

# RACKMOUNT CASES

FOR 19" ELECTRONICS



 ZARGES

# Mitraset® 19" rackmount cases

Mitraset® 19" rackmount cases are the number one choice for transporting highly sensitive electronic equipment. Whether for military, aerospace or industrial applications, Mitraset® 19" rackmount cases provide protection against moisture, shocks, impacts, vibrations and electromagnetic interference. With its Mitraset® RRF (Removable Rack Frame) and Mitraset® Racklite products, ZARGES has genuine innovations to make handling even faster and simpler. Discover the multitude of applications and solutions provided by the Mitraset® 19" rackmount cases.

Mitraset® 19" rackmount cases are made of aluminum and are designed to hold electronic equipment in a 19" grid in accordance with DIN EN 60297-3-100 and EIA-310-E.

Mitraset® 19" rackmount cases have proven themselves in a multitude of tests and military deployments. For the Mitraset® Classic, ZARGES has obtained approval according to the new VG 95 447 German military standard. VG 95 447 sets down tests from the AECTP 400 NATO standard. The withdrawn VG 95 446 set down tests from the US MIL-STD-810 standard.

## Protection features

- » Against mechanical loads such as shock, impact and vibrations.
- » Protection against electromagnetic interference such as radio waves, lightning and general environmental influences such as heat, moisture and dust.

The electronic equipment requiring protection is placed and fastened in place inside elastically suspended anti-vibration frames for optimal protection.

Mitraset® rackmount cases are primarily for use in:

- » Military applications, telecommunications and the electronics industry.
- » Transport infrastructure such as rail security and traffic management systems.
- » Anywhere where sensitive electronic equipment requires mobile use or outdoor installation.

## Mitraset® 19" rackmount cases

### Mitraset® Classic



- » For loads up to 220 lbs.
- » Higher loads to be checked on a case-by-case basis.
- » 3 to 22 U, nominal depth 8.62 to 38.96 inches.
- » Design according to VG 95 446 and 95 447.
- » Complies with the highest military specifications.
- » Individual design of damper elements according to customer specifications.
- » Custom versions available.

### Mitraset® Racklite



- » For loads up to 132 lbs.
- » 3 to 12 U, nominal depths 13.78 to 30.00 inches.
- » Commercially available rubber shock mounts with standardized (non-configurable) performance.

### Mitraset® Racklite Basic



- » For loads up to 132 lbs.
- » 3 to 12 U, nominal depths 13.78 to 30.00 inches.
- » Commercially available rubber shock mounts with standardized (non-configurable) performance.
- » Same as Mitraset® Racklite but without corner elements.

# RF Screening

Standard aluminum Mitraset® 19" rackmount cases provide considerably more HF shielding than plastic cases. This can be improved further through special means, as needed.

## On cases with closed lids:

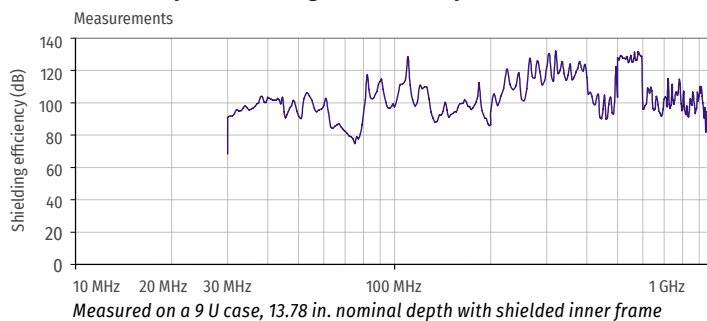
- » By using a special lid seal.
- » Opening through RF honeycomb filter, IP 54 shielding. Installed primarily in the lid.

## On cases with open lids:

- » By paneling the standard inner frame with metal plates on four sides. Panels are selectively perforated to improve air circulation. In addition, the edges on the front and rear side are equipped with an HF sealing cord.
- » By inserting a sealing collar made from conductive material between the case and swing frame.

