HPE-300/HPE-300-2AC

HYBRID POWER EXTENDER

User's Guide

13-00090-000

2020-11-24

www.grassvalley.com

FCC Compliance

In order to comply with FCC/CFR47: Part 15 regulations, it is necessary to use high-quality, triple-screened Media or Monitor cable assemblies with integrated ferrite suppression at both ends.

Patent Information

This product may be protected by one or more patents.

For further information, please visit: www.grassvalley.com/patents/

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Title	HPE-300/HPE-300-2AC User's Guide
Part Number	13-00090-000
Revision	AB

Important Safety Information

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

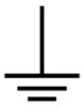
Symbols and Their Meanings

Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

Indicates that the user, operator or service technician should refer to the product manuals for important operating, maintenance, or service instructions.

This is a prompt to note the fuse rating when replacing fuses. The fuse referenced in the text must be replaced with one having the ratings indicated.

Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.

Indicates that static sensitive components are present, which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.

The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA.

The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Canadian Standard Association (CSA) regulations and recommendations for USA/Canada.

The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA/Canada.

The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Intertek Testing Services regulations and recommendations for USA/Canada.

The presence of this symbol in or on Grass Valley product means that it complies with all applicable European Union (CE) directives.

The presence of this symbol in or on Grass Valley product means that it complies with safety of laser product applicable standards.

Warnings

A warning indicates a possible hazard to personnel, which may cause injury or death. Observe the following general warnings when using or working on this equipment:

- Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the rated mains voltage.
- This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for the rated mains voltage is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

Cautions

A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- This equipment is meant to be installed in a restricted access location.
- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.
- Do not operate with suspected equipment failure. If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.
- This unit may have more than one power supply cord. Disconnect all power supply cords before servicing to avoid electric shock.
- Follow static precautions at all times when handling this equipment. Servicing should be done in a static-free environment.
- To reduce the risk of electric shock, plug each power supply cord into separate branch circuits employing separate service grounds.

Electrostatic Discharge (ESD) Protection

Electrostatic discharge occurs when electronic components are improperly handled and can result in intermittent failure or complete damage adversely affecting an electrical circuit. When you remove and replace any card from a frame always follow ESD-prevention procedures:

- Ensure that the frame is electrically connected to earth ground through the power cord or any other means if available.
- Wear an ESD wrist strap ensuring that it makes good skin contact. Connect the grounding clip to an *unpainted surface* of the chassis frame to safely ground unwanted ESD voltages. If no wrist strap is available, ground yourself by touching the *unpainted* metal part of the chassis.
- For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms.
- When temporarily storing a card make sure it is placed in an ESD bag.
- Cards in an earth grounded metal frame or casing do not require any special ESD protection.

Mesures de sécurité et avis importants

La présente section fournit des consignes de sécurité importantes pour les opérateurs et le personnel de service. Des avertissements ou mises en garde spécifiques figurent dans le manuel, dans les sections où ils s'appliquent. Prenez le temps de bien lire les consignes et assurez-vous de les respecter, en particulier celles qui sont destinées à prévenir les décharges électriques ou les blessures.

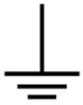
Signification des symboles utilisés

Signale la présence d'une tension élevée et dangereuse dans le boîtier de l'équipement ; cette tension peut être suffisante pour constituer un risque de décharge électrique.

Avertit l'utilisateur, l'opérateur ou le technicien de maintenance que des instructions importantes relatives à l'utilisation et à l'entretien se trouvent dans la documentation accompagnant l'équipement.

Invite l'utilisateur, l'opérateur ou le technicien de maintenance à prendre note du calibre du fusible lors du remplacement de ce dernier. Le fusible auquel il est fait référence dans le texte doit être remplacé par un fusible du même calibre.

Identifie une borne de mise à la terre de protection. Il faut relier cette borne à la terre avant d'effectuer toute autre connexion à l'équipement.



Identifie une borne de mise à la terre externe qui peut être connectée en tant que borne de mise à la terre supplémentaire.

Signale la présence de composants sensibles à l'électricité statique et qui sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.

Le symbole ci-contre signifie que l'appareil comporte plus d'un cordon d'alimentation et qu'il faut débrancher tous les cordons d'alimentation avant toute opération d'entretien, afin de prévenir les chocs électriques.

La marque UL certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

La marque C-CSA-US certifie que l'appareil visé a été testé par l'Association canadienne de normalisation (CSA) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

La marque C-UL-US certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

La marque ETL Listed d'Intertek pour le marché Nord-Américain certifie que l'appareil visé a été testé par Intertek et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.

Le marquage CE indique que l'appareil visé est conforme aux exigences essentielles des directives applicables de l'Union européenne en matière de sécurité électrique, de compatibilité électromagnétique et de conformité environnementale.

Le symbole ci-contre sur un appareil Grass Valley ou à l'intérieur de l'appareil indique qu'il est conforme aux normes applicables en matière de sécurité laser.

Avertissements

Les avertissements signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire fatales. Veuillez vous familiariser avec les avertissements d'ordre général ci-dessous :

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.
- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.
- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.
- N'utilisez pas cet appareil dans un environnement humide.
- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.
- Acheminez les cordons d'alimentation et autres câbles de façon à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.
- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyants liquides ou en aérosol. Utilisez uniquement un chiffon humide.
- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.
- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).
- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.

- Ne pas utiliser cet appareil dans une atmosphère explosive.
- Présence possible de courants de fuite. Un raccordement à la masse est indispensable avant la mise sous tension.
- Après tout travail d'entretien ou de réparation, faites effectuer des contrôles de sécurité par le personnel technique qualifié.

Mises en garde

Les mises en garde signalent des conditions ou des pratiques susceptibles d'endommager l'équipement. Veuillez vous familiariser avec les mises en garde ci-dessous :

- L'appareil est conçu pour être installé dans un endroit à accès restreint.
- Au moment d'installer l'équipement, ne fixez pas les cordons d'alimentation aux surfaces intérieures de l'édifice.
- Les produits qui n'ont pas d'interrupteur marche-arrêt et qui disposent d'une source d'alimentation externe doivent être installés à proximité d'une prise de courant facile d'accès.
- Si l'équipement n'est pas pourvu d'un modules d'alimentation auto-adaptables, vérifiez la configuration de chacun des modules d'alimentation avant de les mettre sous tension.
- Assurez une ventilation adéquate. Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation.
- N'utilisez pas l'équipement si vous suspectez un dysfonctionnement du produit. Faites-le inspecter par un technicien qualifié.
- Pour réduire le risque de choc électrique, n'effectuez pas de réparations autres que celles qui sont décrites dans le présent manuel, sauf si vous êtes qualifié pour le faire. Confiez les réparations à un technicien qualifié. La maintenance doit se réaliser dans un milieu libre d'électricité statique.
- L'appareil peut comporter plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher tous les cordons d'alimentation avant toute opération d'entretien.
- Veillez à toujours prendre les mesures de protection antistatique appropriées quand vous manipulez l'équipement.
- Pour réduire le risque de choc électrique, branchez chaque cordon d'alimentation dans des circuits de dérivation distincts utilisant des zones de service distinctes.

