65	330.20	13.00
10	50.80	2.00	38	193.04	7.60	66	335.28	13.20
11	55.88	2.20	39	198.12	7.80	67	340.36	13.40
12	60.96	2.40	40	203.20	8.00	68	345.44	13.60
13	66.04	2.60	41	208.28	8.20	69	350.52	13.80
14	71.12	2.80	42	213.36	8.40	70	355.60	14.00
15	76.20	3.00	43	218.44	8.60	71	360.68	14.20
16	81.28	3.20	44	223.52	8.80	72	365.76	14.40
17	86.36	3.40	45	228.60	9.00	73	370.84	14.60
18	91.44	3.60	46	233.68	9.20	74	375.92	14.80
19	96.52	3.80	47	238.76	9.40	75	381.00	15.00
20	101.60	4.00	48	243.84	9.60	76	386.08	15.20
21	106.68	4.20	49	248.92	9.80	77	391.16	15.40
22	111.76	4.40	50	254.00	10.00	78	396.24	15.60
23	116.84	4.60	51	259.08	10.20	79	401.32	15.80
24	121.92	4.80	52	264.16	10.40	80	406.40	16.00
25	127.00	5.00	53	269.24	10.60	81	411.48	16.20
26	132.08	5.20	54	274.32	10.80	82	416.56	16.40
27	137.16	5.40	55	279.40	11.00	83	421.64	16.60
28	142.24	5.60	56	284.48	11.20	84	426.72	16.80
						85	431.80	17.00

Technical specification

rack height



dimensions (mm):

Item height	H	Hs	h1	h2	h4	h5	h6	h7	h8
1U	43.60	23.60	39.80	33.60	29.60	19.20	27.80	36.40	41.10
2U	88.05	68.05	84.25	78.05	74.05	63.65	72.25	80.85	85.55
3U	132.50	112.50	128.70	122.50	118.50	108.10	116.70	125.30	130.00
4U	176.95	156.95	173.15	166.95	162.95	152.55	161.15	169.75	174.45
5U	221.40	201.40	217.60	211.40	207.40	197.00	205.60	214.20	218.90
6U	265.85	245.85	262.05	255.85	251.85	241.45	250.05	258.65	263.35
7U	310.30	290.30	306.50	300.30	296.30	285.90	294.50	303.10	307.80
8U	354.75	334.75	350.95	344.75	340.75	330.35	338.95	347.55	352.25
9U	399.20	379.20	395.40	389.20	385.20	374.80	383.40	392.00	396.70
10U	443.65	423.65	439.85	433.65	429.65	419.25	427.85	436.45	441.15
11U	488.10	468.10	484.30	478.10	474.10	463.70	472.30	480.90	485.60
12U	532.55	512.55	528.75	522.55	518.55	508.15	516.75	525.35	530.05

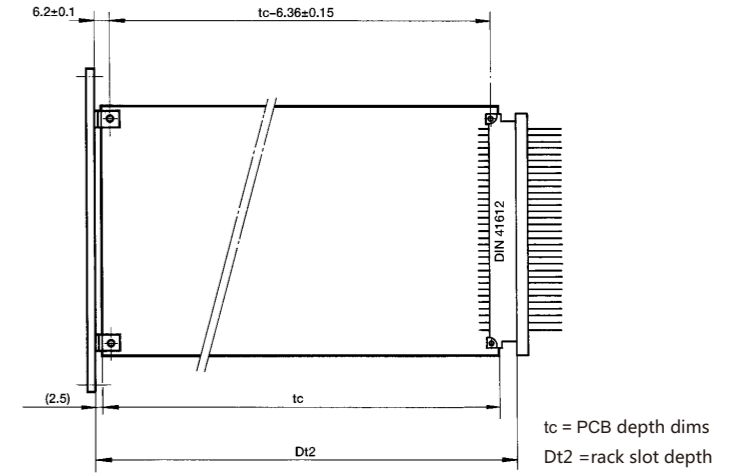
dimensions (inch):

Item height	H	Hs	h1	h2	h4	h5	h6	h7	h8
1U	1.71	0.92	1.56	1.32	1.16	0.75	1.09	1.43	1.61
2U	3.46	2.67	3.31	3.07	2.91	2.50	2.84	3.18	3.36
3U	5.21	4.42	5.06	4.82	4.66	4.25	4.59	4.93	5.11
4U	6.96	6.17	6.81	6.57	6.41	6.00	6.34	6.68	6.86
5U	8.71	7.92	8.56	8.32	8.16	7.75	8.09	8.43	8.61
6U	10.46	9.67	10.31	10.07	9.91	9.50	9.84	10.18	10.36
7U	12.21	11.42	12.06	11.82	11.66	11.25	11.59	11.93	12.11
8U	13.96	13.17	13.81	13.57	13.41	13.00	13.34	13.68	13.86
9U	15.71	14.92	15.56	15.32	15.16	14.75	15.09	15.43	15.61
10U	17.46	16.67	17.31	17.07	16.91	16.50	16.84	17.18	17.36
11U	19.21	18.42	19.06	18.82	18.66	18.25	18.59	18.93	19.11
12U	20.96	20.17	20.81	20.57	20.41	20.00	20.34	20.68	20.86

