



ZARGES



19" Rackmount Cases

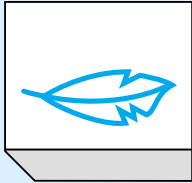


www.zarges-cases.com

**Special 19" cases for
electronics and military equipment**

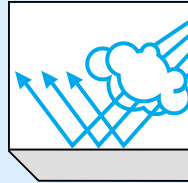
→ ZARGES Transportation Systems and Reusable Packaging in Aluminum.

Make sense from an economic, safe and ecological point of view:



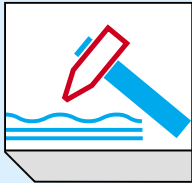
Aluminum is a material that is light in weight and highly stable:

The density of aluminum is only around 2.6 to 2.8 g/cm³. This is approximately 1/3rd of the density of steel. Despite its low weight aluminum features very high strength characteristics.



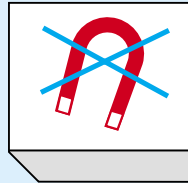
Aluminum is impervious to water vapour:

Even under extremely long-term storage conditions, it is impossible for moisture to penetrate the material. By means of welding it is possible to fabricate an aluminum container so that it is resistant to water vapour.



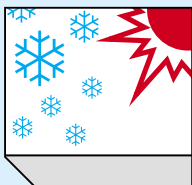
Aluminum is resistant to impact and very strong:

The surface may be dented by impact but the impact energy is absorbed by the distortion.



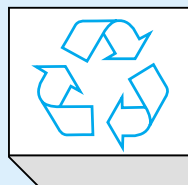
Aluminum is magnetically neutral:

Aluminum is free from ferro-magnetism. This material characteristic may assume major importance in certain areas of application.



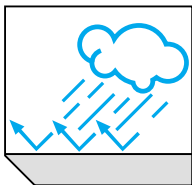
Aluminum is not sensitive to extreme fluctuations in temperature:

In the temperature range of -238 to +302 °F the material characteristics remain constant.



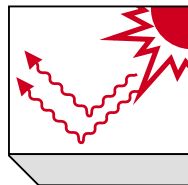
Aluminum is fully recyclable:

Old aluminum can be melted down and re-used – a positive contribution towards relieving the burden of waste disposal and protecting the environment.



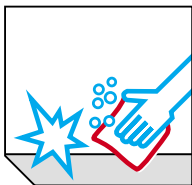
Aluminum is resistant to corrosion and has a built-in defensive response:

On contact with oxygen the surface develops an oxide layer which is reinstated immediately if damage occurs.



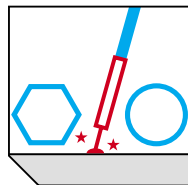
Aluminum is resistant to UV radiation:

Long storage periods and use under exposure to UV rays have no effect on this material.



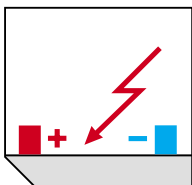
Aluminum is hygienic:

The smooth surface is easy to clean and neutral in terms of odour. Aluminum containers are eminently suitable for areas where hygiene is a primary requirement.



Aluminum lends itself to machining in a number of different ways:

All the standard machining processes – welding, moulding etc. – can be applied to aluminum and can be carried out very much more cost-efficiently than is the case with other metals.



Aluminum conducts electricity:

Aluminum is a good conductor of electricity and heat, an advantage with Rackmount Cases for electronic installations for example.



ZARGES, a leading company in the aluminum processing sector, has recognised the advantages of this material for decades. The result is a wide range of boxes, crates, cases, baskets, trolleys and individual special designs which will help you find solutions to your logistics problems. Our long-lasting reusable equipment makes a valuable contribution to protecting the environment.

Mitraset® 19" Rackmount Cases according to **VG 95446** are designed to accommodate electronic devices in a 19" rack. They also protect equipment against general environmental effects such as impact, shock and vibration, protection against electromagnetic interferences such as radio waves, lightning etc., as well as general environmental effects such as heat, humidity, dust etc. To meet these stringent requirements Mitraset® 19" Rackmount Cases have spe-

cial design features: casing constructed of precision welded high tensile aluminum sheets to which an elastically suspended anti-vibration frame, made of extrusions, is fitted. The device to be protected is inserted into this frame and screwed in. The anti-vibration frame is connected to the casing via rails and rubber shock mounts, with the material and type of mount selected in accordance with requirements.