Protection contre les décharges électrostatiques (DES)

Une décharge électrostatique peut se produire lorsque des composants électroniques ne sont pas manipulés de manière adéquate, ce qui peut entraîner des défaillances intermittentes ou endommager irrémédiablement un circuit électrique. Au moment de remplacer une carte dans un châssis, prenez toujours les mesures de protection antistatique appropriées :

- Assurez-vous que le châssis est relié électriquement à la terre par le cordon d'alimentation ou tout autre moyen disponible.

- Portez un bracelet antistatique et assurez-vous qu'il est bien en contact avec la peau. Connectez la pince de masse à une *surface non peinte* du châssis pour détourner à la terre toute tension électrostatique indésirable. En l'absence de bracelet antistatique, déchargez l'électricité statique de votre corps en touchant une surface métallique *non peinte* du châssis.
- Pour plus de sécurité, vérifiez périodiquement la valeur de résistance du bracelet antistatique. Elle doit se situer entre 1 et 10 mégohms.
- Si vous devez mettre une carte de côté, assurez-vous de la ranger dans un sac protecteur antistatique.
- Les cartes qui sont reliées à un châssis ou boîtier métallique mis à la terre ne nécessitent pas de protection antistatique spéciale.

Environmental Information

European (CE) WEEE directive.

This symbol on the product(s) means that at the end of life disposal it should not be mixed with general waste.

Visit www.grassvalley.com for recycling information.

Grass Valley believes this environmental information to be correct but cannot guarantee its completeness or accuracy since it is based on data received from sources outside our company. All specifications are subject to change without notice.

If you have questions about Grass Valley environmental and social involvement (WEEE, RoHS, REACH, etc.), please contact us at environment@grassvalley.com.

Mains Supply Voltage

Before connecting the equipment, observe the safety warnings section and ensure that the local mains supply is within the rating stated on the rear of the equipment.

Safety and EMC Standards

This equipment complies with the following standards:

Safety Standards

CE

Information Technology Equipment - Safety Part 1

EN62368-1: 2014

Audio/video, information and communication technology equipment Part 1: Safety requirements.

EMC Standards

This unit conforms to the following standards:

EN55032:2015 (Class A)

Electromagnetic Compatibility of multimedia equipment - Emission requirements

EN61000-3-2:2014 (Class A)

Electromagnetic Compatibility - Limits for harmonic current emissions

EN61000-3-3:2013

Electromagnetic Compatibility - Limits of voltage changes, voltage fluctuations and flicker

EN55103-2:2009 (Environment E2)

Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

WARNING
This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

FCC / CFR 47:Part 15 (Class A)

Federal Communications Commission Rules Part 15, Subpart B

Caution to the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:	This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EMC Performance of Cables and Connectors

Grass Valley products are designed to meet or exceed the requirements of the appropriate European EMC standards. In order to achieve this performance in real installations it is essential to use cables and connectors with good EMC characteristics.

All signal connections (including remote control connections) shall be made with screened cables terminated in connectors having a metal shell. The cable screen shall have a large-area contact with the metal shell.

SIGNAL/DATA PORTS

For unconnected signal/data ports on the unit, fit shielding covers. For example, fit EMI blanking covers to SFP+ type ports; and fit 75 Ω RF terminators to BNC type ports.

COAXIAL CABLES

Coaxial cables connections (particularly serial digital video connections) shall be made with high-quality double-screened coaxial cables such as Belden 8281 or BBC type PSF1/2M and Belden 1694A (for 3Gbps).

D-TYPE CONNECTORS

D-type connectors shall have metal shells making good RF contact with the cable screen. Connectors having "dimples" which improve the contact between the plug and socket shells, are recommended.

Table of Contents

1 Introduction

Welcome

The HPE-300/HPE-300-2AC is a combined power supply and SMPTE Hybrid Fiber Extender for Grass Valley's LDX 100 and other LDX studio cameras. The power supply is specifically developed for cameras using 300 VDC.

The HPE-300/HPE-300-2AC is key components of Grass Valley's unique NativeIP and DirectIP(+) workflows where the camera's video, audio and control/data signals are sent directly to a network IP switch. Additionally, the HPE-300/HPE-300-2AC can be used in conventional applications where local power of a camera is needed.

Due to the high density of equipment installations, the HPE-300/HPE-300-2AC is built in a small package that measures only 2RU height and 1/3 unit wide. This allows to install three units side-by-side in a standard 19"rack using the optional rack mount shelf (HPE-TRAY).

About this guide

The purpose of this user's guide is to present a detailed description of how to install and operate the HPE-300/HPE-300-2AC. It provides the information necessary to install, set up and operate the unit in different configurations.

Related documents

Before proceeding, check the Grass Valley website at www.grassvalley.com for the latest version of this user's guide and additional information:

- Online versions of documentation; updated versions of user's guides, data sheets, brochures, application notes in pdf-format are available for download. Note: to access some of the information, registration is required.
- Product updates, release notes and installation instructions are available for download.

Technical overview

The primary function of the HPE-300/HPE-300-2AC is to convert an incoming AC mains power source, compatible with all international voltage and frequency standards, to a fixed 300 VDC, 300 W output to power Grass Valley's studio cameras.

Safety features are incorporated to assure that the interconnecting SMPTE Hybrid Fiber cable and associated connectors between the HPE-300/HPE-300-2AC and the camera are intact and safe before the 300 VDC is applied.

The HPE-300 is equipped with a robust power supply providing all necessary safety and control circuits designed specifically to operate Grass Valley studio cameras and including

LED indicators for power supply status. The 2AC model has a secondary AC mains input that takes over in case of a primary AC mains power failure.