Technical specification

Plug-in PCB assembly dimensions

Front panel and connector comply to IEC 60297-3/-4

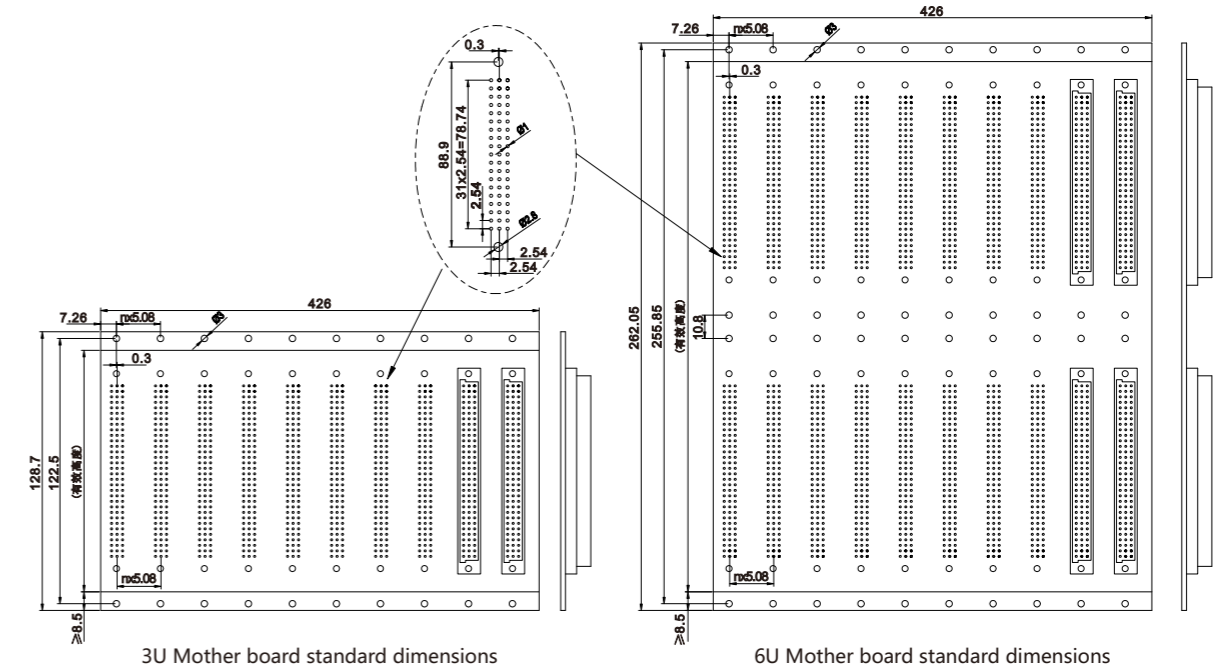


Unit(mm):

connector type	rack slot depth	tc 160 mm	tc 220 mm	tc 280 mm	tc 340 mm	tc 400 mm
BCDEMQRS	Dt2	169.93 ± 0.4	229.93 ± 0.4	289.93 ± 0.4	349.93 ± 0.4	409.93 ± 0.4
FGHUV	Dt2	171.93 ± 0.4	231.93 ± 0.4	291.93 ± 0.4	351.93 ± 0.4	411.93 ± 0.4

Unit(inch)

connector type	rack slot depth	tc 6.290	tc 8.660	tc 11.020	tc 13.380	tc 15.740
BCDEMQRS	Dt2	6.69 ± 0.01	9.05 ± 0.01	11.41 ± 0.01	13.77 ± 0.01	16.13 ± 0.01
FGHUV	Dt2	6.76 ± 0.01	9.13 ± 0.01	11.49 ± 0.01	13.85 ± 0.01	16.21 ± 0.01

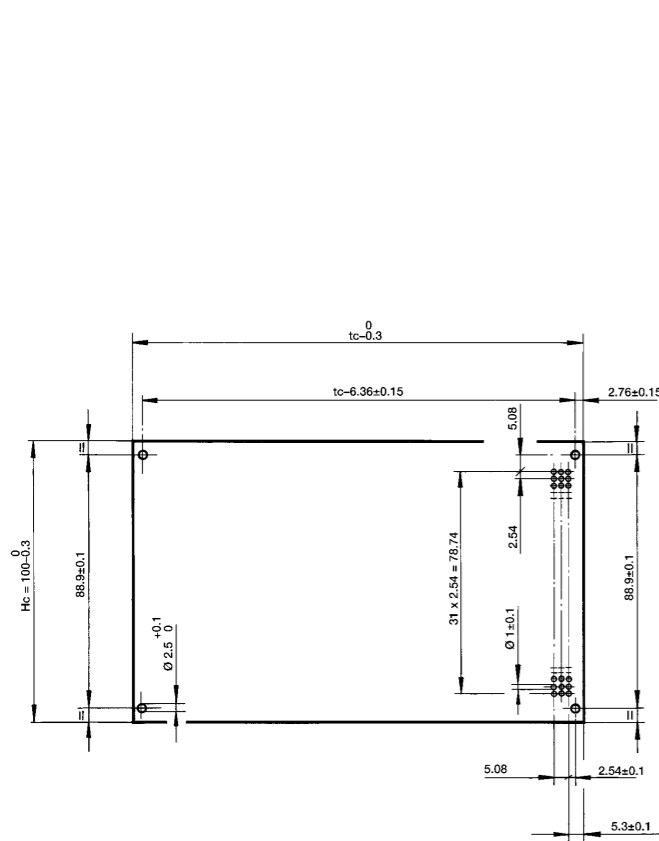


PCB dimensions

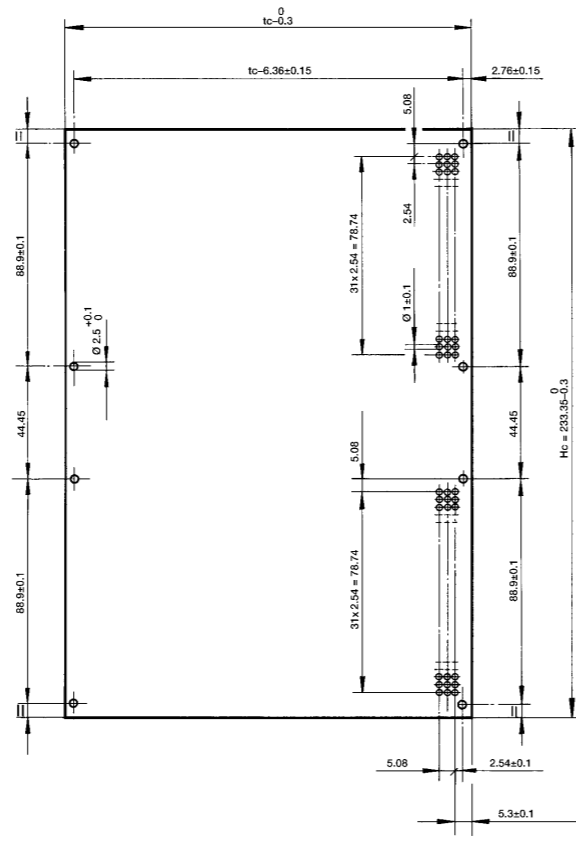
Standard dimensions
All dimensions comply to IEC 60297-3

casing	plug-in board		plug-in board		plug-in board depth(tc)					
	Height Hc		Height Hc		100 mm	160 mm	220 mm	280 mm	340 mm	400 mm
	row 1	row 2	row 1	row 2						
mm	inch	mm	inch							
					3.930	6.290	8.660	11.020	13.380	15.740
2U	55.55	2.18	67.31	2.65	x			x	x	x
3U	100.00	3.93	111.76	4.40	x	x	x	x	x	x
4U	144.45	5.68	156.20	6.15	x	x	x	x	x	x
5U	188.90	7.43	200.65	7.90	x			x		x
6U	233.35	9.18	245.10	9.65	x	x	x	x	x	x
7U	277.80	10.93	289.55	11.40	x	x	x	x	x	x
8U	322.25	12.68	334.00	13.15	x			x		x
9U	366.70	14.43	378.45	14.90	x	x	x	x	x	x
10U	411.15	16.18	422.90	16.65	x	x	x	x	x	x
11U	455.60	17.93	467.35	18.40	x	x	x	x	x	x
12U	500.05	19.68	511.80	20.15	x	x	x	x	x	x

The above mentioned dimensions are theoretical assembly dimensions. Give priority to those marked