For shielded cases, we recommend chromated cases, covers and swing frames. ZARGES also offers chromium (VI)-free coatings.

Example of shielding effectiveness per MIL-STD-285:



Case equipped with chromated perforated metal plate and HF sealing cord in the swing frame



Honeycomb filter in the lid

# Vibration Dampening

Unwanted mechanical vibrations often occur during transport and other situations. These may have a negative effect on the functioning of electronic components and thus represent an increased safety risk.

Mitraset® rackmount cases offer a solution to vibration problems in military, aerospace as well as in industry applications. They are tested to MIL-STD-810.

For special requirements, a modified Mitraset® rackmount case has been developed and undergone successful testing in accordance with the strict MIL-STD-810 F specifications.

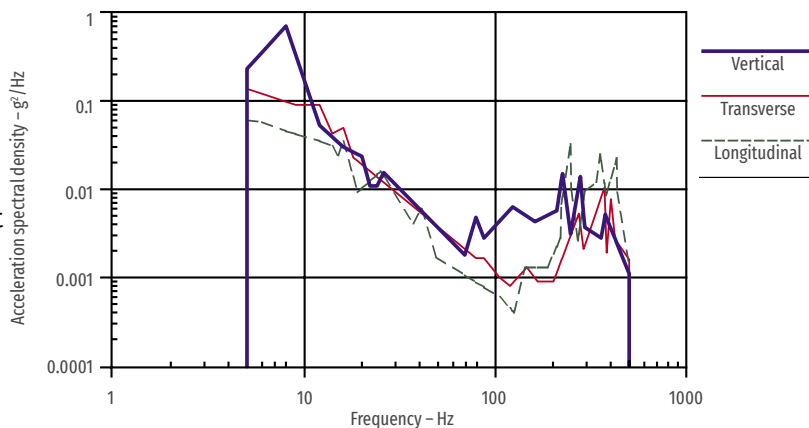
The following diagrams show the test specifications according to FIGURE 514.5C-3: Composite wheeled vehicle vibration exposure.

**ZARGES also develops customized solutions according to your specifications.**



MIL-STD-810 F, FIGURE 514.5 C-3.

(MIL-STD-810 F, 1 January 2000, ANNEX C)



Meets or exceeds the following standards:

## ATA 300

## MIL-STD-810:

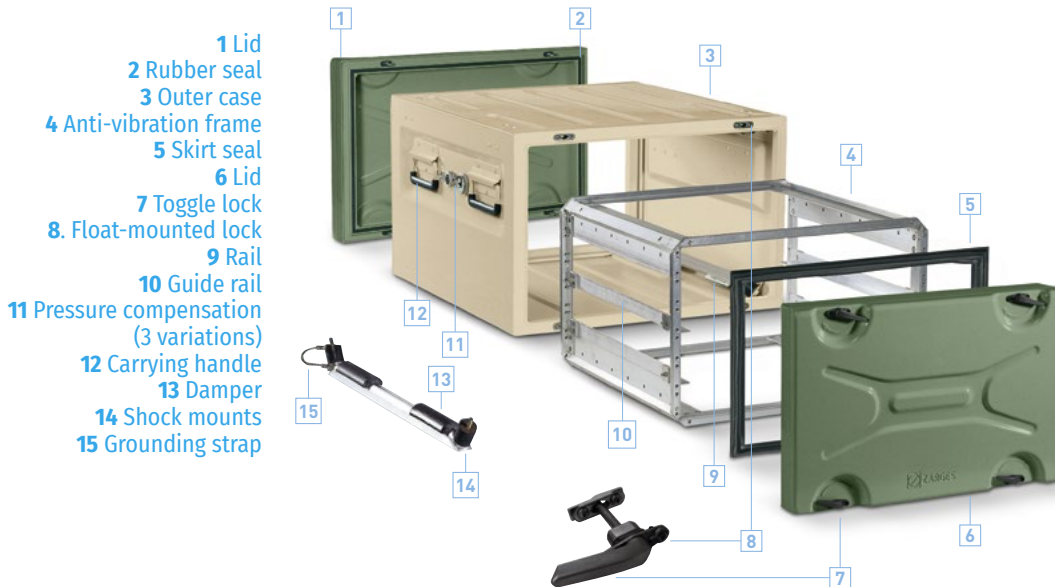
- Method 500.5, Procedure I - Low Pressure (Altitude)
- Method 501.4 High Temperature
- Method 502.4 Low Temperature
- Method 505.4 Solar radiation
- Method 506.4, Procedure II - Water resistance, splash proof
- Method 506.4, Procedure III - Water resistance, drip proof
- Method 506.5, Procedure I - Rain and Blowing Rain
- Method 507.4 Humidity
- Method 508.5 Fungus
- Method 509.5 Salt Fog
- Method 510.4 Dust exposure
- Method 510.5, Procedure I - Blowing Dust
- Method 516.4, Procedure IV - Transit drop 1.2 m