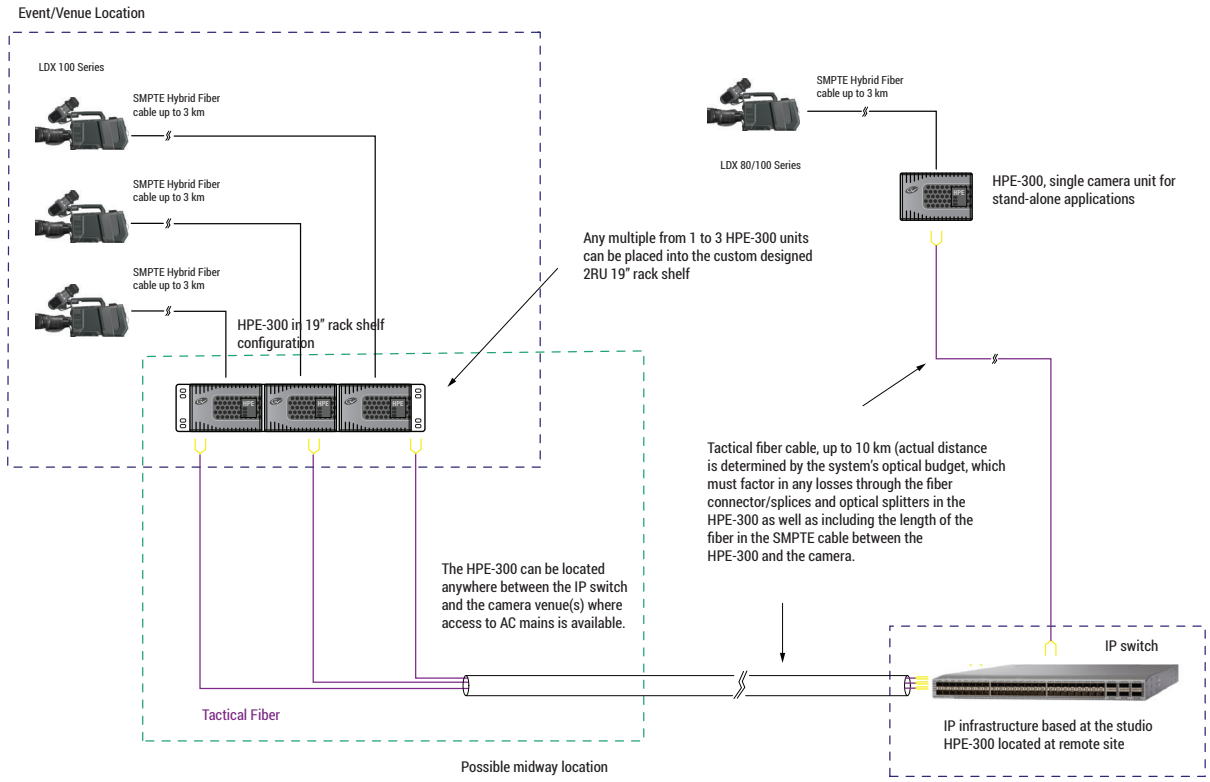
Key features

- All features are built into a compact case of only 2RU height and 1/3 19″ standard rack width.
- Complies to all safety regulations. Safety features and complete control over low and high voltage circuits are under constant supervision, providing reliable operation.
- Offers a versatile field of operation: as a separate power for mobile indoor applications, as an installed power supply in a 19" rack or in a splash proof casing for outdoor applications.
- Low noise operation.
- Flexible through the availability of a wide range of Universal Fiber Plates such as ST, LC, SC and OpticalCON.
- Supports LDX 100 Series NativeIP and DirectIP(+) workflows and camera local power configurations and DirectIP(+) workflows.
- High efficiency 48 VDC to 300 VDC converter stage to provide the required camera operating voltage over long SMPTE Hybrid Fiber cable lengths.
- Supports robust, high power to the camera (up to 300 W) which enables ‘large’ camera configurations including box lenses with SuperXpanders.
- (2AC model only) Fully automatic secondary AC mains redundancy, provides failsafe operation in the event of primary AC mains power line dips and/or drop outs. Fully recovers to primary AC mains when re-supplied and deemed reliable after a 30 second evaluation period.
- Active cooling with dual, field-serviceable fan modules.

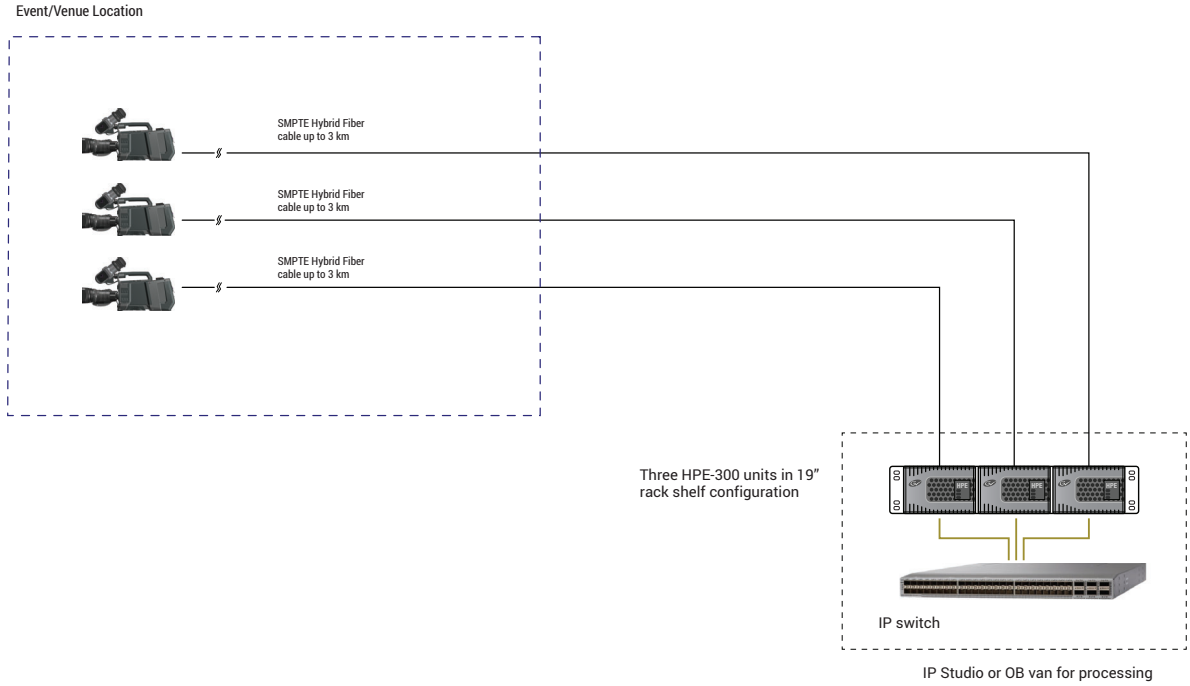
2 Installation

Configurations

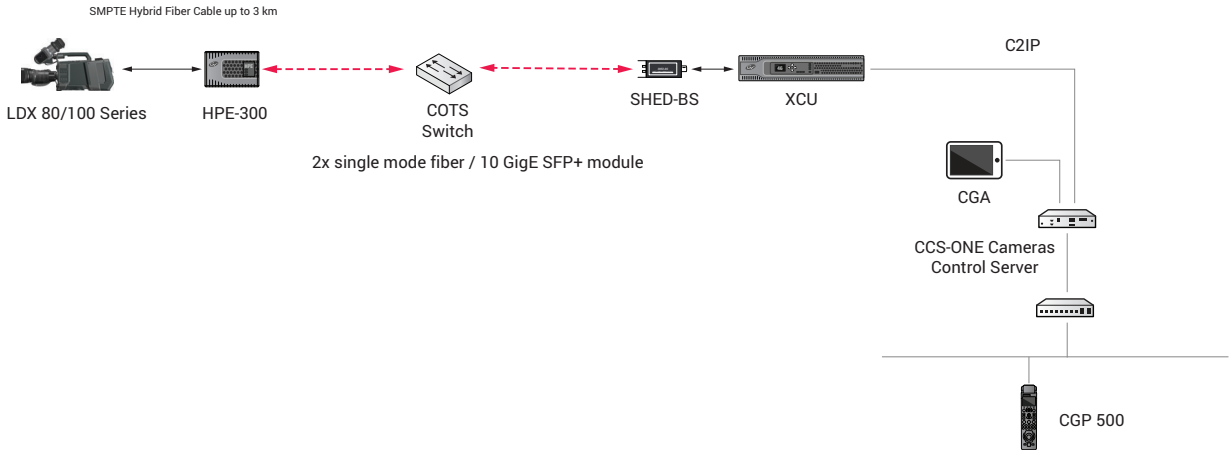
Workflow using NativeIP with LDX 100



Workflow using SMPTE hybrid fiber



Workflow using DirectIP(+)



For more information about DirectIP(+) configurations and settings, refer to the DirectIP(+) application note on the Grass Valley website.