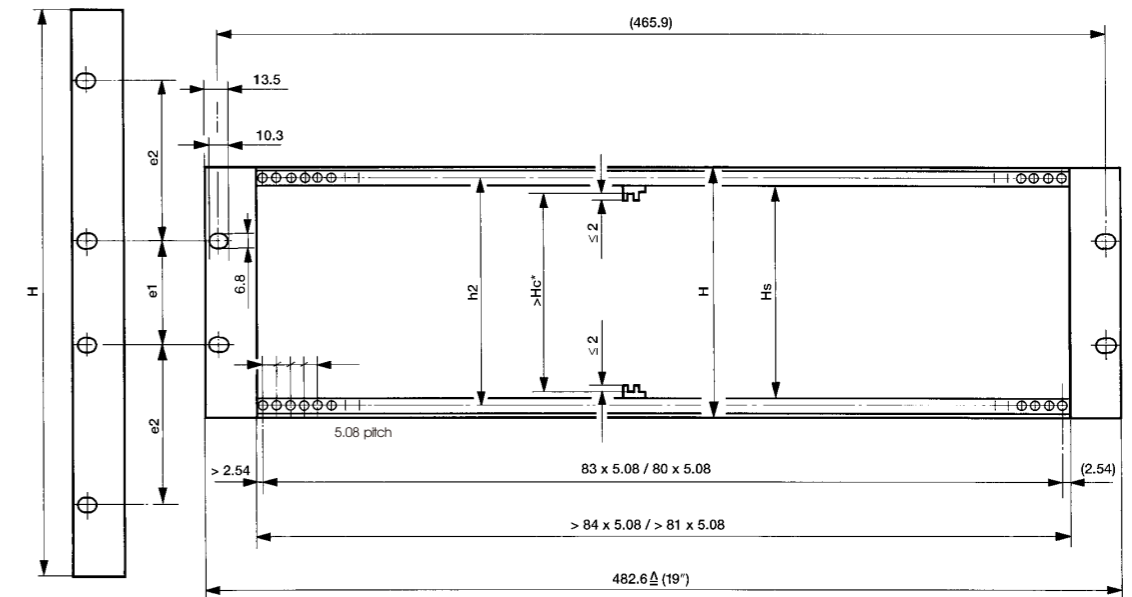


3U plug-in board standard dimensions



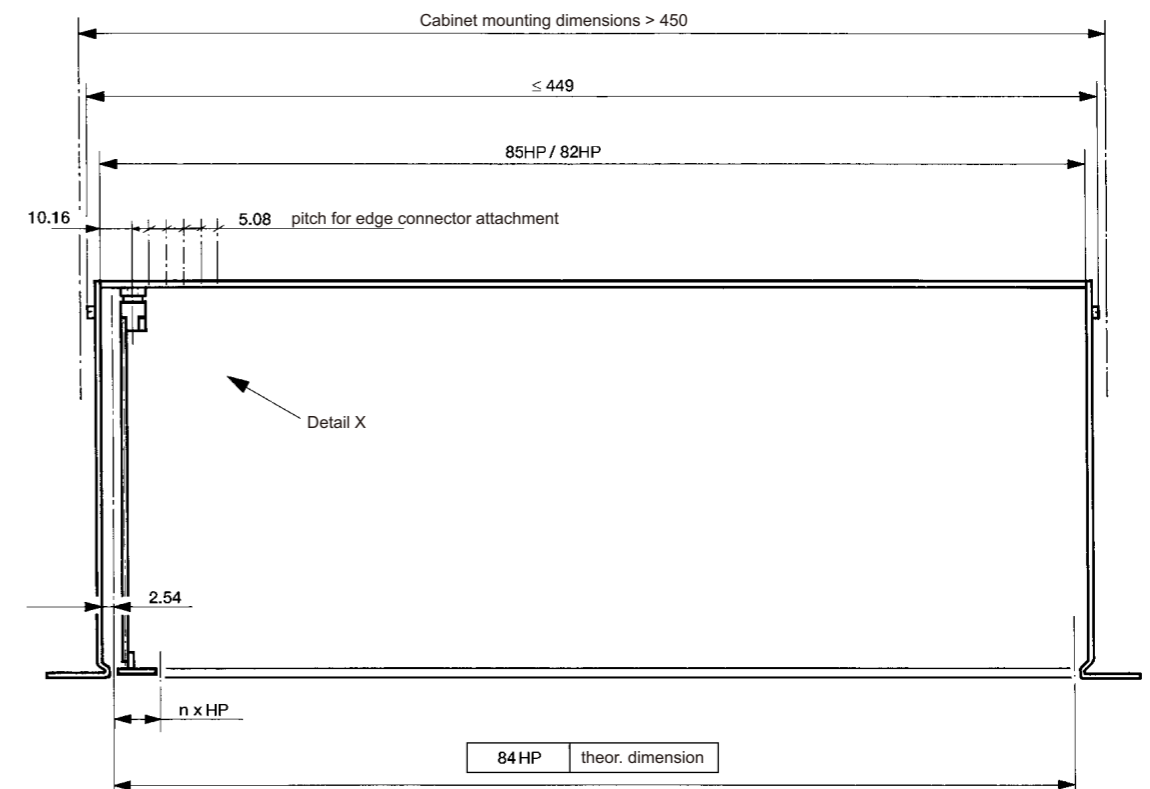
6U plug-in board standard dimensions

Front view



*Hc = For card height

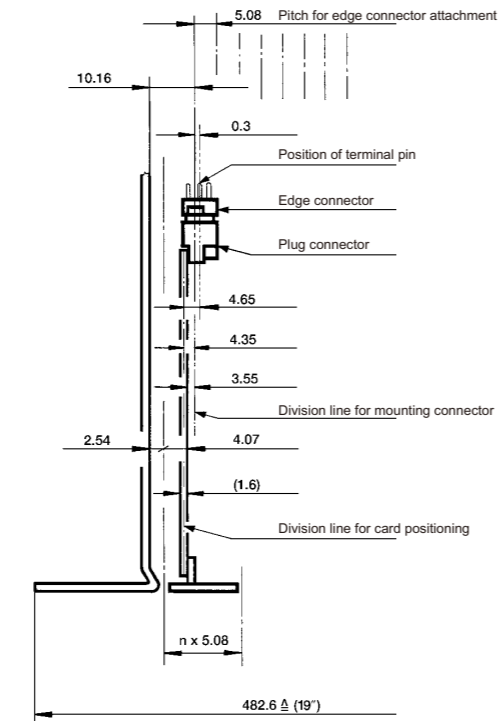
Top view



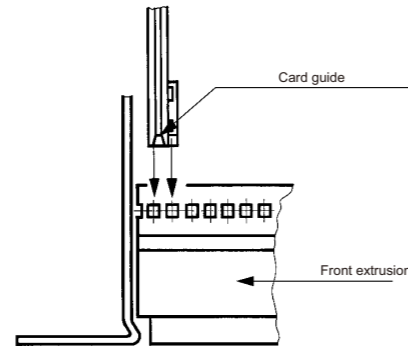
dimensions:

standard height	H mm	H inch	e1 mm	e1 inch	e2 mm	e2 inch	h2 mm	h2 inch	Hs mm	Hs inch
1U	43.60	1.71	31.75	1.25	-	-	33.60	1.32	23.60	0.92
2U	88.05	3.46	76.2	3.00	-	-	78.05	3.07	68.05	2.67
3U	132.50	5.21	57.15	2.25	-	-	122.50	4.82	112.50	4.42
4U	176.95	6.96	101.6	4.00	-	-	166.95	6.57	156.95	6.17
5U	221.40	8.71	146.1	5.75	-	-	211.40	8.32	201.40	7.92
6U	265.85	10.46	190.5	7.50	-	-	255.85	10.07	245.85	9.67
7U	310.30	12.21	57.15	2.25	88.9	3.50	300.30	11.82	290.30	11.42
8U	354.75	13.96	76.2	3.00	101.6	4.00	344.75	13.57	334.75	13.17
9U	399.20	15.71	120.6	4.74	101.6	4.00	389.20	15.32	379.20	14.92
10U	443.65	17.46	165.1	6.50	101.6	4.00	433.65	17.07	423.65	16.67
11U	488.10	19.21	146.1	5.75	133.3	5.24	478.10	18.82	468.10	18.42
12U	532.55	20.96	190.6	7.50	133.3	5.24	522.55	20.57	512.55	20.17

Detail X
The first PCB plug-in board assembly location

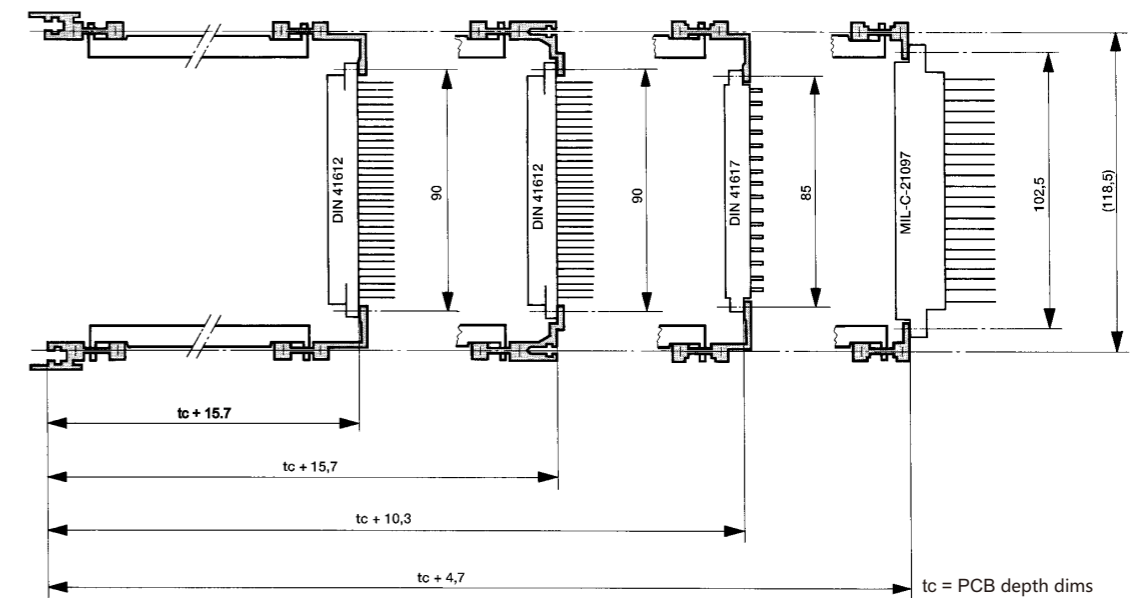
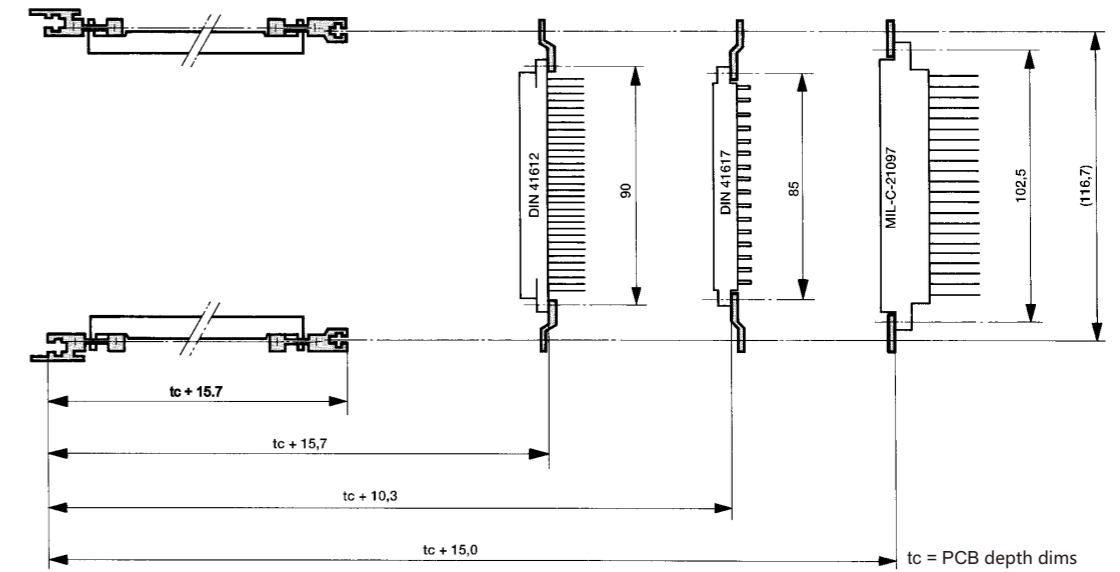