Mitraset® 19" Rackmount Cases

Details

- Protection class IP 65 in accordance with DIN 40 050 and ICE 34-5/529 through seam welded housing and lid with sealed gasket.
- Base with stacking bars, top sheet with stacking recesses.
- All sizes are stackable with one another (except depth 24.02").
- Inside frame made of aluminum extrusions suspended by shock mounts.
- Sides with countersunk spring loaded handles.
- All sides and lids with reinforcement ribs (except depth 24.02").
- 8 rubber mounts with slide rails to support the anti-vibration frame.
- Completely removable antivibration frame.
- Lids with quick-release fasteners.
- Available in various depths and heights.
- Extensive special range for numerous uses.
- Installation into Dornier-Shelter-Racking possible.
- **Also available as packaging in accordance with the UN regulations for transport of hazardous goods.**

→ Specifications MIL-STD-810 D



Extract from the results of testing to MIL-STD-810 D / VG 95446-2

5.11 Vibration test

Test 516.3 according to VG MIL-STD-810 D-17. The vibration test with recording of the damping is to be carried out in the 6 main directions with each 3 half-sine shocks at an acceleration of $a = 40 \text{ g}$ and pulse time $t = 7 \text{ ms}$.

5.3 Strength of carrying handles

The test item shall be suspended in the normal position and be loaded so, that 375 N will act on each handle. After that, the test item shall be suspended on each handle and be loaded with 750 N. Test duration 5 min.

5.4 Water spray and dust test

According to DIN VDE 0470-1 (VDE 0470 part 1). Degree of protection IP 65.

5.5.2 High temperature test

Test 501.2 according to VG MIL-STD-810 D-3, method 1.

5.6.2 Low temperature test

Test 502.2 according to VG MIL-STD-810 D-4, method IC 2.

5.7.2 Temperature change test

Test 503.2 according to VG MIL-STD-810 D-5, method I to III by $3 \times 4 \text{ h}$ at 160 °F and -58 °F .

5.8.2 Damp heat test

Test 507.2 according to VG MIL-STD-810 D-8, method III.

5.9.2 Vibration test

1. Test 514.3 according to VG-MIL-STD-810 D-15 figures 514.3-7, 514.3-8 and 514.3-9, depending on the vibration axis, each 10 min per axis.
2. Determination of resonance during the random-vibration under paragraph 1.
3. Random vibration according to figure 514.3-36 in the 3 main axes, each 1 hour per axis.

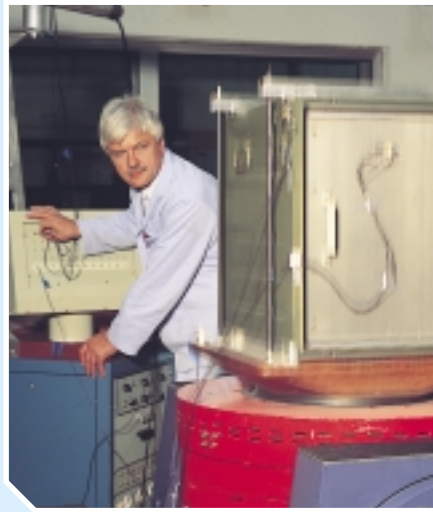
The paragraphs 1 to 3 are to be carried out in 1 axis each complete.

5.10 Deterioration in pressure chamber under oxygen

According to DIN EN 60 335-1 (VDE 0700 part 1): 1995-10, 22.23.