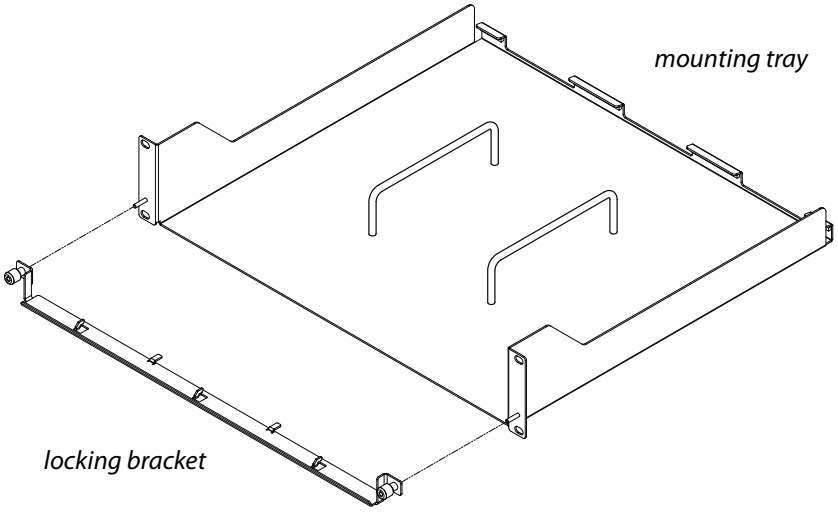
Mounting

Three options for installation in a rack or for standalone operation are available:

- HPE-TRAY (rack mounting shelf)
- HPE-HANDIPAK (feet and handle kit)
- HPE-ENCL (splash proof enclosure)

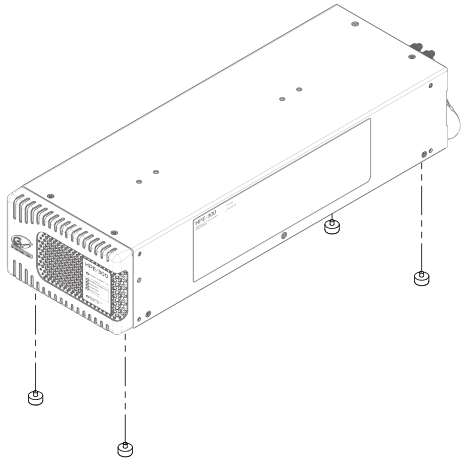
Rack mounting (HPE-TRAY)

Use the HPE-TRAY rack mounting option to install up to 3 units into a standard width 19" rack space. The HPE-TRAY package contains the mounting tray and a front locking bracket. Remove the locking bracket by loosening the two thumb screws at the sides:

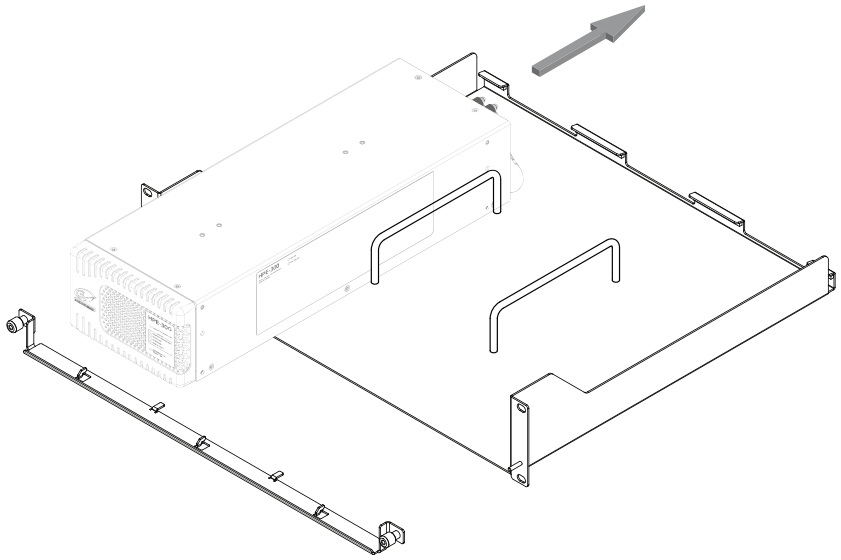


Install the HPE-TRAY into a standard 2RU 19" rack space. Secure the tray in the rack by using the proper screws and/or nuts (refer to the instructions and materials of your 19" rack).

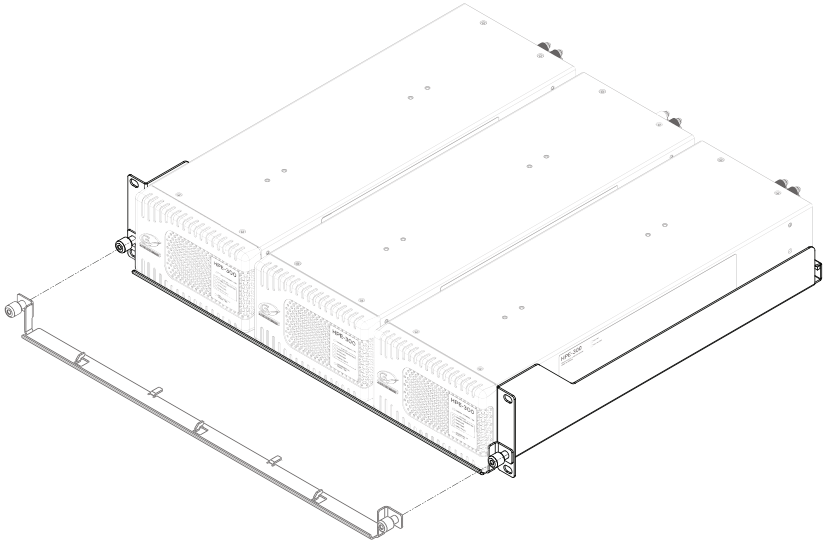
Before placing an HPE-300/HPE-300-2AC unit, remove the four rubber feet from the bottom plate:



Place the (first) HPE-300/HPE-300-2AC unit at the left side of the tray and slide it backward until it locks against the back studs:

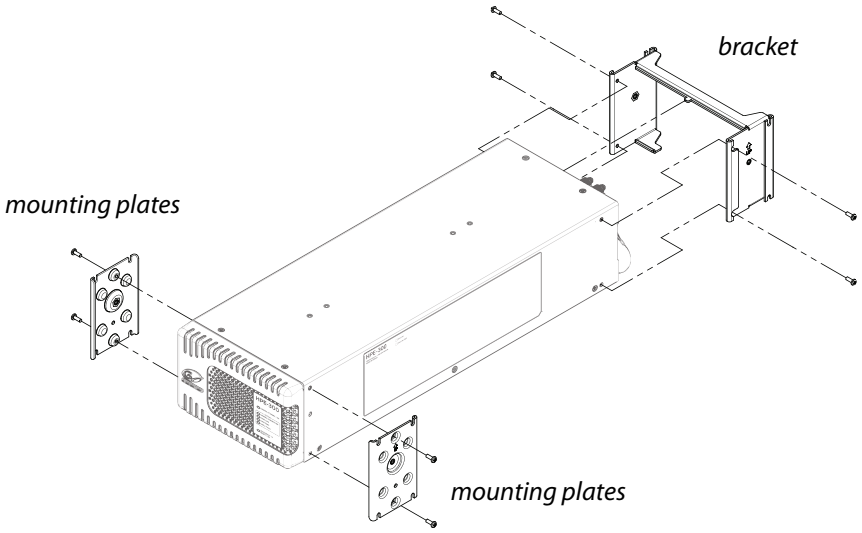


After placing the other two units in the same fashion, re-attach the locking bracket and tighten the two thumb screws to fix the units.

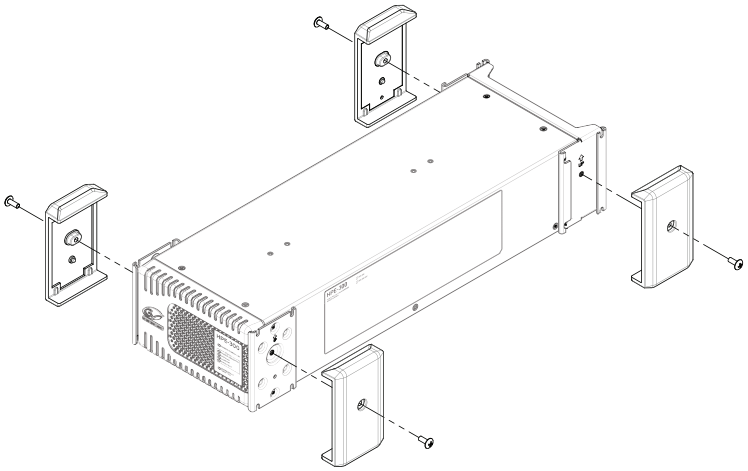


Feet and handle kit (HPE-HANDIPAK)

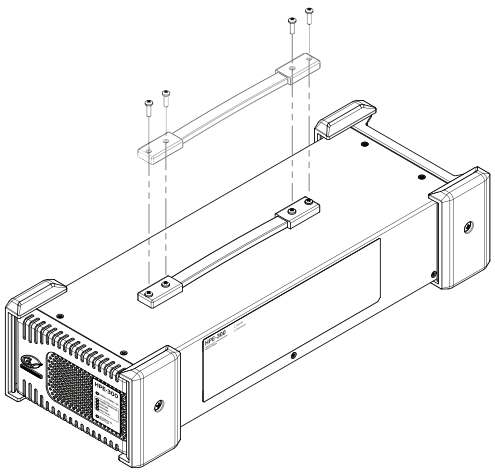
Attach the two mounting plates to the front using four screws. Slide the bracket over the back of the unit and secure it with four screws:



Attach the four rubber protectors to the brackets on each corner of the unit:



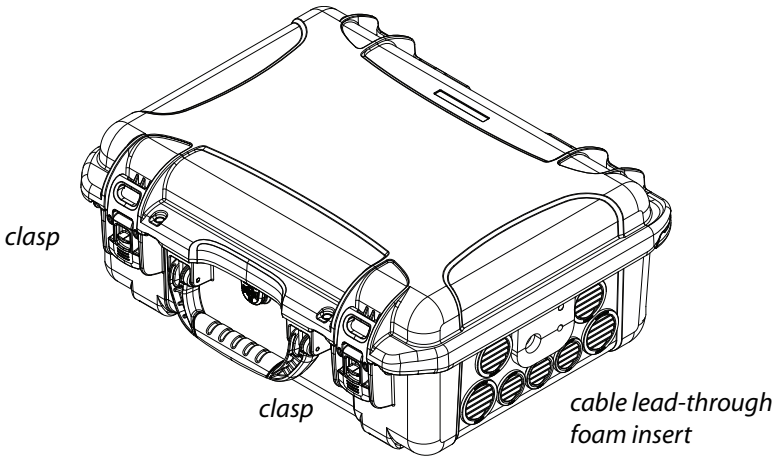
Attach the carrying strap to the top plate of the unit using four screws:



The unit is now more robust and ready to carry around and be used it in the field.

Splash proof enclosure (HPE-ENCL)

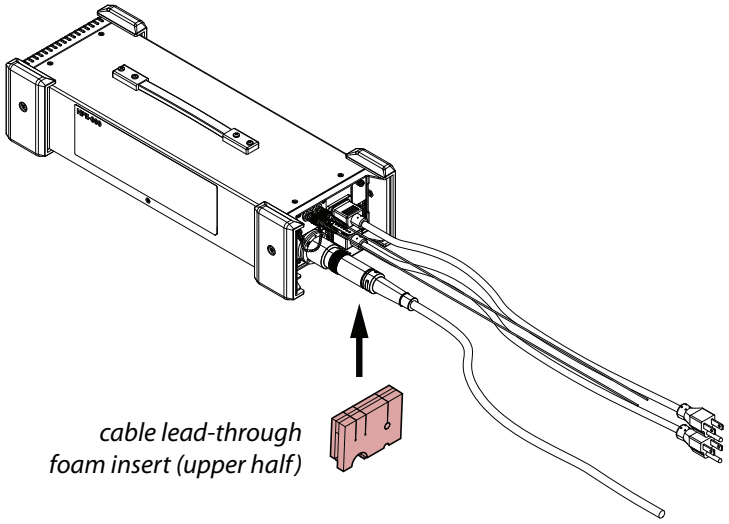
The HPE-ENCL splash proof enclosure ensures safe operation in outdoor situations.