# Mitraset Classic



The ZARGES MITRASET® rackmount case is the ultimate protection for 19" electronics in all environments from the desert to the arctic. The precision-welded MITRASET housing is made from high-strength aluminum sheets and profiles and protects sensitive electronic equipment against extreme temperature conditions, moisture and electro-magnetic interference, while a specially designed anti-vibration frame cushions against mechanical shocks, impact or vibrations.

- » For loads up to 220 lbs.
- » Available in 52 standard sizes, custom sizes up to 22U
- » Two interchangeable lids with ½ turn latches, 4 per lid. Optional lock available
- » IP 65 rating due to welded casing and lid with all-round seal
- » EMI / RFI shielding of 60dB from 150kHz to 18GHz, additional shielding optional
- » Completely removable anti-vibration frame
- » Custom layout of dampening elements according to client specifications
- » UN Certification for transport of hazardous materials available
- » Stackable



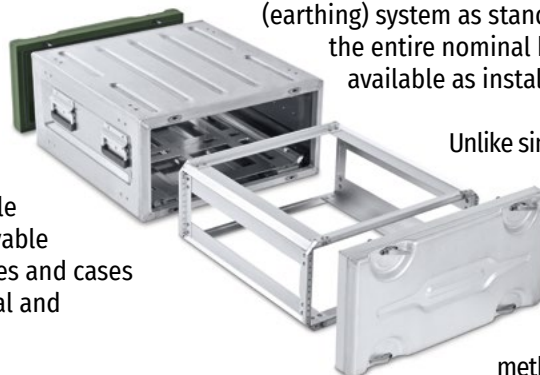
- 1 Lid
- 2 Rubber seal
- 3 Outer case
- 4 Anti-vibration frame
- 5 Skirt seal
- 6 Lid
- 7 Toggle lock
- 8. Float-mounted lock
- 9 Rail
- 10 Guide rail
- 11 Pressure compensation (3 variations)
- 12 Carrying handle
- 13 Damper
- 14 Shock mounts
- 15 Grounding strap

## Mitraset® Classic Removable Rack Frame (RRF)

On the Mitraset® Classic RRF (Removable Rack Frame), the 19" anti-vibration frame can be removed quickly and easily without the use of tools, even with 19" devices already installed.

When the anti-vibration frame has been removed, work on installed devices and cabling can then be performed quickly and easily due to the equipment being accessible from all sides. Rackmount cases with removable anti-vibration frames are used for prototypes and cases in which components need frequent removal and replacement.

A special surface coating ensures easy sliding of the anti-vibration frame. The rackmount case is equipped with a bonding (earthing) system as standard. The compact design means that the entire nominal height of the Mitraset® Classic RRF is available as installation space.