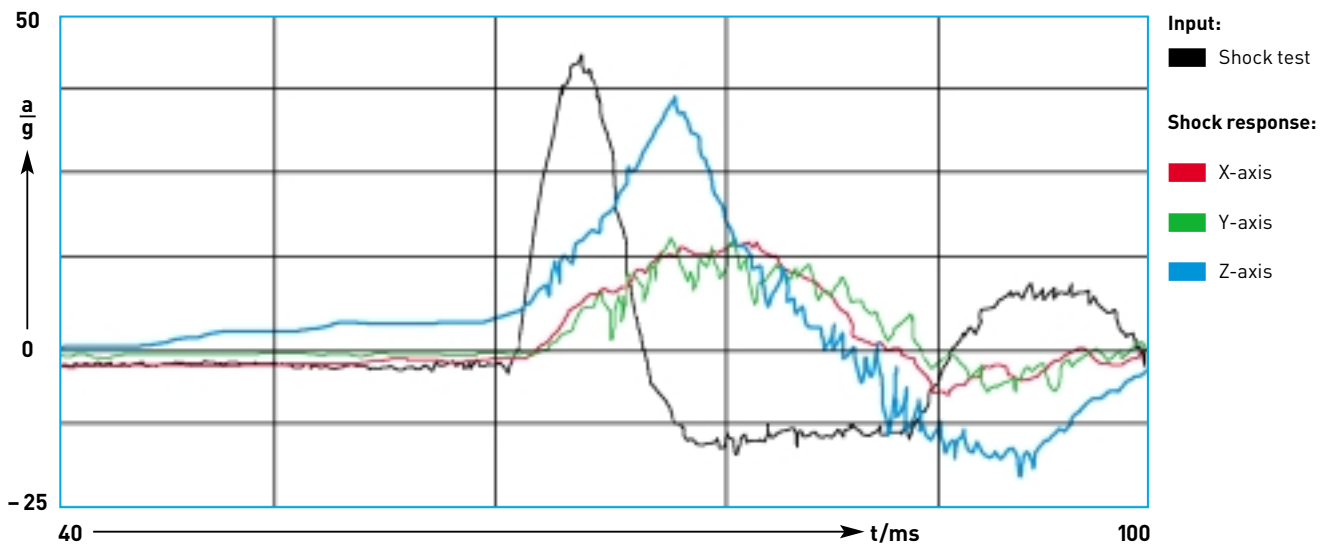
Drop test

Free fall from a height of 1.2 m on all possible impact surfaces but ensuring by way of a minimum impact at the weakest point.



Tests according to test type B. Slide-in module load according to type standard.

Example of shock stimulus



→ Dimensions and weights

Rackmount Cases

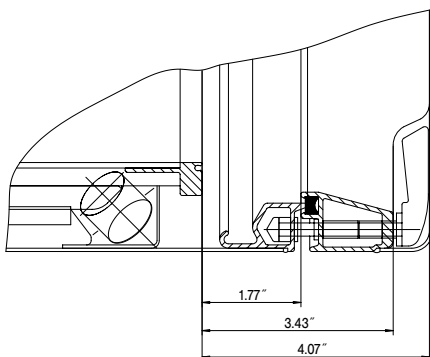
Inner height	Nominal depth in inch	Ext. dimensions of body without lid (H×W×D) approx. in inch	Weight without lid lbs
3 U	8.62	8.44 × 21.02 × 11.93	15.66
	13.78	8.44 × 21.02 × 17.09	20.07
	18.90	8.44 × 21.02 × 22.20	24.26
	24.02	8.44 × 21.02 × 27.32	26.90
4 U	8.62	10.20 × 21.02 × 11.93	16.32
	13.78	10.20 × 21.02 × 17.09	20.73
	18.90	10.20 × 21.02 × 22.20	24.92
	24.02	10.20 × 21.02 × 27.32	27.78
5 U	8.62	11.95 × 21.02 × 11.93	16.98
	13.78	11.95 × 21.02 × 17.09	21.39
	18.90	11.95 × 21.02 × 22.20	25.58
	24.02	11.95 × 21.02 × 27.32	28.89
6 U	8.62	13.70 × 21.02 × 11.93	17.64
	13.78	13.70 × 21.02 × 17.09	22.05
	18.90	13.70 × 21.02 × 22.20	26.46
	24.02	13.70 × 21.02 × 27.32	29.77
7 U	8.62	15.45 × 21.02 × 11.93	18.30
	13.78	15.45 × 21.02 × 17.09	22.71
	18.90	15.45 × 21.02 × 22.20	27.34
	24.02	15.45 × 21.02 × 27.32	30.87
8 U	8.62	17.20 × 21.02 × 11.93	18.96
	13.78	17.20 × 21.02 × 17.09	23.37
	18.90	17.20 × 21.02 × 22.20	28.22
	24.02	17.20 × 21.02 × 27.32	31.75
9 U	8.62	18.96 × 21.02 × 11.93	19.62
	13.78	18.96 × 21.02 × 17.09	24.03
	18.90	18.96 × 21.02 × 22.20	29.11
	24.02	18.96 × 21.02 × 27.32	32.85
10 U	8.62	20.71 × 21.02 × 11.93	20.07
	13.78	20.71 × 21.02 × 17.09	24.70
	18.90	20.71 × 21.02 × 22.20	29.77
	24.02	20.71 × 21.02 × 27.32	33.74
11 U	8.62	22.46 × 21.02 × 11.93	20.73
	13.78	22.46 × 21.02 × 17.09	25.36
	18.90	22.46 × 21.02 × 22.20	30.43
	24.02	22.46 × 21.02 × 27.32	34.84
12 U	8.62	24.21 × 21.02 × 11.93	21.17
	13.78	24.21 × 21.02 × 17.09	26.02
	18.90	24.21 × 21.02 × 22.20	31.09
	24.02	24.21 × 21.02 × 27.32	35.72
16 U	24.02	31.22 × 21.02 × 27.32	40.13

Further sizes are available upon request. Height of housing with stacking foot = external dimension (nominal dimension) + 0.45". Depth of lid = 2.48". Depth of the special lids depends upon the version. All Rackmount Cases can be supplied with rear panel welded in position.