The first PCB plug-in board guiding rail assembly



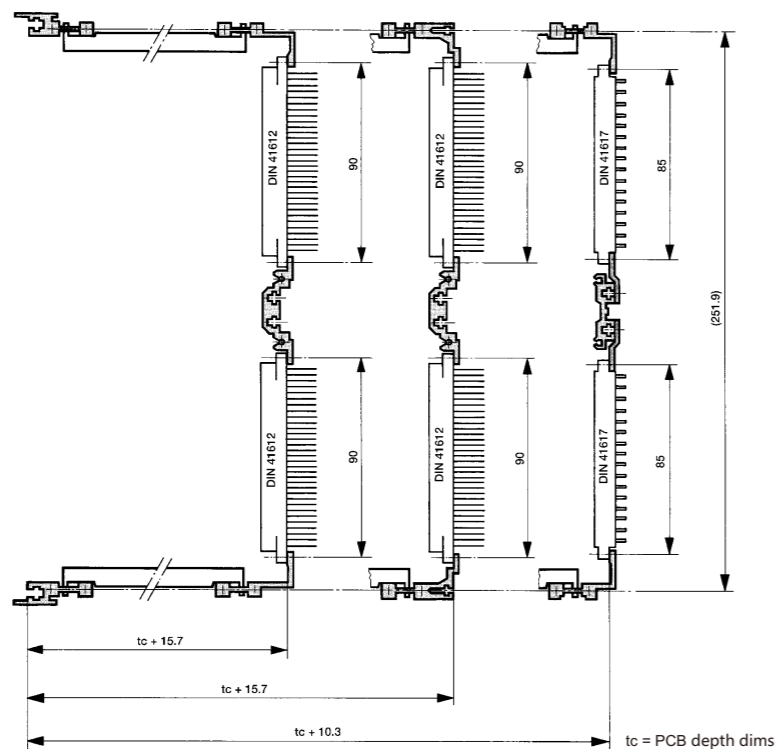
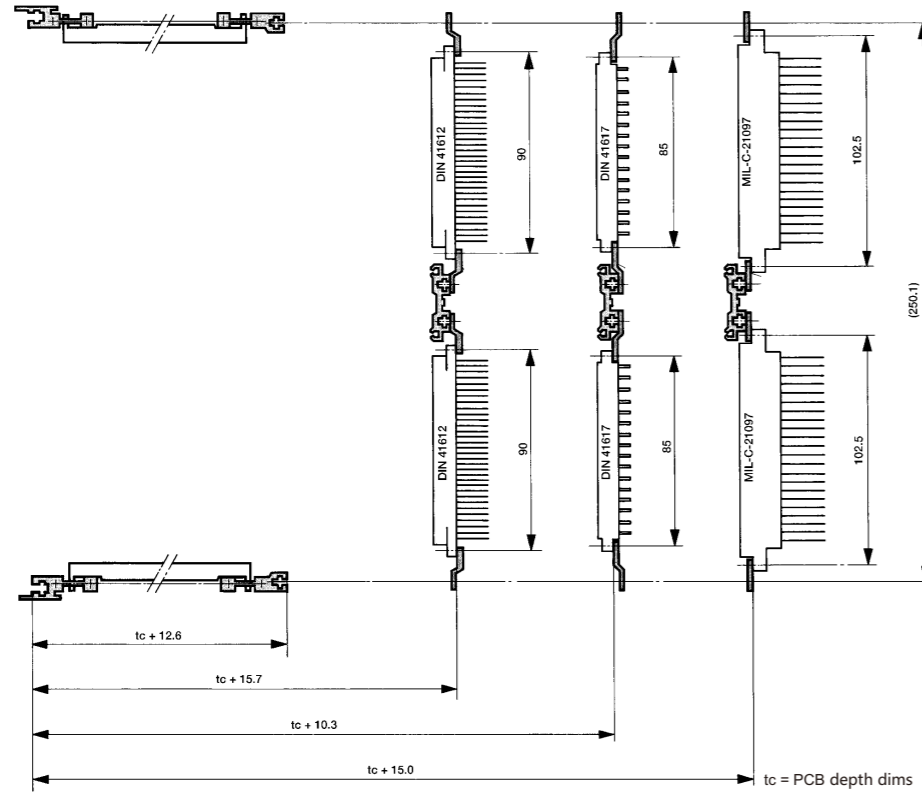
3U rack standard

Depth dimensions for connectors (inside section bar)

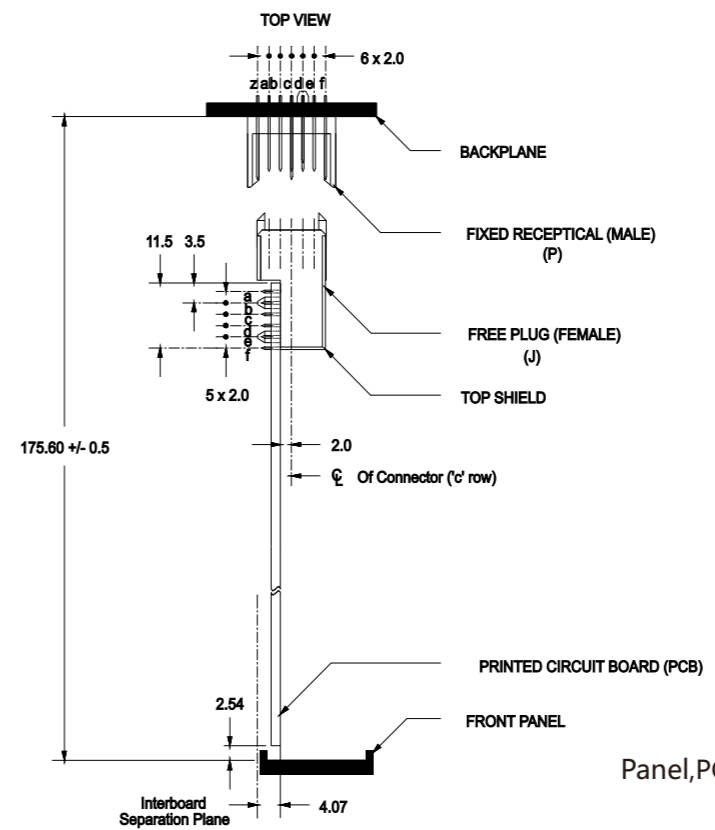
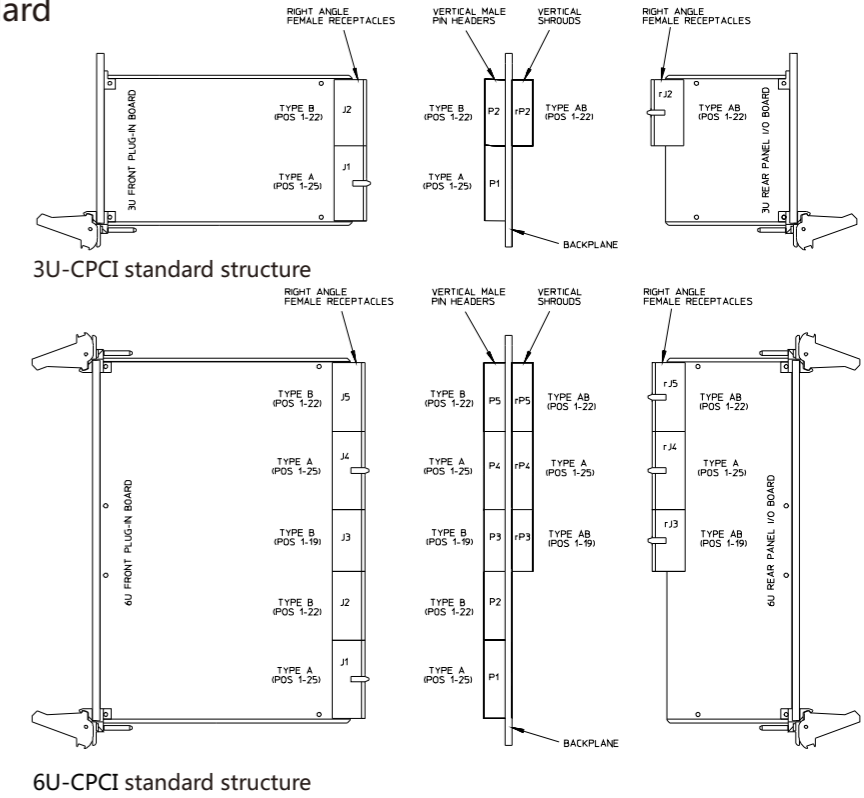


