100% Protection – Eliminates Product Losses, Paired With Highest Storage Density

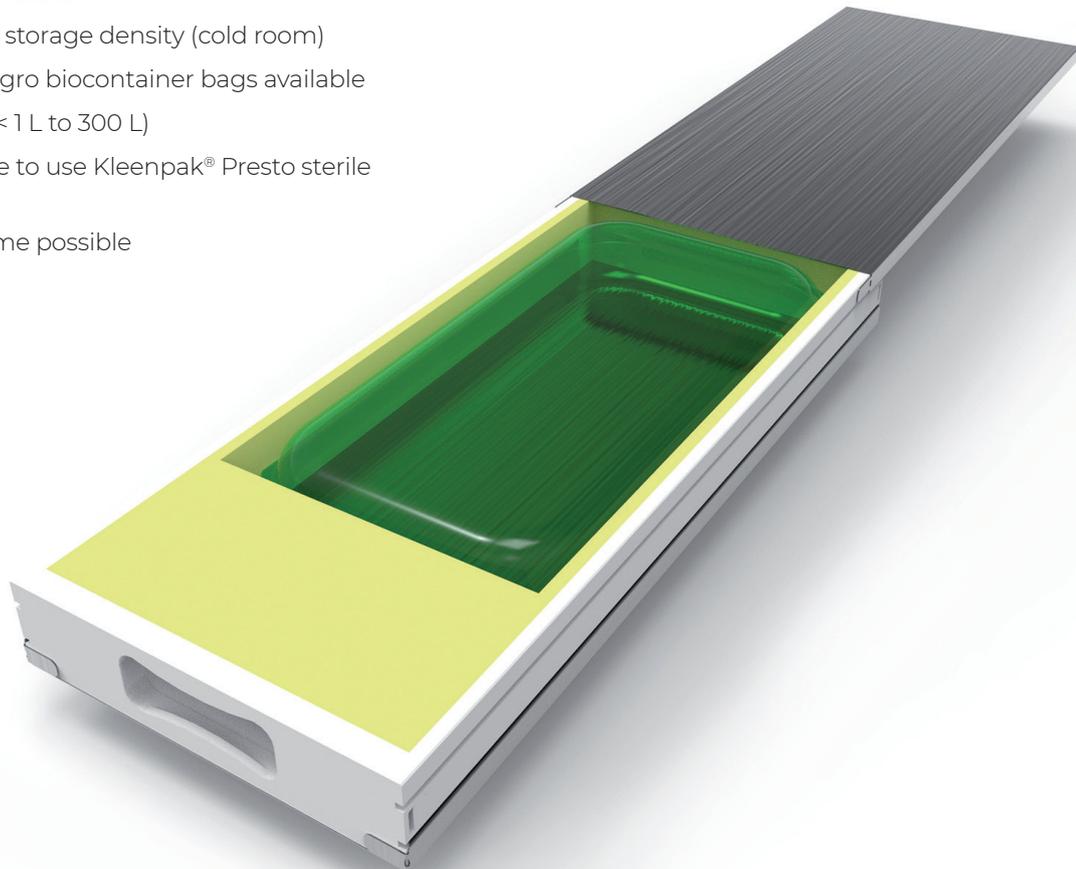### Protect and Freeze Your Bulk Drug Substance