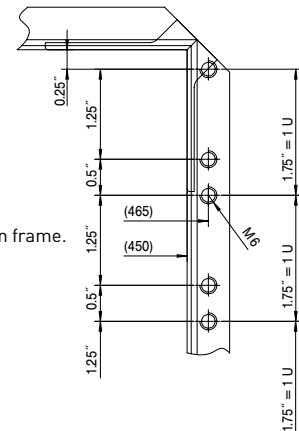
Inner frame

- Slide-in module width 17.7".
- Slide-in module height U × 1.75".
- Slide-in module depths 8.62/13.78/18.9/24.02" or special depth.

Important notice: Inside diameter housing frame = external dimension minus 1.73".



Space available.



Dimensions of anti-vibration frame.

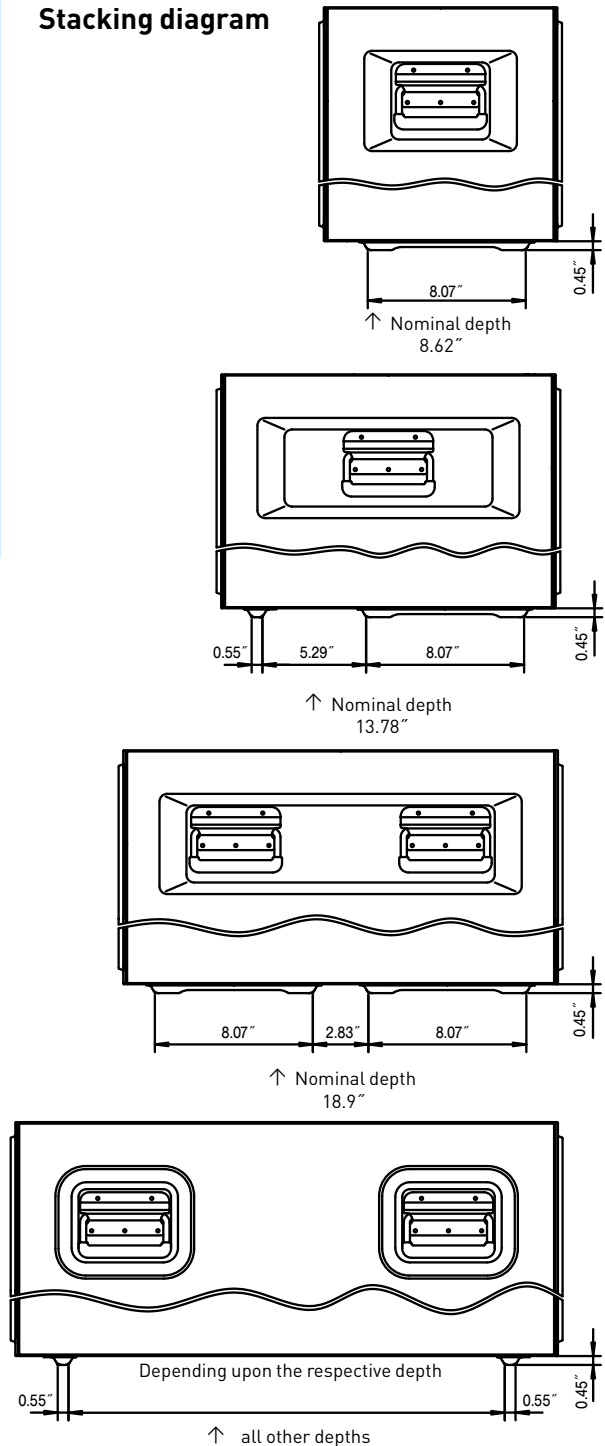
→ Lids, handles, stacking features

Details

- Stacking recess on the top.
- Additional strengthening ribs on the top and side walls.
- Recessed handles on the sides.
- Recess also useful for pressure relief valve and humidity indicator.
- Screw-down lids can also be supplied.