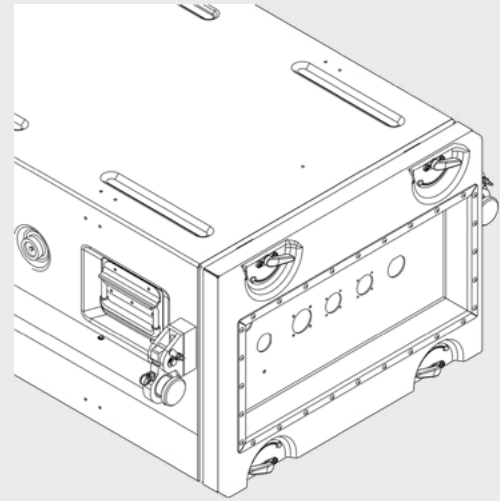
Unlike similar products on the market, no rack unit space in ZARGES Mitraset® rackmount case gets wasted through a locking system, and the outside dimensions remain unchanged. Mitraset® RRF have successfully undergone shock and vibration testing to MIL-STD 810 F, method 514.5.

# Available Sizes

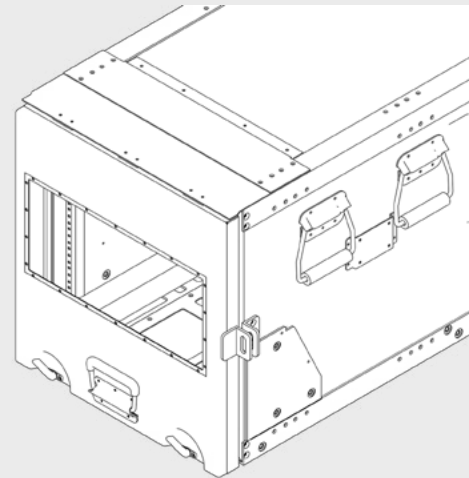
SKU	Height (HE/U)	External Depth (in.)	Weight (lbs.)
45702	3	11.93	14.55
45704	3	17.09	18.96
45706	3	22.2	23.59
45803	3	27.32	29.76
45863	3	33.7	35.71
45708	4	11.93	15.43
45710	4	17.09	19.84
45712	4	22.2	24.47
45804	4	27.32	31.09
45864	4	33.7	37.04
45714	5	11.93	16.09
45716	5	17.09	20.5
45718	5	22.2	25.13
45805	5	27.32	32.41
45865	5	33.7	38.36
45720	6	11.93	16.53
45722	6	17.09	21.16
45724	6	22.2	26.23
45806	6	27.32	33.51
45866	6	33.7	39.46
45726	7	11.93	17.2
45728	7	17.09	22.05
45730	7	22.2	26.9
45807	7	27.32	35.05
45867	7	33.7	41.01

SKU	Height (HE/U)	External Depth (in.)	Weight (lbs.)
45732	8	11.93	18.08
45734	8	17.09	22.71
45736	8	22.2	27.78
45808	8	27.32	36.6
45868	8	33.7	42.55
45738	9	11.93	18.52
45740	9	17.09	23.59
45742	9	22.2	28.66
45809	9	27.32	37.7
45869	9	33.7	43.65
45744	10	11.93	18.96
45746	10	17.09	24.25
45748	10	22.2	29.32
45810	10	27.32	38.58
45870	10	33.7	44.53
45750	11	11.93	19.4
45752	11	17.09	24.91
45754	11	22.2	30.2
45811	11	27.32	54.45
45871	11	33.7	45.86
45756	12	11.93	19.84
45758	12	17.09	25.57
45760	12	22.2	31.09
45812	12	27.32	41.01
45872	12	33.7	46.96
45816	16	27.32	64.57
45876	16	33.7	70.56

Mitraset Classic External Width 21.02 in.