- Various sizes of Allegro™ 2D single-use biocontainer bags
- Down to -80 °C
- At any partial fill volume
- For all freezing technologies
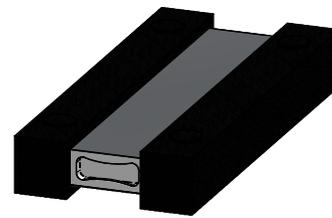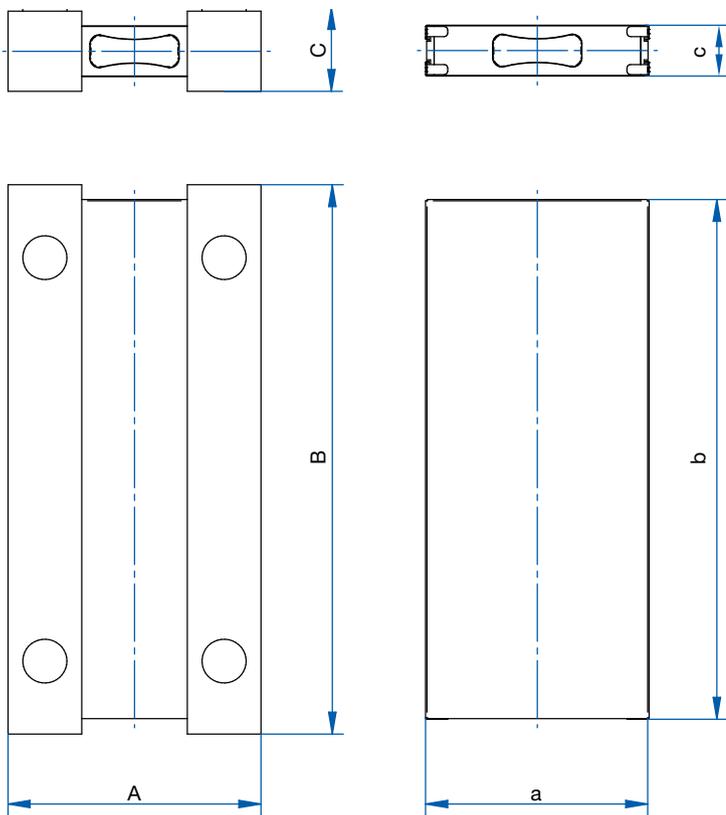- Eliminates product loss during freezing, storing and transportation

Benefits

- Eliminates product losses
- Highest achievable storage density (cold room)
- Various sizes of Allegro biocontainer bags available
- Scalable platform (< 1 L to 300 L)
- Freedom and space to use Kleenpak® Presto sterile connectors
- Any partial fill volume possible

Technical Values

- Adaptable to all 2D Allegro single-use biocontainer bags Robust and closed design
- Developed cryo inlays (foam) to protect the Allegro single-use biocontainer bag
- Steel plates on top and bottom for quick and uniform freezing and thawing
- Single-use product and easy to recycle (stripping)
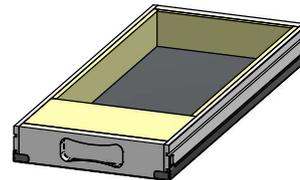- Convenient handling