Stacking diagram



Mitraset® 19" Rackmount Cases

Technical features of lid

Lid	Ext. dimensions (H×W×D) approx. in inch	Weight of lid approx. lbs
3 U	8.44 × 21.02 × 2.48	3.53
4 U	10.20 × 21.02 × 2.48	3.97
5 U	11.95 × 21.02 × 2.48	4.41
6 U	13.70 × 21.02 × 2.48	4.63
7 U	15.45 × 21.02 × 2.48	5.07
8 U	17.20 × 21.02 × 2.48	5.51
9 U	18.96 × 21.02 × 2.48	5.73
10 U	20.71 × 21.02 × 2.48	6.17
11 U	22.46 × 21.02 × 2.48	6.62
12 U	24.21 × 21.02 × 2.48	7.06
16 U	31.22 × 21.02 × 2.48	8.82

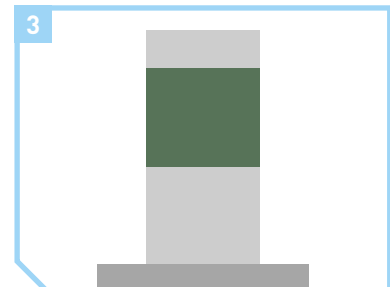
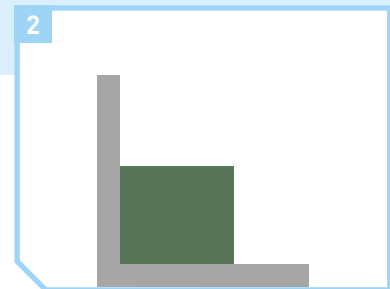
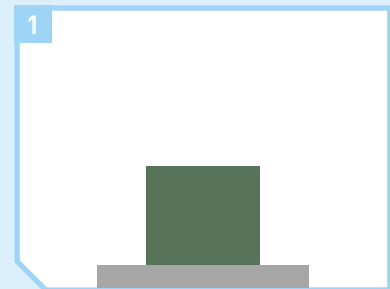
Important notice: Inside diameter housing frame = external dimension minus 2,1".

→ Cooling

Cooling in Watts under differing operational conditions

Inner height	Nominal depth in inch	Single housing, free-standing (1) Watt	Rear-wall, attached (2) Watt	Housing in the middle of the stack Watt
3 U	8.62	72	59	46
	13.78	86	73	53
	18.90	100	87	59
	24.02	114	101	65
4 U	8.62	82	66	56
	13.78	97	81	63
	18.90	112	97	71
	24.02	128	112	79
5 U	8.62	91	73	65
	13.78	108	90	74
	18.90	124	106	83
	24.02	141	123	92
6 U	8.62	101	80	75
	13.78	119	98	85
	18.90	137	116	95
	24.02	155	134	106
7 U	8.62	110	87	85
	13.78	130	106	96
	18.90	149	125	108
	24.02	168	145	119
8 U	8.62	120	94	94
	13.78	141	114	107
	18.90	161	135	120
	24.02	182	155	133
9 U	8.62	130	101	104
	13.78	151	123	118
	18.90	173	144	132
	24.02	195	166	146
10 U	8.62	139	108	113
	13.78	162	131	129
	18.90	185	154	144
	24.02	209	177	160
11 U	8.62	149	115	123
	13.78	173	139	140
	18.90	198	164	156
	24.02	222	188	173
12 U	8.62	158	122	133
	13.78	184	147	151
	18.90	210	173	169
	24.02	236	199	187
16 U	24.02	290	242	241

Note: Thanks to the special slide-in ventilation modules and heat exchangers, cooling can be adjusted to suit individual requirements.