- » **Requirement:** Protection of electrical components against EMI/RF interference while meeting strict SWaP requirements
- » **ZARGES Solution:** The ZARGES Mitraset Classic provides high EMI/RFI shielding in a lightweight aluminum enclosure with a smaller and lighter footprint than commodity plastic cases. ZARGES delivered Faraday cage rackmount cases to the program, generating a total system savings of 54% on space and 28% on weight. The program reduced pack out from 1 ½ 463L pallets to less than 1.
- » **Met or passed:**
  - » MIL – 810 Shock/Vibe, Wind blown rain, Salt/Fog
  - » MIL – 461 EMI



- » **Requirement:** Externally mounted rugged case for vehicle. Must withstand extreme temperature and terrain ranges while providing shielding and maintaining temperature.
- » **ZARGES Solution:** ZARGES delivered shielded and temperature-controlled cases. Combining the most durable version of our Rackmount portfolio with a highly engineered mounting system and temperature control. ZARGES meets the challenge of the Soldier on the Move.
- » **Met or passed:**
  - » MIL – 810 Shock/Vibe, Wind blown rain, Salt/Fog
  - » MIL – 461 EMI

# Wire Cable Dampers



Mitraset® wire cable damper

For especially high loads or vibration-dampening requirements, the Mitraset® Classic 19" frame is suspended via wire cable dampers at a 45° angle. Outer dimensions are increased accordingly due to the enlarged swing frame. Available for Mitraset® Classic only.

# Mitraset Racklite

The Mitraset® Racklite is ZARGES' light case series with 19" swing frames for low to medium installation weights. Equipped with standard rubber buffers, performance not configurable.



- » The simple setup process for standard dampeners allows for weight-optimized cases for insert weights up to 132.24 lbs
- » The 6U 24.02 inch size achieves a weight reduction of 15% compared to the Mitraset® Classic.
- » Quick and secure cover locking using well-proven comfort fasteners with spring anti-opening feature.
- » The new corner components made from thermoplastic elastomer (TPE) allow for improvements to paint protection and stackability, as well as in drop tests per MIL-STD 810 Method 516.6, Procedure IV.
- » Equipped with comfort spring handles for ergonomic handling and loads up to 110.20 lbs.
- » IP 65 protection in accordance with DIN EN 60529 and IEC 34-5/529 via welded case and cover with circumferential seal.
- » Shielding effectiveness test per MIL-STD-285.
- » The vibration-reducing properties of the case are determined by ZARGES.
- » Suitable for industrial and other applications up to 132.24 lbs.
- » Mitraset® Racklite was tested according to MIL-STD-810G, Figure 514.6C-1, Common carrier (US highway truck vibration exposure).



# Mitraset Racklite Basic

The Mitraset® Racklite Basic is the lightweight rackmount case series with 19" anti-vibration frames for low to medium installation weights. The Mitraset® Racklite Basic omits the corner elements of the Mitraset® Racklite.

- » Considerably more compact dimensions.
- » Mitraset® Racklite Basic can be stacked with the Mitraset® Classic series.
- » IP 65 protection in accordance with DIN EN 60529 and IEC 34-5/529, welded case and cover with circumferential seal.
- » Lower weight than the Mitraset® Classic and Mitraset® Racklite.
- » Custom depths for lids available.
- » Comfort spring handles provide the best grip.
- » Shielding values comparable to the Mitraset® Classic and Mitraset® Racklite.

In contrast to the Mitraset® Racklite, this version has no rubber elements which reduces dimensions as follows:

- » Height by 1.79 in.
- » Width by 0.91 in.
- » Depth (including lid) by 1.69 in.
- » Weight (including lid) reduced by 4.85 lbs.