Robust, Closed and Temperature-Adjustable Construction

RoSS with cryo control unit (CCU) for blast and static freezer

RoSS shell closed

RoSS shell open

Please refer to Table 1 for dimensions

Table 1

RoSS Shell technical specifications ≤5 L

Part Number	LGRFREEZE500ML	LGRFREEZE1L	LGRFREEZE2L	LGRFREEZE5L
Cryo Control Unit (CCU) P/N	LGRCCU500ML	LGRCCU1L	LGRCCU2L	LGRCCU5L
Partial Fill Type 1 P/N	LGRPARTIAL500ML_V1	LGRPARTIAL1L_V1	LGRPARTIAL2L_V1	LGRPARTIAL5L_V1
Partial Fill Type 2 P/N	LGRPARTIAL500ML_V2	LGRPARTIAL1L_V2	LGRPARTIAL2L_V2	LGRPARTIAL5L_V2
Dimensions a x b x c	173 x 413 x 37 mm 6.8 x 16.3 x 1.5 in.	208 x 483 x 42 mm 8.2 x 19.0 x 1.6 in.	273 x 533 x 42 mm 10.7 x 21.0 x 1.6 in.	333 x 713 x 57 mm 13.1 x 28.0 x 2.2 in.
Dimensions With CCU A x B x C	213 x 453 x 82 mm 8.4 x 17.8 x 3.2 in.	248 x 523 x 87 mm 9.8 x 20.6 x 3.4 in.	313 x 573 x 87 mm 12.3 x 22.6 x 3.4 in.	363 x 743 x 92 mm 14.3 x 29.3 x 3.6 in.
Single-Use Biocontainer Bag Size and Type	0.5 L Allegro biocontainer bag	1 L Allegro biocontainer bag	2 L Allegro biocontainer bag	5 L Allegro biocontainer bag
Maximum Filling Volume*	0.3 – 0.4 L	0.95 – 1.0 L	1.8 – 1.9 L	4.3 – 4.5 L
Material	Polyethylene (PE)-HMW, 1.4301 SS, foam	Polyethylene (PE)-HMW, 1.4301 SS, foam	Polyethylene (PE)-HMW, 1.4301 SS, foam	Polyethylene (PE)-HMW, 1.4301 SS, foam
Reusability	Single-use	Single-use	Single-use	Single-use
For Use With	RoSS.pFTU large-scale and lab-scale system	RoSS.pFTU large-scale and lab-scale system	RoSS.pFTU large-scale and lab-scale system	RoSS.pFTU large-scale and lab-scale system
Connector	Not compatible with sterile connectors. 35 mm maximum height. Ability to use 'RoSS Satellite' solution with sterile connector/ disconnectors **	Compatible with Kleenpak sterile connector only. Kleenpak Presto sterile connector not supported. 40 mm maximum height	Compatible with Kleenpak sterile connector only. Kleenpak Presto sterile connector not supported. 40 mm maximum height	Compatible with Kleenpak Presto sterile connector and Kleenpak sterile connector. 50 mm maximum height
Minimum Order Quantity	1	1	1	1

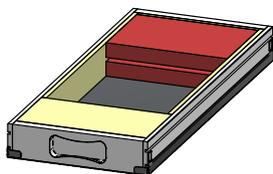*A range of maximum fill is given for customers using manual or automated filling
**RoSS Satellite uses larger RoSS shells to accommodate sterile connectors/disconnectors with tailored foam inlays or multiple bicontainers (on request)
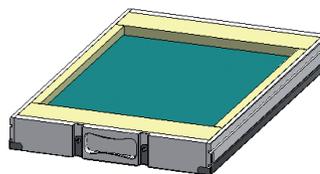
Table 2

RoSS Shell technical specifications >5 L

Part Number	LGRFREEZE10L	LGRFREEZE20L
CCU P/N	LGRCCU10L	LGRCCU20L
Partial Fill Type 1 P/N	LGRPARTIAL10L_V1	LGRPARTIAL20L_V1
Partial Fill Type 2 P/N	LGRPARTIAL10L_V2	LGRPARTIAL20L_V2
Dimensions a x b x c	460 x 725 x 70 mm 18.1 x 28.5 x 2.8 in.	503 x 883 x 70 mm 19.8 x 34.8 x 2.8 in.
Dimensions With CCU A x B x C	500 x 766 x 115 mm 19.7 x 30.2 x 4.5 in.	543 x 923 x 115 mm 21.4 x 36.3 x 4.5 in.
Single-Use Biocontainer Size and Type	10 L Allegro biocontainer bag	20 L Allegro biocontainer bag
Maximum Filling Volume*	9.8 – 10.0 L	14.0 – 14.5 L
Material	Polyethylene (PE)-HMW, 1.4301 SS, foam	Polyethylene (PE)-HMW, 1.4301 SS, foam
Reusability	Single-use	Single-use
For Use With	RoSS.pFTU large-scale system	RoSS.pFTU large-scale system
Connector	Compatible with Kleenpak Presto sterile connector and Kleenpak sterile connector. 70 mm maximum height	Compatible with Kleenpak Presto sterile connector and Kleenpak sterile connector. 70 mm maximum height
Minimum Order Quantity	1	1

*A range of maximum fill is given for customers using manual or automated filling.

RoSS with partial fill foam Type 1

- 2 pieces of pink foam
- For filling between 50% and the biocontainer's maximum volume
- Expands to have a similar water column as with fully filled biocontainer: drug substance has contact to top and bottom lid

RoSS with partial fill foam Type 2

- 1 piece of green foam
- For filling between 0% and 50% of the biocontainer's maximum volume
- Reaching a water column from top to bottom is not possible. Foam expands