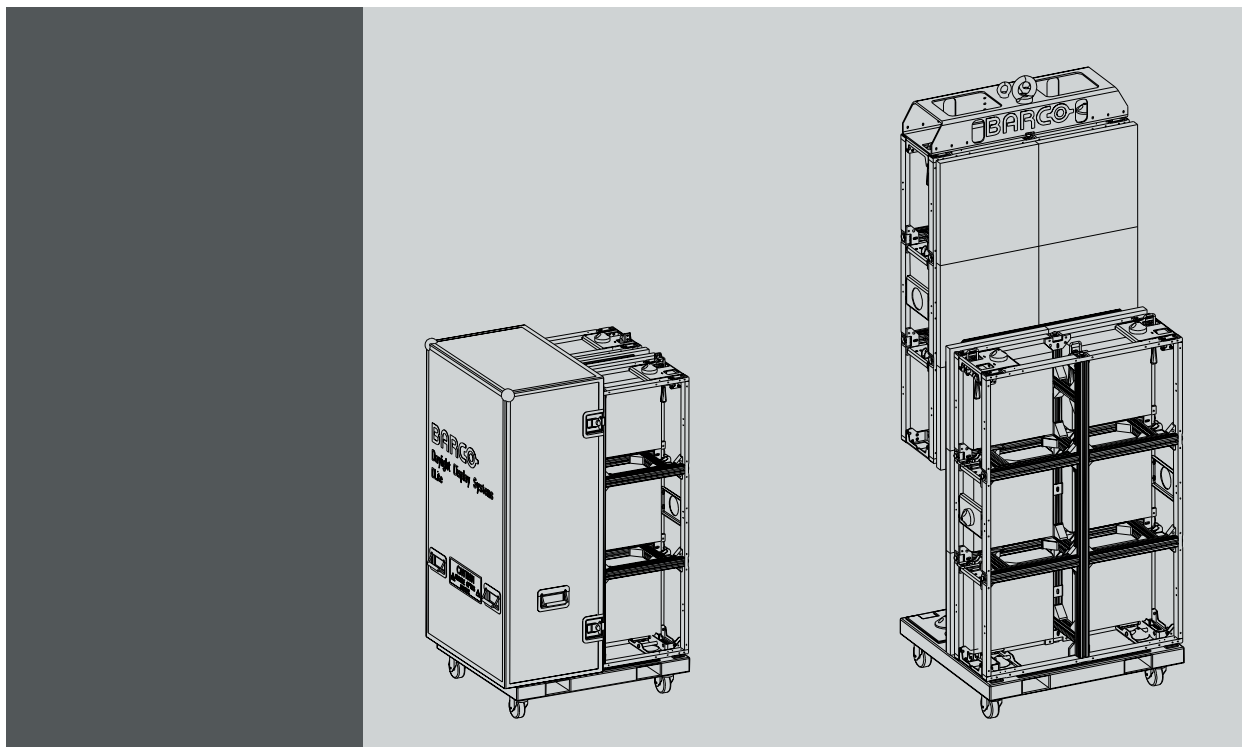


# DLite rental display



## Installation manual

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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 may cause harmful interference, in which case the user will be responsible for correcting any interference.



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# 1. SAFETY

## 1.1 Safety guidelines

### Personal protection



Image 1-1  
Warning



Image 1-2  
Suspended loads



Image 1-3  
Hard hat



Image 1-4  
Mind your fingers

Be aware of suspended loads, wear a hard hat to reduce the risk of personal injury. Mind your fingers while working with heavy loads.

### Installation personnel

This installation must be performed by authorized and qualified technical personnel only.

Accredited safety officers must ensure the safety of the site, construction, assembly, connection, use, dismantling, transport etc. of such safety critical systems.

### Caution

Installation should be performed only after you are thoroughly familiar with all of the proper safety checks and installation instructions. To do otherwise increases the risk of hazards and injury to the user.

Assembly parts are designed for intended use only in conjunction with Barco LED walls.

Do not modify and/or replicate any component. Barco uses specific materials and manufacturing processes in order to achieve part strength. Consult Barco for assistance with custom applications.

Always follow Barco installation instructions. Contact Barco if you should have any question regarding the safety of an application.

The manufacturer assumes no liability for incorrect, inadequate, irresponsible or unsafe assembly of systems.