6U rack standard

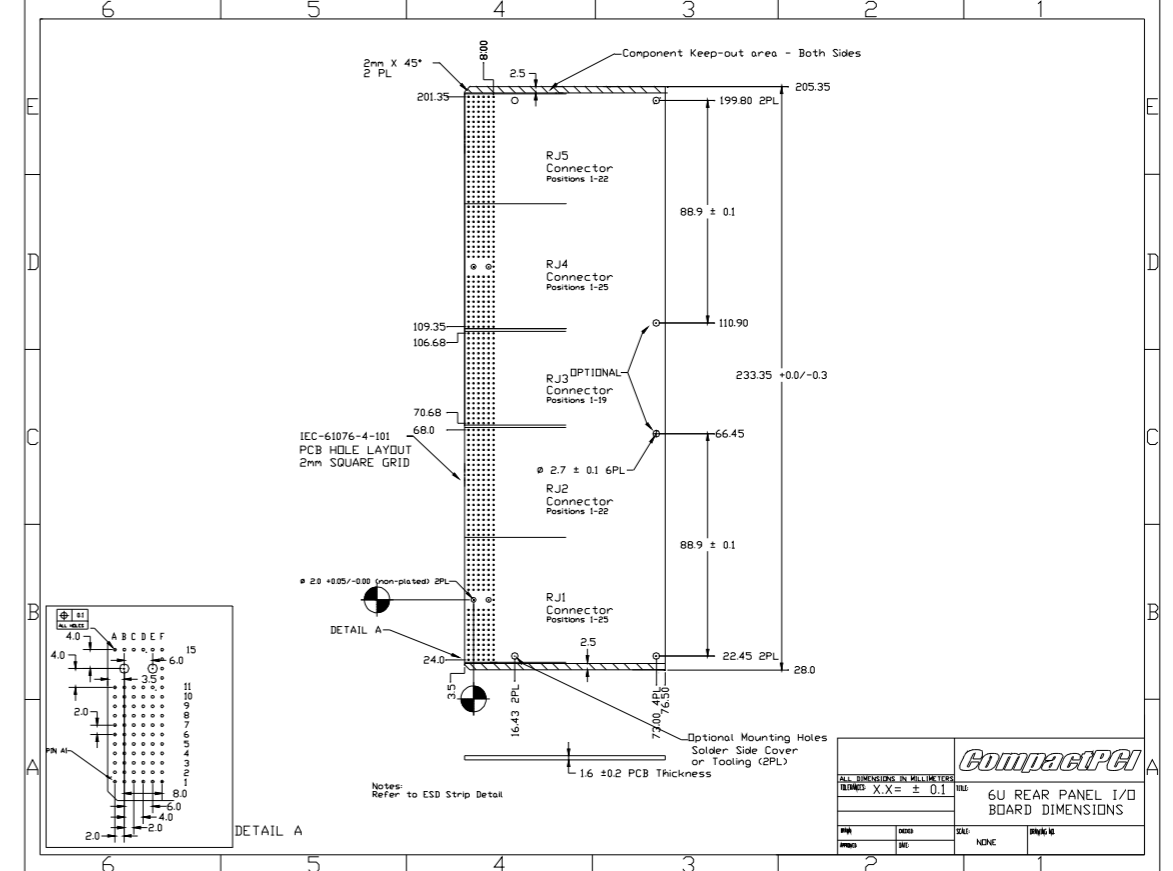
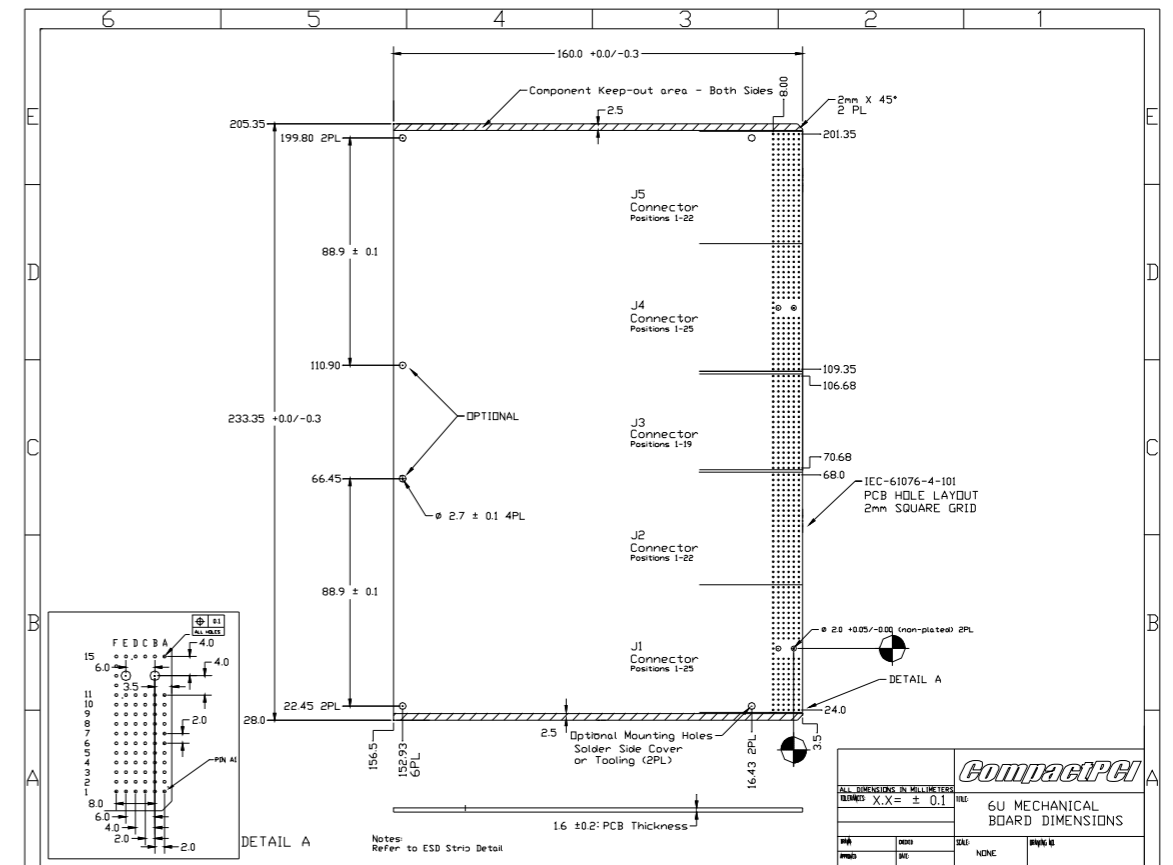