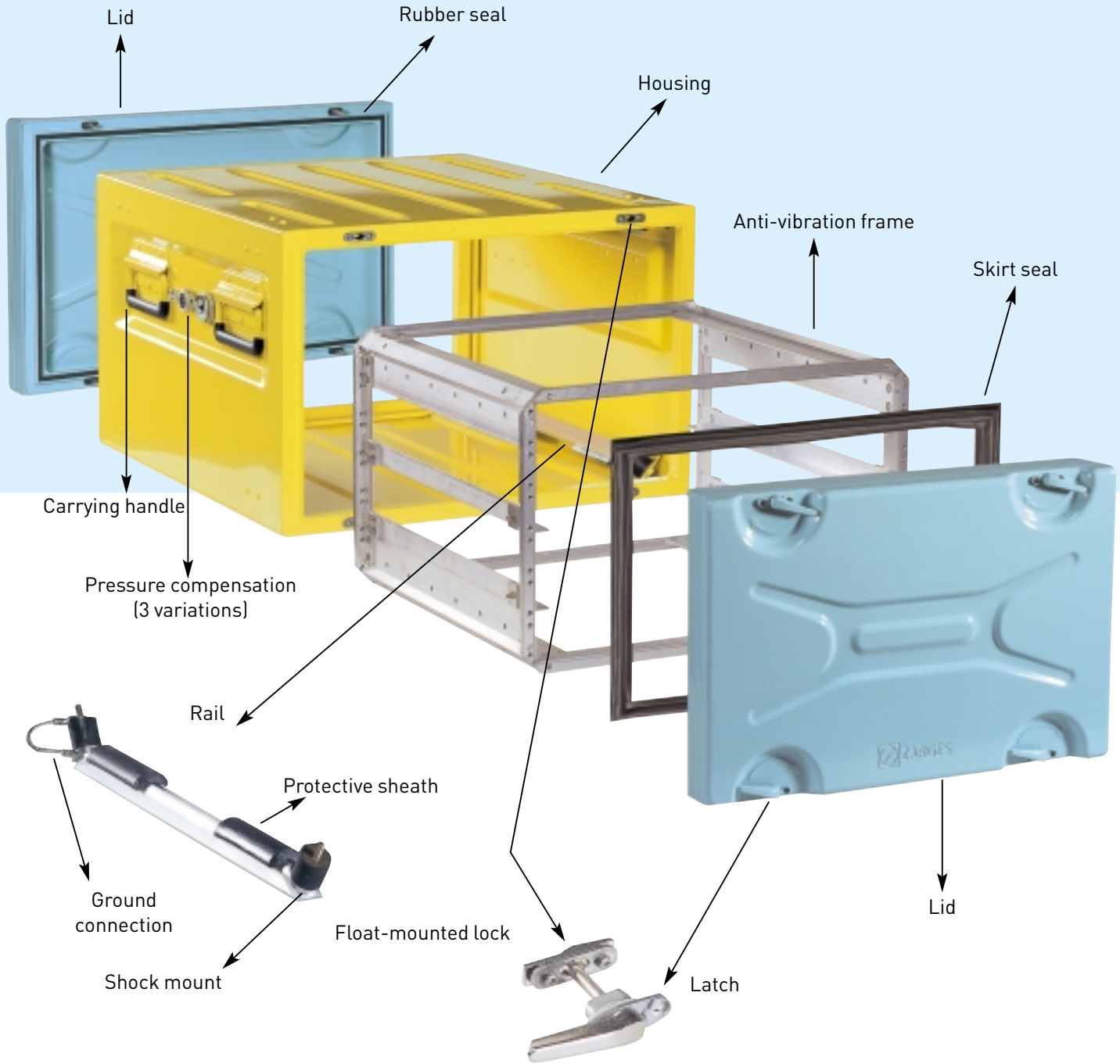


Details

The guide figures calculated in the table may be influenced by various factors, e.g.:

- Paint type and colour.
- Internal air circulation.
- Location and position of the housing.
- Influencing factors due to adjacent containers.
- Weather and climatic conditions.

The guide figures in the table have been calculated for ΔT 68°F, figures in W. (All figures for closed Rackmount Cases.)



Mitraset® 19" Rackmount Cases

Some items shown in illustrations are non-standard accessories.

→ Mitraset® 19" accessories

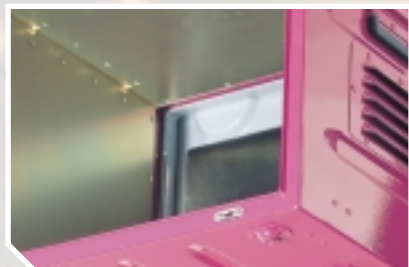
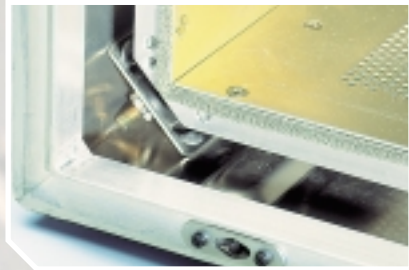
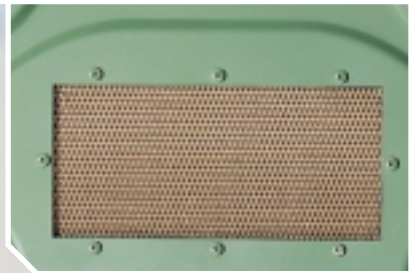
RF-Screening

For Rackmount Cases with lids fitted:

- This is achieved by using a special lid gasket. (Sealing against environmental influences can be reduced to IP 54, depending on the gasket material required.)
- Cutout with RF honeycomb filter. Sealing to IP 54. Mainly for installation in the lid.