### Product care

Structural & mounting components should be kept dry, clean, lubricated (only if recommended), coated properly, and otherwise maintained in a manner consistent with part design. Barco products must be used in a manner consistent with their design and inspected on a routine basis for security, wear, deformation, corrosion and any other circumstances that may affect the load handling capability of the part.

Barco recommends inspections at regular intervals for all installations and increasing in frequency for more critical installations. If a part is found to have damage, which may cause a decrease in load capability, the part must be removed for service or replaced immediately.

Under no circumstances are Barco parts repairable by anyone other than Barco.

### 1.2 Important Safety Instructions

#### Instructions:

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- IMPORTANT, plug holder clamps must be locked firmly on all display tile units and power boxes to prevent the possible ingress of fluids or solid particles. Replace damaged clamps or seals immediately.
- Do NOT submerge fully or partly in water or other liquids.
- Clean only with materials or chemicals that are inert, nonabrasive, noncorrosive and non-marking. Consult the manufacturer for further advice should any doubts exist regarding any cleaning procedure.
- Do not block ventilation openings. Install in accordance with the manufacturers instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding type plugs/sockets. If the provided sockets / plugs are damaged then replacement of the defective parts must be undertaken immediately.
- Protect the power/data cords from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Replace damaged power/data cords immediately.
- Only use attachments/accessories specified by the manufacturer.
- Disconnect the power to this apparatus during lightning storms or provide suitable additional lightning protection. Unplug this apparatus when unused for long period of time.
- Refer all servicing to qualified service technicians/personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, the apparatus does not operate normally, or has been dropped.
- Use only with systems or peripherals specified by the manufacturer, or sold with the apparatus. Use caution during lifting/moving or transporting to avoid damage by possible tipping.

### 1.3 Important Warnings

#### Important Warnings:

- **Risk of electric shock:**

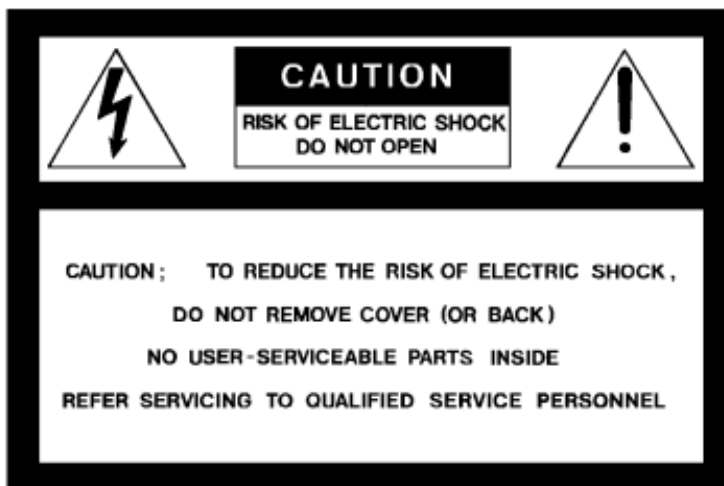


Image 1-5  
Risk of electrical shock

Risk of electric shock. Do not open. To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

The lightning flash with an arrowhead within a triangle is intended to tell the user that parts inside this product may cause a risk of electrical shock to persons.

The exclamation point within a triangle is intended to tell the user that important operating and/or servicing instructions are included in the technical documentation for this equipment.

- **Maximum ambient temperature:**

The maximum recommended ambient temperature for the LED wall is 50 °C, the minimum temperature is -20 °C.