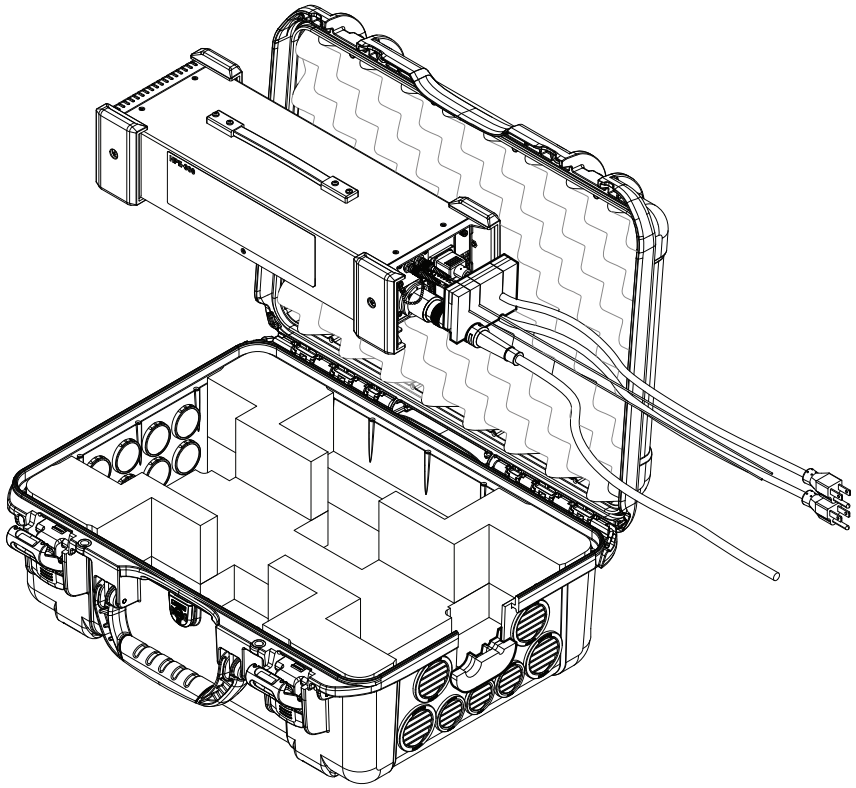
Note: the HPE-ENCL can be used for the HPE-300/HPE-300-2AC with our without the HPE-HANDIPAK installed.

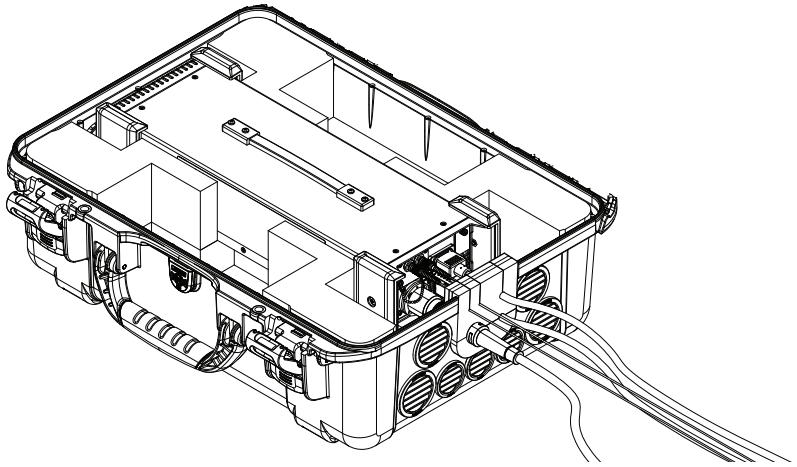
Open the two claps and open the lid. Remove the cable lead-through foam insert from the outer casing.

Connect all the necessary cables to the HPE-300/HPE-300-2AC and slide the upper half of the foam over the cables and connectors:



Place the unit with the foam insert attached back into the casing and make sure it fits closely around the edges of the outer casing. Make sure the unit is fixed into the large foam insert in the casing:





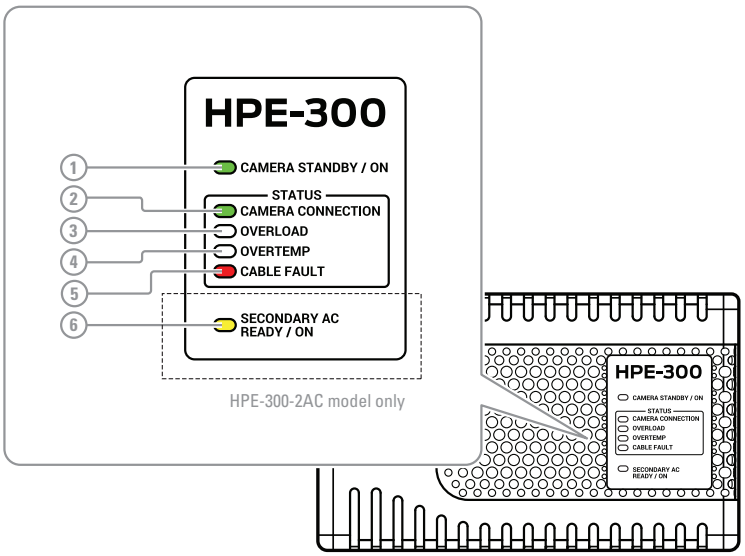
Close the lid and fasten the clasps. The unit is now ready for use in outdoor situations.

Note: it is recommended to use the enclosure in horizontal position (as illustrated in the pictures). Do not tilt it.

3 Operation

Indicators

During setup and operation, system functionality can be monitored on the HPE-300/HPE-300-2AC front panel. A group of LED indicators provide operational and diagnostic information as well as hardware status.



① CAMERA STANDBY/ON indicator

This indicator lights GREEN (default) when the high voltage (300 VDC) is present and camera power is switched on. The indicator lights YELLOW when AC power is present and the camera is switched to low voltage/standby mode.

② CAMERA CONNECTION

This indicator lights GREEN (default) when a valid camera connection is detected. It is off when there is no camera connection.

Note

This LED is also used as an indicator for the internal FPGA code revision. At power up, this LED flashes an appropriate number of times equal to the revision number of the code installed in the unit's FPGA.

③ OVERLOAD indicator

This indicator is off (default) during normal operation. It lights RED when the output is driving an excessive load (higher than the 300 W output rating).

④ OVERTEMP indicator

This indicator is off (default) during normal operation. It lights when one of the two following temperature/fan related faults occur:

- The LED continuously lights RED for up to 2 minutes when the internal temperature exceeds safe operating limits due to overload or inadequate ventilation. The system continues to operate normally for this interval and the LED automatically resets to 'off' if the load is minimized or the cooling efficiency is improved, lowering the internal operating temperature to a safe level. If the 2 minute time interval is exceeded, the LED will flash on and off each second at a 50% duty cycle, and the 300 VDC output is switched off to allow the fans to lower the internal operating temperature to a safe level.
- The LED flashes RED with 1 short pulse every 2 seconds if fan 1 fails or its rotor locks, 2 short pulses if fan 2 fails, or 3 short pulses if both fans fail simultaneously.