For Rackmount Cases without lids fitted:

- By fitting aluminum infill panels on 4 sides of frame. Optionally perforated for better circulation of the air. In addition, the front and back of the frames are fitted with an RFI Gasket.
- By fitting a skirt seal made of conductive material between the housing and the frame. Front panel and rear panel must be adapted by the user so that they are RF-shielded.



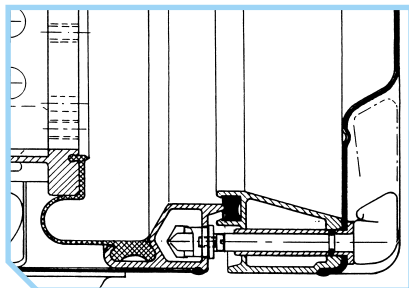
Flexible environmental seal

- If IP 65 is required in operation with an open lid, skirt seals are to be used in accordance with the table below.
- RF-tight version available as special equipment.

Flexible skirt seal to IP 65

Order-No.	for Mitraset® type
37 053	3 U
37 054	4 U
37 055	5 U
37 056	6 U
37 057	7 U
37 058	8 U

Order-No.	for Mitraset® type
37 059	9 U
37 060	10 U
37 061	11 U
37 062	12 U
34 5093	16 U



Fitting/installation

- Is done by fitting threaded (M8) inserts into the stacking feet.



Pressure equalisation

- Automatic to VG 95 618.
Order-No. 316 886
- Manual.
Order-No. 320 060
- Screw.
Order-No. 346 457
- Decompression opening on request.



Humidity control

- Humidity indicator according to TL 6685-0008 (VG 95 617).
Order-No. 316 887
- Desiccant available upon request.



Equipment mounting angles

- Riveted.
- Infinitely adjustable, secured with a screw.



For crane transport.

- Rivet nuts and lifting eyes (M8).



→ Mitraset® 19" accessories

Cable coil

→ Depending upon U: set comprising 2 to 4 retention brackets with Velcro tape.



Bag

→ Outer dimensions, small bag: approx. 7.28" × 5.31" × 1.97".

Order-No. 322 768

→ Outer dimensions, large bag: approx. 16.93" × 9.92" × 1.97".

Order-No. 340 934



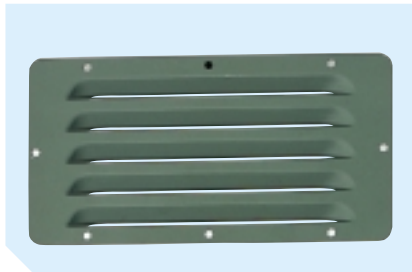
Keyboard support

→ Foam insert in the lid, secured by Velcro tape. Possible from 6U.



Louvred panel

→ Various Dimensions.



Lock installation

→ Cylinder lock.



Special lid

→ With laser-cut holes for switches and plugs to customer's specification.



Special lid with flap

→ Size of the opening variable according to size of lid.