- **High leakage current:**  
The combination of multiple tiles in an installation results in increased levels of leakage current. In order to avoid risk of electric shock due to high leakage current, proper grounding of the installation is required.
- **Risk of personnel injury:**  
Secure all tiles in the rack. As a supplementary safeguard, and in order to protect against the risk of personnel injury, each tile should be attached to the rack by a safety cable.
- **Flammable materials:**  
Keep flammable materials away from the installation (such as curtains). A lot of energy is transferred into heat. The installation should be such that the amount of air flow required for safe operation of the equipment is not compromised. Proper ventilation must be provided.
- **Risk of electric shock / Risk of fire:**  
Power cables and connectors have been designed with special properties for outdoor use, and resistance against ingress of water. Use only the factory recommended power cables and connectors. Using other cables and connectors may result in risk of electric shock and risk of fire.  
To protect against risk of fire by overloading of power cables, MAXIMUM 6 TILES may be connected in parallel. Each source cable supplying a branch of MAXIMUM 6 TILES should be protected by a circuit breaker or fuses rated 16 A / 250 V.
- **Disconnect device:**  
When the appliance inlets of the individual tiles are not accessible, the socket outlets supplying the rack shall be installed near the equipment and be easily accessible, or a readily accessible general disconnect device shall be incorporated in the fixed wiring.
- **This equipment MUST be earthed:**  
In order to protect against risk of electric shock, the installation should be properly grounded. Defeating the purpose of the grounding type plug will expose you to the risk of electric shock.
- **Power system:**  
It is recommended to use a TN-S power distribution system (a power distribution system with a separate neutral and grounding conductor) in order to avoid large ground currents loops due to voltage differences in the neutral conductor. The total electrical installation should be protected by an appropriate rated disconnect switch, circuit breakers and Ground Fault Current Interrupters. The installation shall be done according to the local electrical installation codes. In Europe special attention should be given to EN 60364, the standard for electrical installation of buildings. In Germany VDE 0100 should be adhered to.
- **Mains cords:**  
The power cords delivered with this system have special properties for safety. They are not user serviceable. If the power cords are damaged, replace only with new ones. Never try to repair a power cord.



## 2. SYSTEM OVERVIEW

### Overview

- Introduction
- DLite display tiles
- DLite rental structures
- DLite rental flight cases
- DLite rental setup accessories
- Cables for DLite displays
- Power boxes
- Digitizer
- Fiberlink system
- Control software

### 2.1 Introduction

The fundamental elements of a DLite rental display are:

- DLite display tiles.
- DLite rental structures.
- DLite rental foot, foot beams and stacker or DLite rental truss beams.
- Power box.
- Digitizer.
- Control software.

Block diagram DLite rental display system:

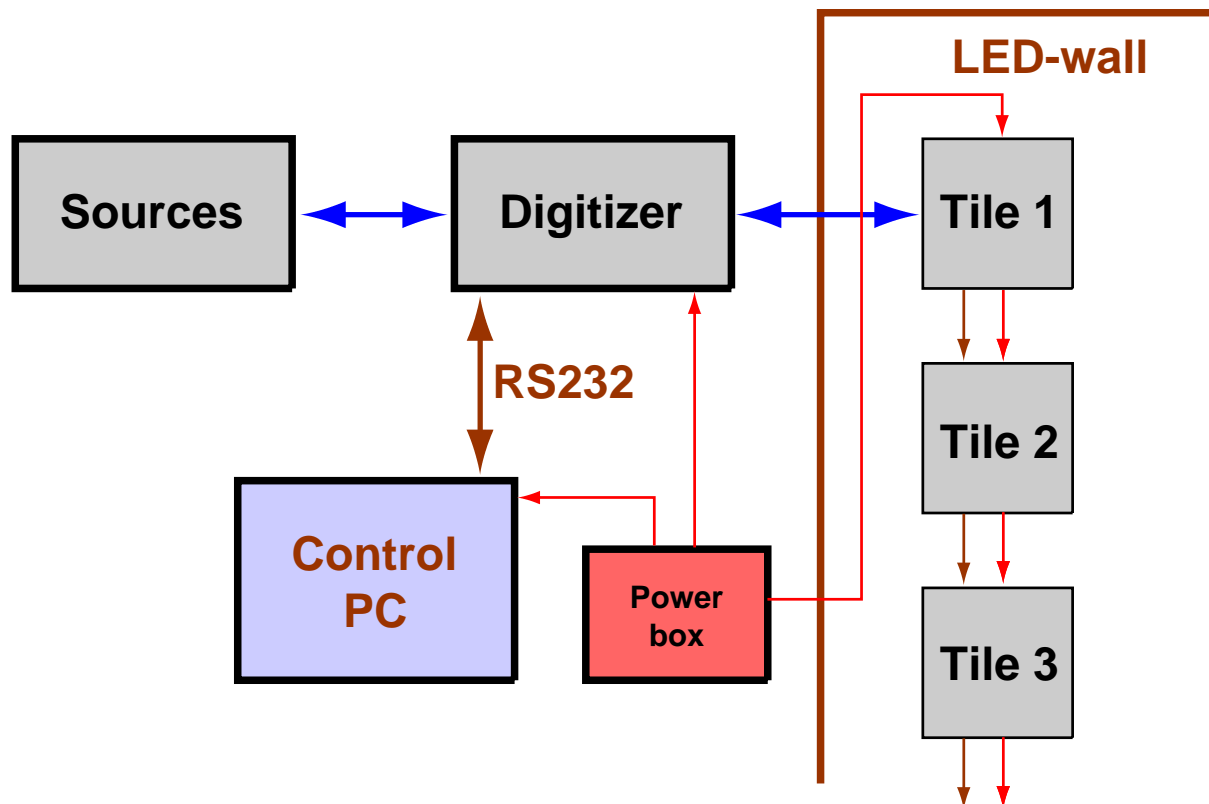


Image 2-1  
Block diagram DLite system.

### 2.2 DLite display tiles

#### 2.2.1 Introduction DLite display tiles

##### Introduction

The DLite tiles are the solution to the - until recently - unsolved problem of a full color video picture in the outdoors. Addressing the huge need of brightness together with the required water-resistant, it is a display that provides a "best of breed" video and/or data picture outside in any weather without any supplemental sheltering.

The modular concept of the display still enables easy installation and maintenance of the display. Built-in intelligence provides for auto calibration of the full display, hot swap and diagnostic capabilities.

An extremely rugged tile, confers an IP65 rating to the whole DLite display. An aluminium cast protects all the electronics in a self enclosed environment. This provides unrivaled resistance to external nuisance as long-term outdoor exposure to salty air, corrosive intrusion, ...

A hot swap capability enables to service a display module while the rest of the display keeps on playing.

A very exclusive sourcing of the LED component combined with the Barco processing expertise ensures extreme brightness level, even at full white on a color calibrated wall. This brightness is guaranteed through time due to the very long lifetime of the LED components used in the Barco DLite tiles.

An unique video processing feature enables to create a visual resolution quasi doubles the physical resolution defined by the cluster of LED's spread on the surface of the display. Barco's Dual Pixel Technology confers to the DLite range a picture smoothness and an enhanced resolution that makes it even suitable for shorter viewing distances or indoor applications in some instances.

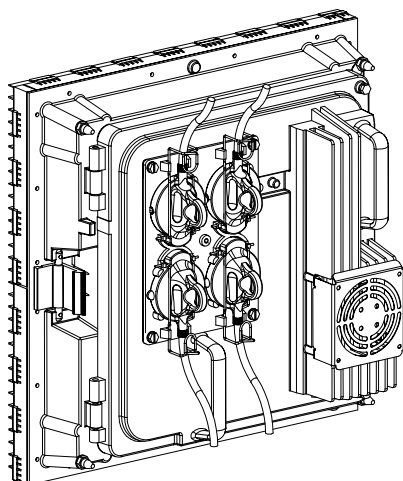


Image 2-2  
DLite tile rear view.

##### Order info

Article No.	Description
R9004005	DLite 7 display tile
R9004026	DLite 10 display tile
R9004015	DLite 14 display tile



Do not use other tiles than those specified in the "Order info" table.

## 2.2.2 Specifications DLite tiles

### 2.2.2.1 Specifications DLite 7

#### Specifications

<b>Visual Resolution</b>	7,0 mm
<b>Physical Resolution</b>	14,0 mm
<b>Hor. viewing angle</b>	120° (min.50% brightness)
<b>Vert. viewing angle</b>	60° (min.50% brightness)
<b>Tile dimensions</b>	width: 448mm (17.6") height: 448mm (17.6") depth: 195mm (7.7")
<b>Temperature range</b>	operating : -20°C - 40°C (-4 - 104°F) storage : -20°C - 60°C (-4 - 140°F)
<b>Brightness</b>	6500 NIT 5000 NIT (calibrated @ 6500°K)
<b>Lifetime</b>	50 000 h (full white - half brightness)
<b>Processing</b>	color : +10 bit
<b>LED configuration</b>	2R, 2G, 1B
<b>Pixel density</b>	20.407/m² (1.898/ft²) 4.096/tile
<b>Power consumption</b>	maximum: 250 W / Tile average: 62 W / Tile
<b>Weight / Tile</b>	14 Kg / 30,8 lbs (excluding structure)
<b>Colors</b>	1,07 billion
<b>Refresh rate</b>	400 Hz minimum (PAL / NTSC)
<b>Humidity</b>	operating: 10 - 99% storage: 10 - 99%
<b>D320 input compatibility</b>	S-Video - Composite - YUV - RGB - SDI - HDSDI - Data DVI up to UXGA
<b>Certifications</b>	UL - CE - TUV - FCC Class A