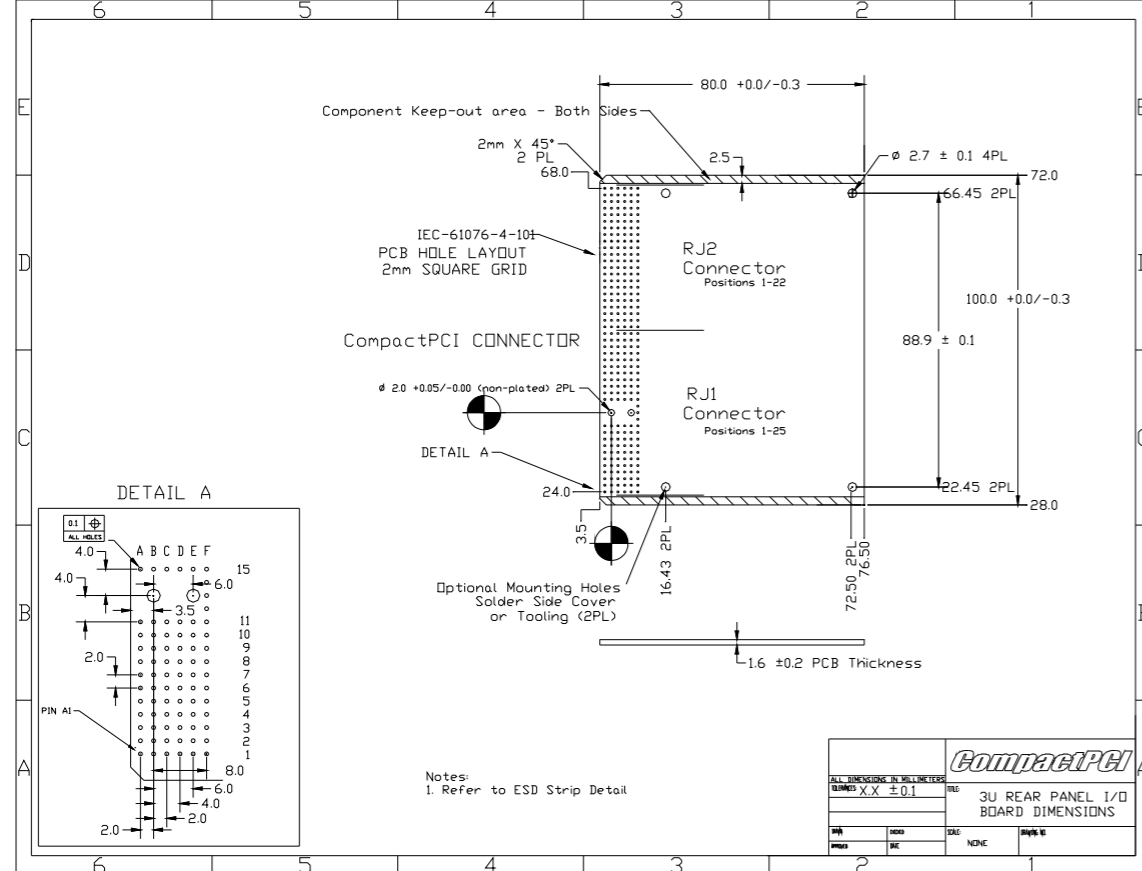
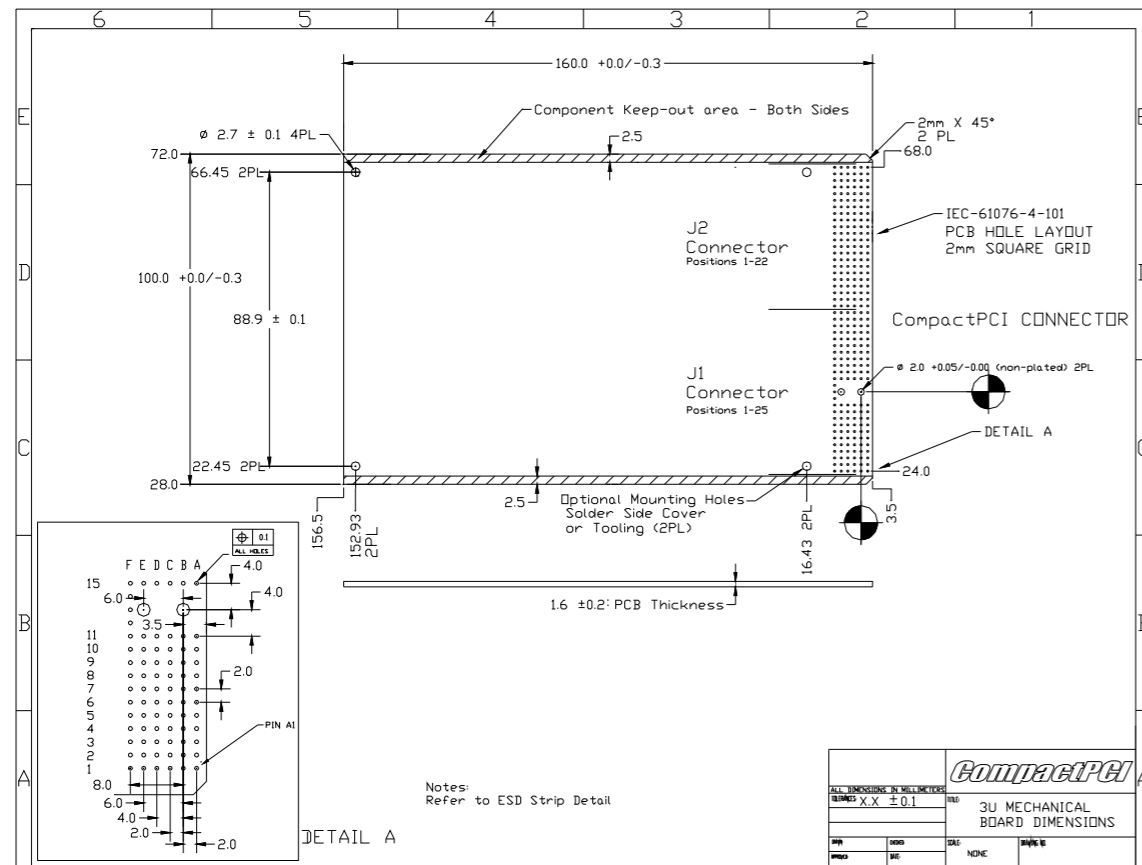
Depth dimensions for connectors(inside section bar)