# Available Sizes

With both lids on

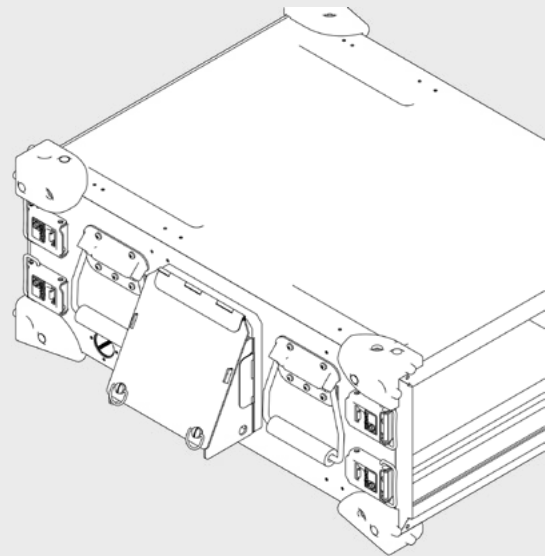
Height (HE/U)	External Depth (in.)	Weight (lbs.)
3	22.76	29.76
3	27.87	32.85
3	32.99	35.71
3	38.98	39.02
4	22.76	31.97
4	27.87	35.27
4	32.99	38.14
4	38.98	41.44
5	22.76	33.73
5	27.87	37.04
5	32.99	39.9
5	38.98	43.43
6	22.76	34.83
6	27.87	38.14
6	32.99	41.22
6	38.98	44.97
7	22.76	36.37
7	27.87	39.9
7	32.99	42.99
7	38.98	46.74
8	22.76	37.92
8	27.87	41.67
8	32.99	44.97
8	38.98	48.72
9	22.76	39.68
9	27.87	43.43
9	32.99	46.74
9	38.98	50.7
10	22.76	40.78
10	27.87	44.53
10	32.99	48.06
10	38.98	52.03
11	22.76	42.33
11	27.87	46.29
11	32.99	49.82
11	38.98	54.01
12	22.76	44.09
12	27.87	48.06
12	32.99	51.59
12	38.98	55.99

Racklite External Width 23.27 in.