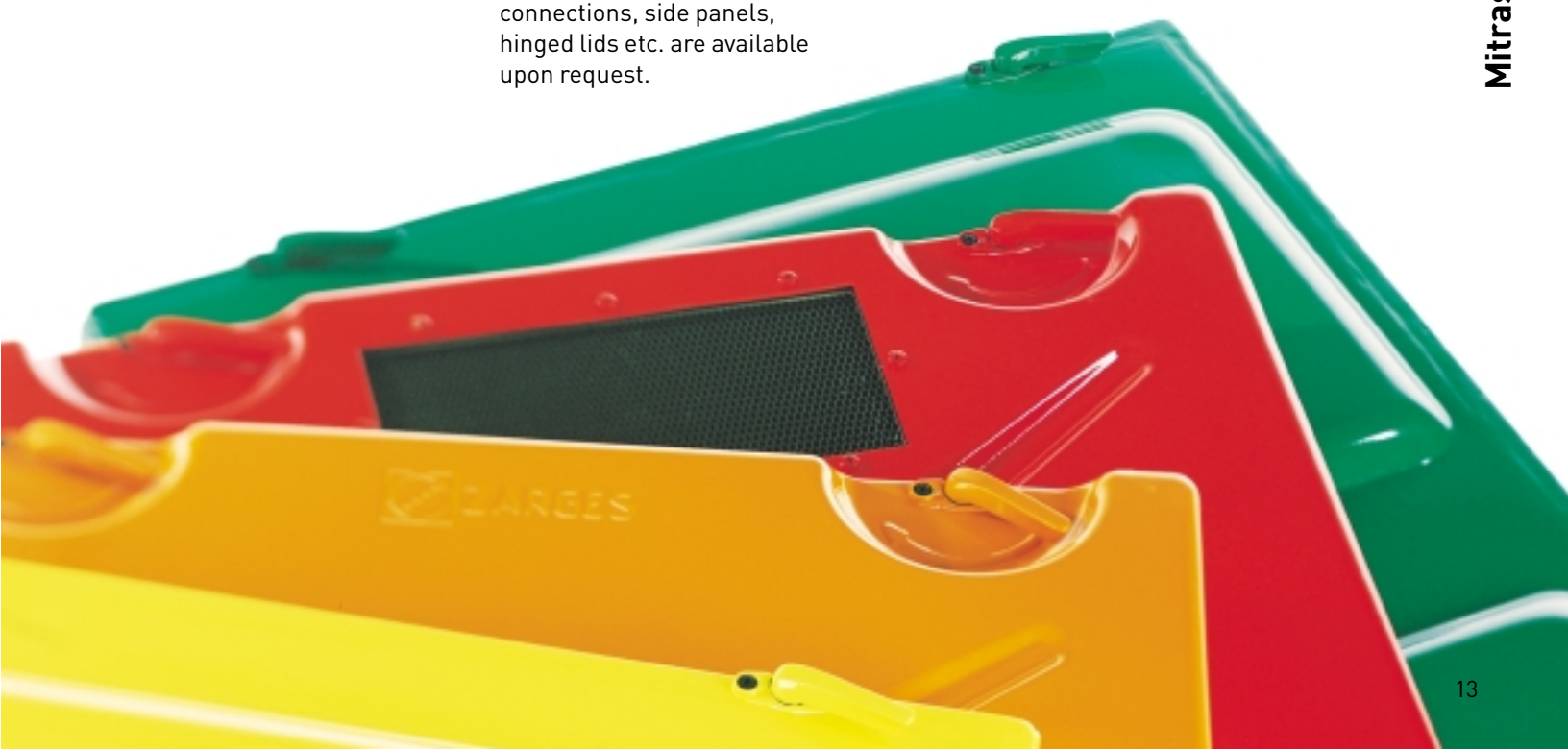
Telescopic slides

→ Cover possible.
→ With telescopic slides.
→ Suitable for drawers, trays etc.



Further accessories,

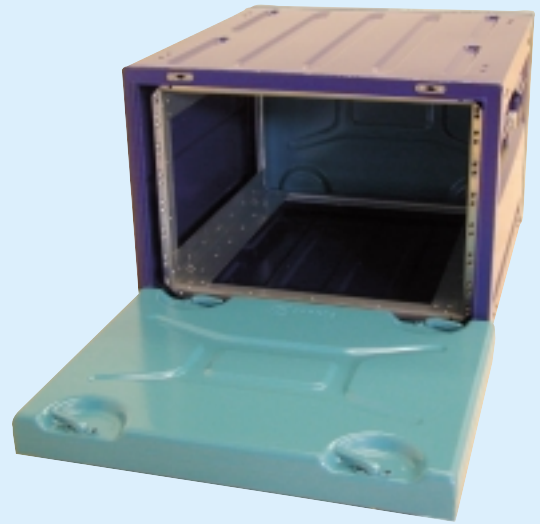
→ e.g. transport aids, housing connections, side panels, hinged lids etc. are available upon request.



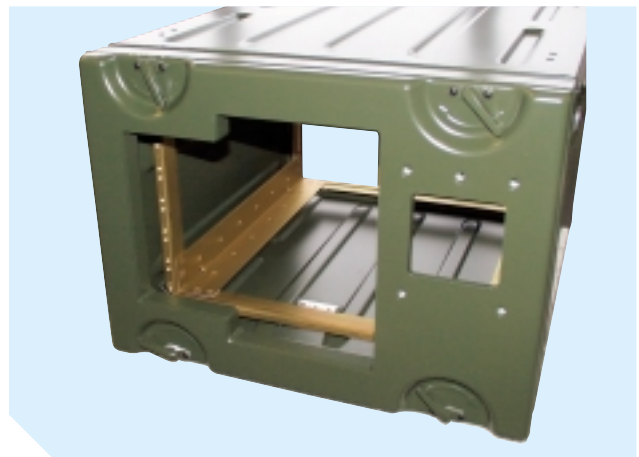
→ Customised Cases



→ Customised Cases



Customised Cases





ZARGES

→ www.zarges-cases.com