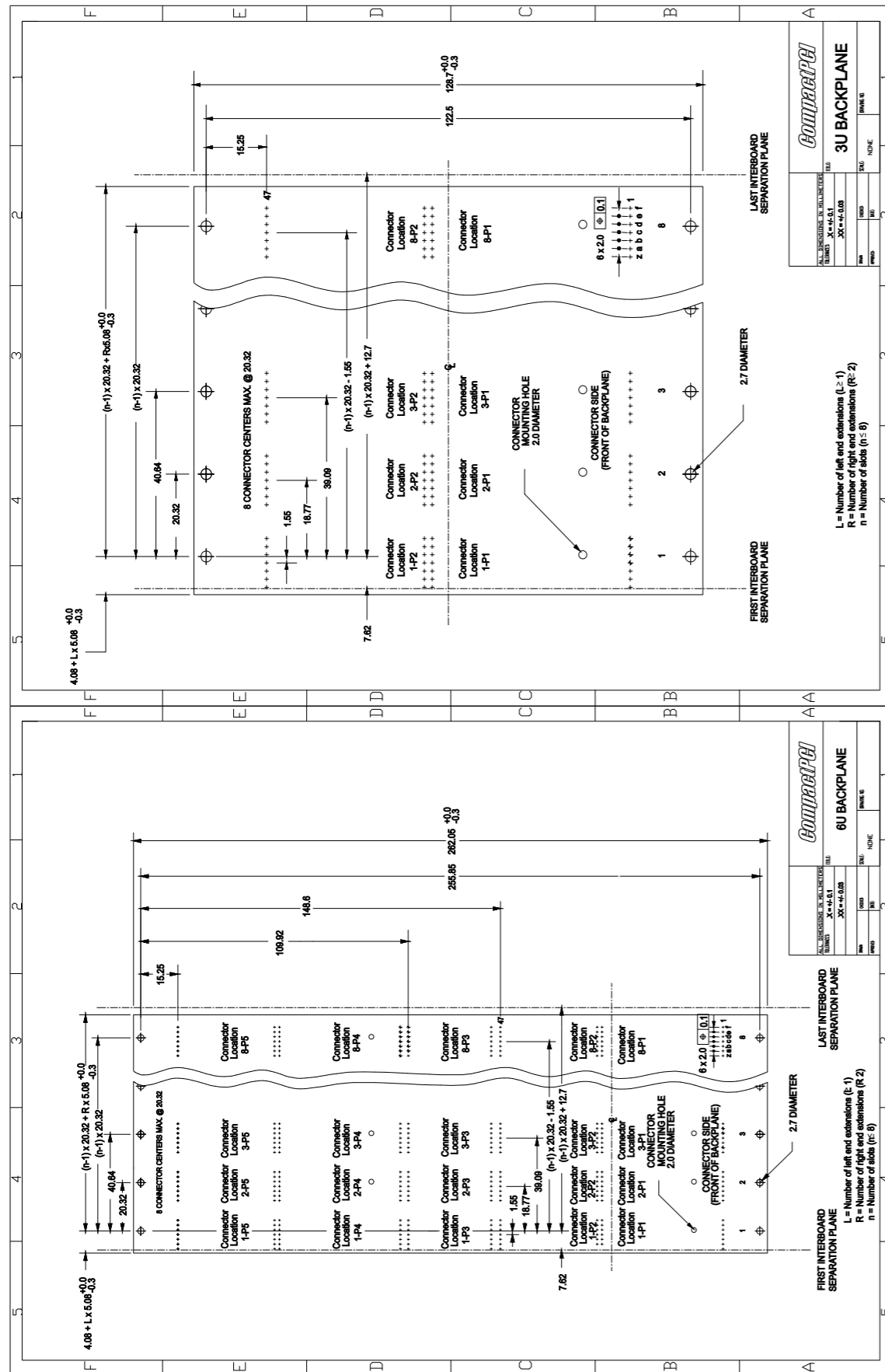


CompactPCI standard



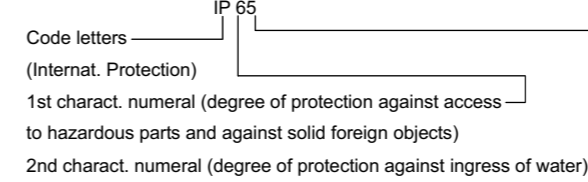
Panel,PCB and connector assembly dimensions drawing





IP protection Introduction

The degree of protection is indicated in the following way:



The following charts 11 an 12 give an overview about all protection degrees.

1st charact. numeral	Brief description	Definition	2nd charact. numeral	Brief description	Definition
0	Non-protected	-	0	Non-protected	-
1	Protected against access to hazardous parts with the back of a hand. Protected against solid foreign objects of 50mm Ø.	The probe, sphere of 50mm Ø, shall not fully penetrate and shall have adequate clearance from hazardous parts.	1	Protected against vertically falling water drops.	Vertically falling drops shall have no harmful effects.
2	Protected against access to hazardous parts with a finger. Protected against solid foreign objects of 12.5mm Ø.	The jointed test finger of 12mm Ø, 80mm length, shall have adequate clearance from hazardous parts. The probe, sphere of 12.5mm Ø, shall not fully penetrate.	2	Protected against vertically falling water drops when enclosure tilted up to 15	Vertically falling drops shall have no harmful effects when the enclosure is tilted at any angle up to 15 on either side of the vertical.
3	Protected against access to hazardous parts with a tool. Protected against solid foreign objects of 2.5mm Ø.	The probe of 2.5mm Ø shall not penetrate at all.	3	Protected against spraying water	Water sprayed at an angle up to 60 on either side of the vertical shall have no harmful effects.
4	Protected against access to hazardous parts with a wire. Protected against solid foreign objects of 1mm Ø.	The probe of 1mm Ø shall not penetrate at all.	4	Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effects.
5	Protected against access to hazardous parts with a wire. Dust-protected.	The probe of 1mm Ø shall not penetrate. Intrusion of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the device or to impair safety.	5	Protected against water jets	Water projected in jets against the enclosure from any direction shall have no harmful effects.
6	Protected against access to hazardous parts with a wire. Dust-tight.	The probe of 1mm Ø shall not penetrate. No intrusion of dust.	6	Protected against powerful water jets	Water projected in powerful jets against the enclosure from any direction shall have no harmful effects.
7			7	Protected against the effects of temporary immersion in water	Intrusion of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water for 30 min. In 1m depth.
8			8	Protected against the effects of continuous immersion in water	Intrusion of water in quantities causing harmful effects shall not be possible when the enclosure is continuously immersed in water under conditions which shall be agreed between manufacturer and user but which shall be agreed between manufacturer and user but which are more severe than for numeral 7.