### 2.2.2.2 Specifications DLite 10

#### Specifications

<b>Screen size</b>	Unlimited
<b>Weight</b>	14 kg
<b>Visual Resolution</b>	9,3 mm
<b>Physical Resolution</b>	18,6 mm
<b>Hor. viewing angle</b>	120° (min. 50% brightness)
<b>Vert. viewing angle</b>	60° (min. 50% brightness)

## 2. System overview

<b>Avg Power Consumption</b>	90 VA / tile
<b>Max Power Consumption</b>	350 VA / tile
<b>Tile dimensions</b>	Width: 0,448 m Height: 0,448 m Depth: 0,195 m
<b>Optimal viewing distance</b>	15 meter
<b>Outdoor Compliance</b>	IP 65
<b>Temperature range</b>	<b>operating:</b> -20°C <> 40°C <b>storage:</b> -20°C <> 60°C
<b>Brightness</b>	6.500 NIT
<b>Calibrated Brightness</b>	5000 NIT ± 10% (calibrated @ 6500°K)
<b>Contrast Ratio</b>	1000 : 1
<b>Lifetime</b>	50.000h [half brightness]
<b>Processing</b>	+ 10 bit
<b>Source compatibility</b>	S-Video - Composite - YUV - RGB - SDI - HDSDI - Data DVI up to UXGA
<b>Refresh rate</b>	400 Hz minimum (PAL / NTSC)

### 2.2.2.3 Specifications DLite 14

#### Specifications

<b>Contrast Ratio</b>	1.000 : 1
<b>Screen size</b>	Unlimited
<b>Weight</b>	14 kg
<b>Visual Resolution</b>	14,0 mm
<b>Physical Resolution</b>	28,0 mm
<b>Hor. viewing angle</b>	120° (min. 50% brightness)
<b>Vert. viewing angle</b>	60° (min. 50% brightness)
<b>Avg Power Consumption</b>	90 VA / tile
<b>Max Power Consumption</b>	350 VA / tile
<b>Tile dimensions</b>	Width: 0,448 m Height: 0,448 m Depth: 0,195 m
<b>Optimal viewing distance</b>	20 meter
<b>Outdoor Compliance</b>	IP 65

<b>Temperature range</b>	<b>operating:</b> -20°C <> 40°C <b>storage:</b> -20°C <> 60°C
<b>Brightness</b>	6.500 NIT
<b>Calibrated Brightness</b>	5000 NIT ± 10% (calibrated @ 6500°K)
<b>Lifetime</b>	50.000h [half brightness]
<b>Processing</b>	+ 10 bit
<b>Source compatibility</b>	S-Video - Composite - YUV - RGB - SDI - HDSDI - Data DVI up to UXGA
<b>Refresh rate</b>	400 Hz minimum (PAL / NTSC)