⑤ CABLE FAULT indicator

This indicator is off during (default) normal operation. It lights RED when one of the following cases occurs:

- There is a short, open or shield fault in the attached SMPTE Hybrid Fiber cable;
- No SMPTE Hybrid Fiber cable is connected (= open cable connection)

⑥ SECONDARY AC READY/ON indicator (only for HPE-300-2AC model)

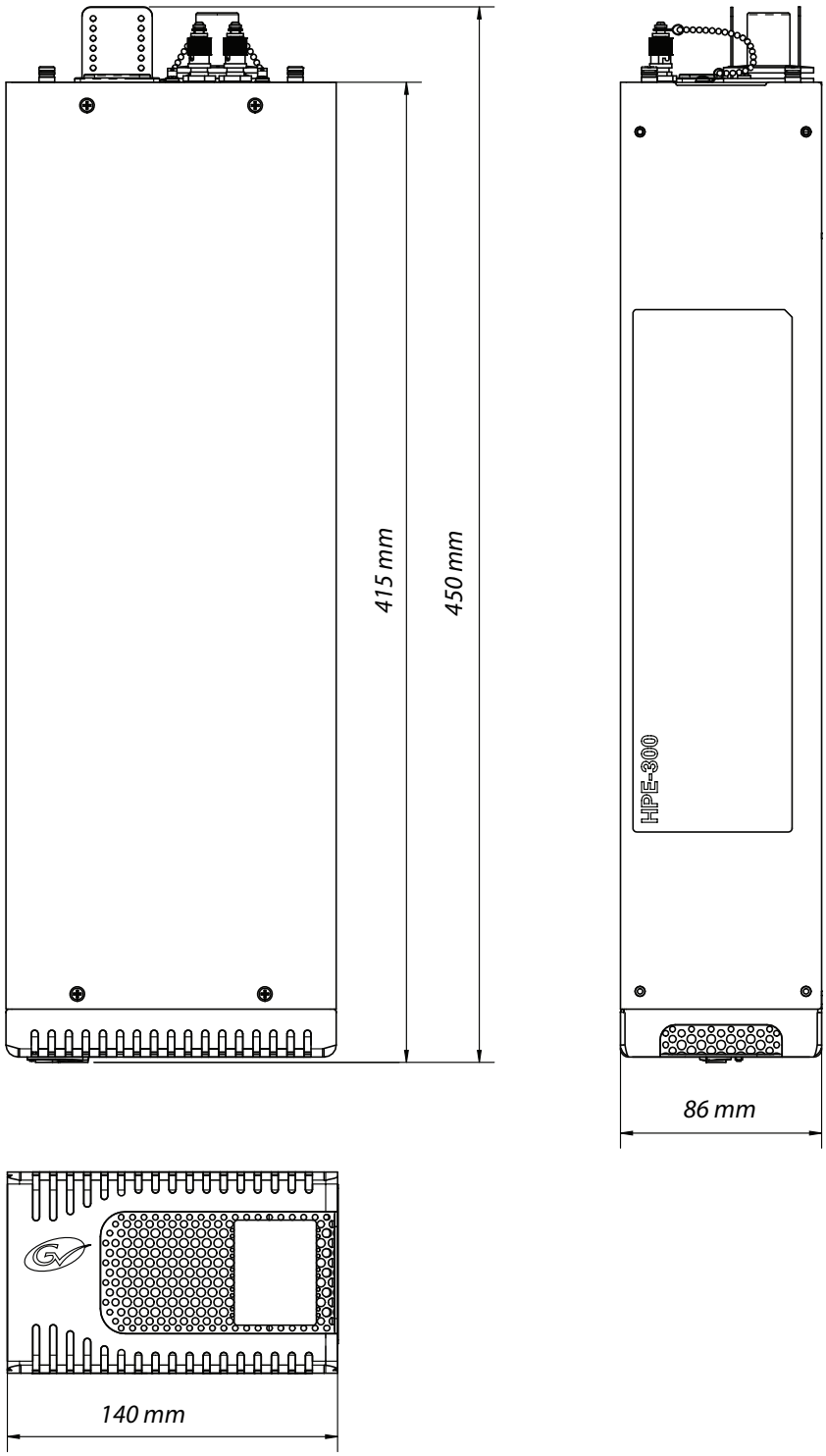
- This indicator is off when no AC is applied to the Secondary mains input (unit operating on primary AC mains).
- It lights GREEN when AC power is present at the secondary mains input indicating its availability for use.
- It lights solid YELLOW when the secondary AC mains source is powering the unit with primary mains missing.
- The indicator flashes YELLOW when the unit is monitoring the condition of the primary AC mains input for 30 seconds, after which it returns to GREEN when the primary AC mains is re-established.

4 Specifications

Specifications

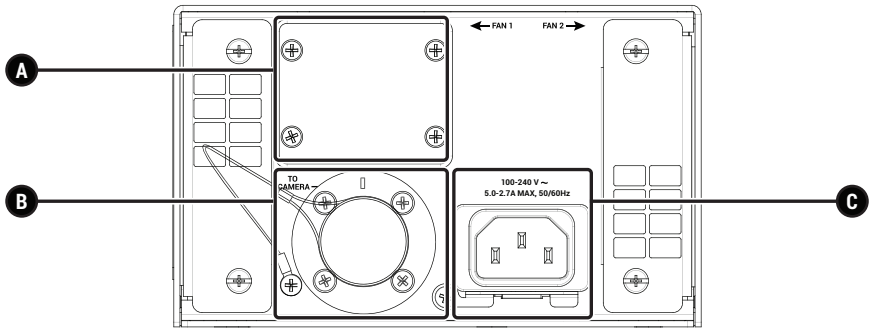
Dimensions (Height x Width x Depth)	140 (2x RU) x 86 x 450 mm (5.5 x 3.4 x 17.7 in) incl. connectors;
Weight	3.3 kg (7.3 lbs)
Operating temperature range	-20 to 45° C (-4 to 113° F)
Operating humidity range, RH	0 to 95% non-condensing
Power consumption	Idle ≤ 10 W max. 100 to 240 VAC, 50/60 Hz; Fully loaded ≤ 390 W max. 100 to 240 VAC, 50/60 Hz
Power output	Standby mode: -26 VDC ±5% @ 40 mADC; Normal Operating Mode: 300 VDC ±5% @1.0 ADC max.
Connectivity	Electro-optical: Lemo SMPTE 304 (FXW.3K) hybrid fiber connector; Universal Fiber Plates: ST/UPC, LC/UPC, SC/UPC, SC/APC, Neutrik OpticalCON Duo (all single-mode I/O)

Dimensions

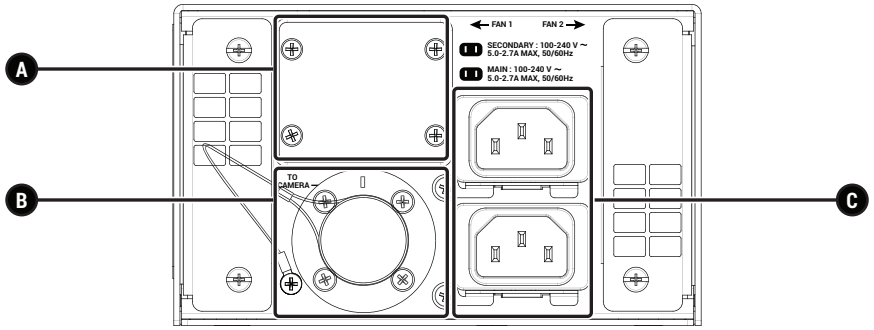


Connectors

Connector back panel (HPE-300)