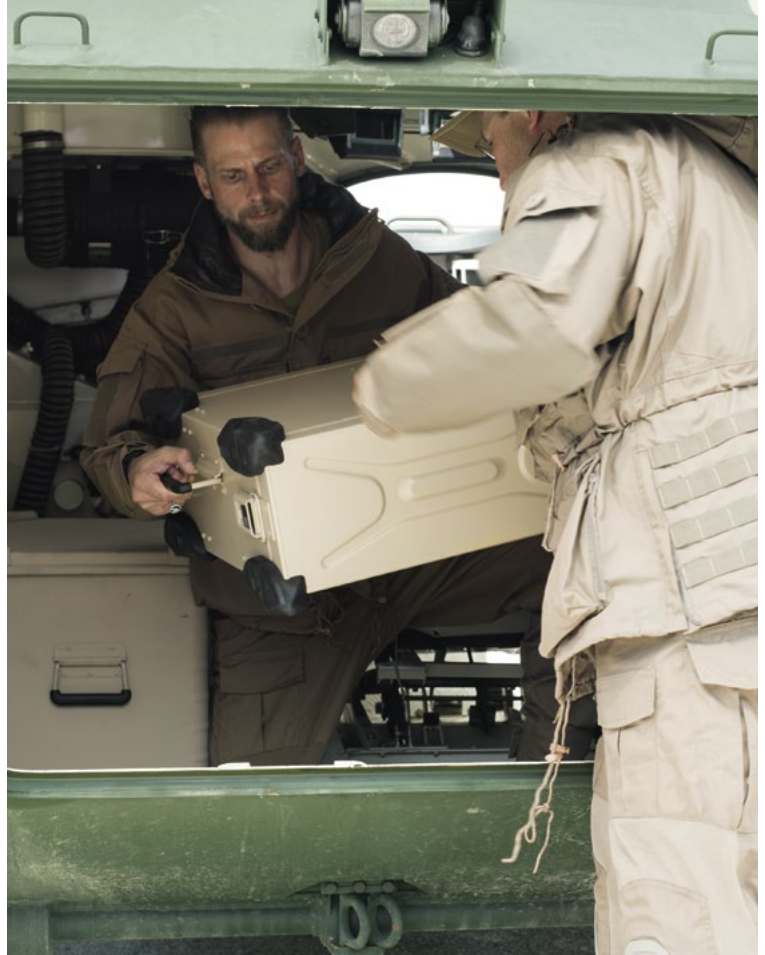
With both lids on

Height (HE/U)	External Depth (in.)	Weight (lbs.)
3	21.1	24.91
3	26.22	28
3	31.34	30.86
3	37.32	34.17
4	21.1	27.12
4	26.22	30.42
4	31.34	33.29
4	37.32	36.59
5	21.1	28.88
5	26.22	32.19
5	31.34	35.05
5	37.32	38.58
6	21.1	29.98
6	26.22	33.29
6	31.34	36.37
6	37.32	40.12
7	21.1	31.52
7	26.22	35.05
7	31.34	38.14
7	37.32	41.89
8	21.1	33.07
8	26.22	36.82
8	31.34	40.12
8	37.32	43.87
9	21.1	34.83
9	26.22	38.58
9	31.34	41.89
9	37.32	45.85
10	21.1	35.93
10	26.22	39.68
10	31.34	43.21
10	37.32	47.18
11	21.1	37.48
11	26.22	41.44
11	31.34	44.97
11	37.32	49.16
12	21.1	39.24
12	26.22	43.21
12	31.34	46.74
12	37.32	51.14

Racklite Basic External Width 22.36 in.



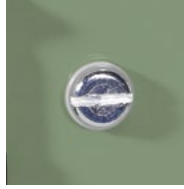
- » **Requirement:** Safe transport of mobile communications equipment in harsh environments
- » **ZARGES Solution:** ZARGES supplied the US Army and US Marines with ruggedized cases for transit of antennas, modems and RF equipment.
- » **Met or passed:**
  - » MIL – 810 Shock/Vibe, Wind blown rain, Salt/Fog
  - » MIL – 461 EMI



# Accessories



Pressure equalization.  
**SKU 316886**



Pressure equalization.  
**SKU 346457**



Pressure equalization.  
**SKU 320060**



Pressure equalization.  
**SKU 60891**



Louvered panel.  
**SKU 334699**



Four-legged stand.  
**SKU by request**



Humidity controls.  
**SKU 316887**



Lifting eye.  
**SKU 339956**



Lock assembly.  
**SKU 342110**  
Only for Mitraset® Classic



Ground mounting.  
**SKU 316886.** For Mitraset® Classic and Mitraset® Racklite Basic.



Cable holder.  
**SKU by request**



Pressure equalization.  
**SKU 316886**



Guide rails.  
**SKU by request**



Desiccant shelf.  
**SKU 353017**



Pull-out drawer.  
**SKU by request**



Keyboard bracket.  
**SKU by request.**  
For 6U and taller.



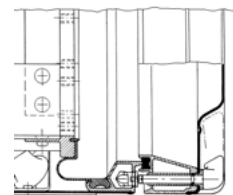
Nylon pouch.  
**Small SKU 322768**  
**Large SKU 340934**

## Sealing Collar

Per IP 65 requirements for operation when the cover is open, use sealing collars according to the table. Special HF-proof design also available.



For Mitraset® type	Standard SKU	HF-proof SKU
3 rack units	37053	37083
4 rack units	37054	37084
5 rack units	3 055	37085
6 rack units	37056	37086
7 rack units	37057	37087
8 rack units	37058	37088
9 rack units	37059	37089
10 rack units	37060	37090
11 rack units	37061	37091
12 rack units	37062	37092
14 rack units	37064	37094
16 rack units	345093	37093



## Custom Fabrication



Mitraset® Classic in custom dimensions 19" ½ with attached connector panel and sealing collar



Mitraset® Classic with custom edge reinforcement



Lid with recessed connector panel



Mitraset® Racklite Lid with connector panel and door for transport protection. Side opening for ventilator.



Mitraset® Classic with specially louvered cover plates and deeply recessed connector pane



Custom Mitraset® Classic with locking hinged lids and custom camouflage paint finish



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