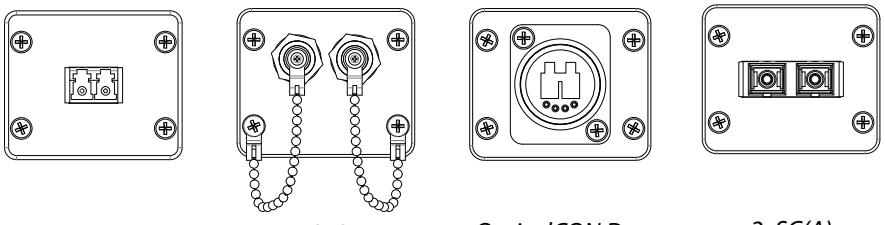


Connector back panel (HPE-300-2AC)



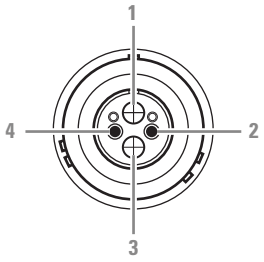
Fiber connector (area A)

Different universal fiber plates (UFPs) are available, depending on your specific optical infrastructure:



2xLC *2xSTSM* *OpticalCON Duo* *2xSC(A)*

SMPTE Hybrid Fiber connector (area B)



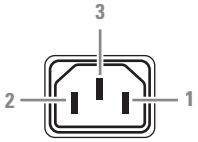
Hybrid Fiber connector

Pin	Description
1	Optic fiber channel A
2	Power supply return
3	Optic fiber channel B
4	Power supply

LEMO SMPTE 304 (FXW.3K) hybrid fiber connector

Mains power connector (area C)

(2x for HPE-300-2AC model)



IEC style 3-pin male

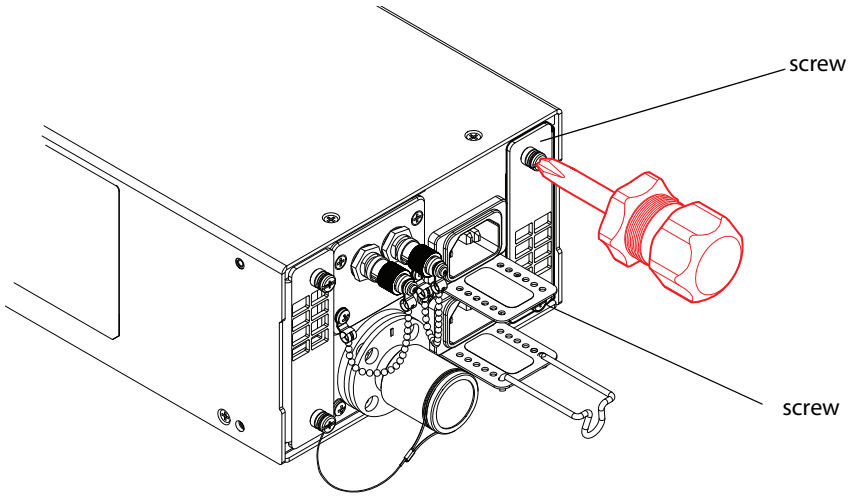
Pin	Description
1	Neutral
2	Line
3	Earth

Mains input voltage:
100 to 240 VAC (auto-sensing)

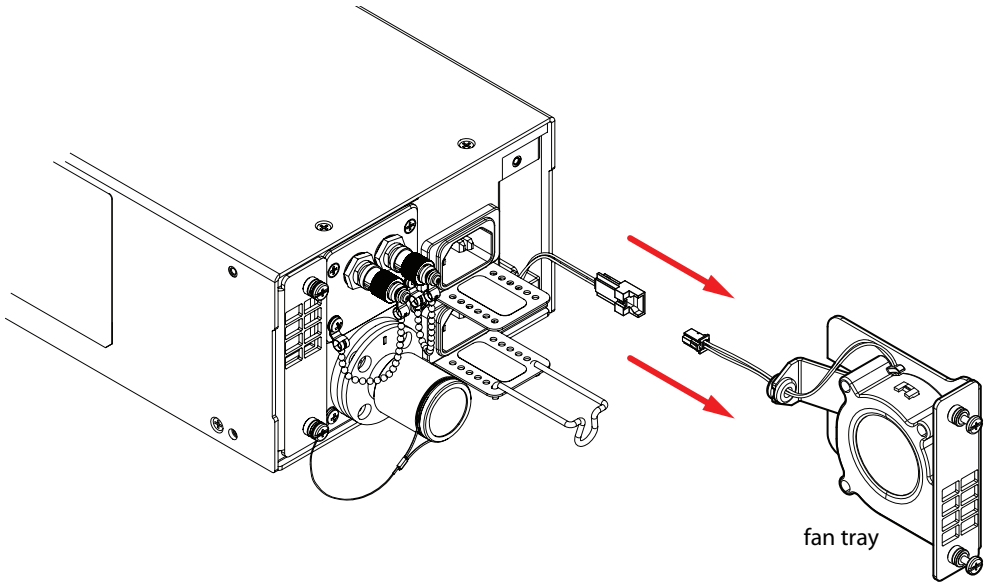
Fan module replacement

The ordering number of the replacement fan module is **HPE-300-FAN.** To replace the cooling fan of the HPE-300/HPE-300-2AC follow these steps:

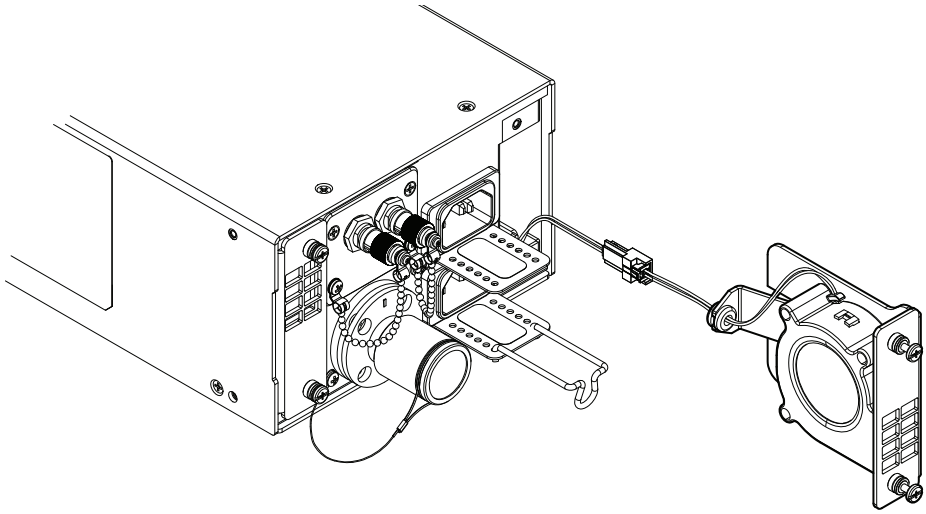
- Disconnect all power supply cord(s)
- Loosen the two screws of the fan tray at the back panel of the unit:



- Gently pull out the fan tray until the small power connector becomes visible.
- Disconnect the cable and remove the fan tray.



- Connect the new fan tray:



- Put back the tray in place making sure the cables are not stranded between the metal parts
- Screw the fan tray in place.

Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An on line form for e-mail contact is also available from the website.

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