### 2.2.3 Dimensions DLite tiles

#### Dimensions

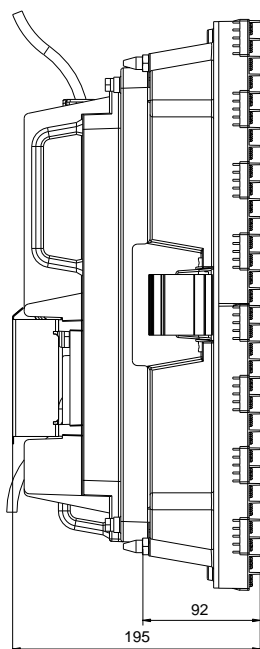
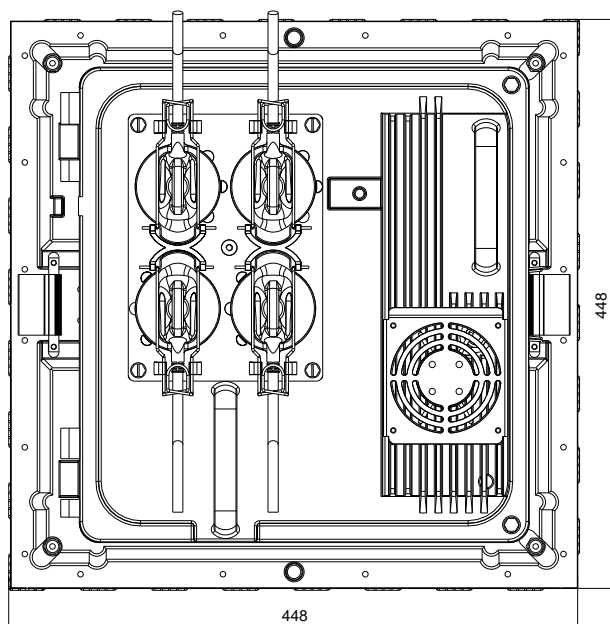


Image 2-3  
Dimensions given in millimeters.



## 2.3 DLite rental structures

### 2.3.1 Introduction DLite rental structures

#### Introduction

The DLite rental structures are designed to enable ultra fast build up and breakdown of an outdoor rental LED display. They consist in a 2 x 2 and a 2 x 3 configuration (H x V). The build up process is streamlined, for easy and safe operations.

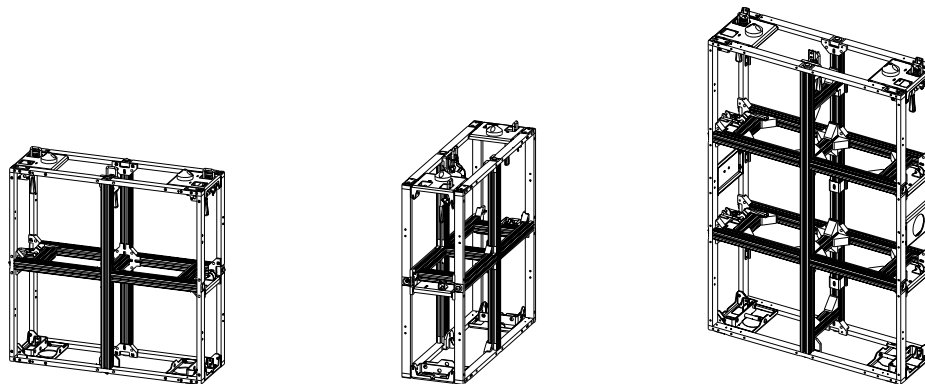


Image 2-4  
DLite rental structures.

### Order info

Article no.	Description
R9850570	2 x 2 DLite rental structure.
R9850160	2 x 3 DLite rental structure.

### 2.3.2 Specification DLite rental structures

#### 2.3.2.1 Specification 2 x 2 DLite rental structure

##### Specification

Compatibility	2x2 structure can be used in combination with 2x3 structure to achieve full flexibility.
Width structure	896 mm + 2.5 mm
Height structure	896 mm + 40 mm
Depth structure	355 mm
Weight frame	45 kg
High precision positioning	2 large positioning cones for primary positioning 2 smaller positioning cones
Truss build-up	14 tiles high
Foot build-up	8 tiles high
H clamps capacity	700 kg + safe workload
Accessibility & servicing	Front & rear accessibility of display module
Registered approval	TUV approved for safety

#### 2.3.2.2 Specification 2 x 3 DLite rental structure

##### Specification

Compatibility	2x3 structure can be used in combination with 2x2 structures to achieve full flexibility.
Width structure	896 mm + 2.5 mm
Height structure	1344 mm + 40 mm
Depth structure	355 mm
Weight frame	63 kg



<b>High precision positioning</b>	2 large positioning cones for primary positioning 2 smaller positioning cones
<b>Truss build-up</b>	15 tiles high
<b>Foot build-up</b>	9 tiles high
<b>H clamps capacity</b>	700 kg + safe workload
<b>Accessibility &amp; servicing</b>	Front & rear accessibility of display module
<b>Registered approval</b>	TUV approved for safety

### 2.3.3 Dimensions DLite rental structures

#### Dimensions 2 x 2 DLite rental structure

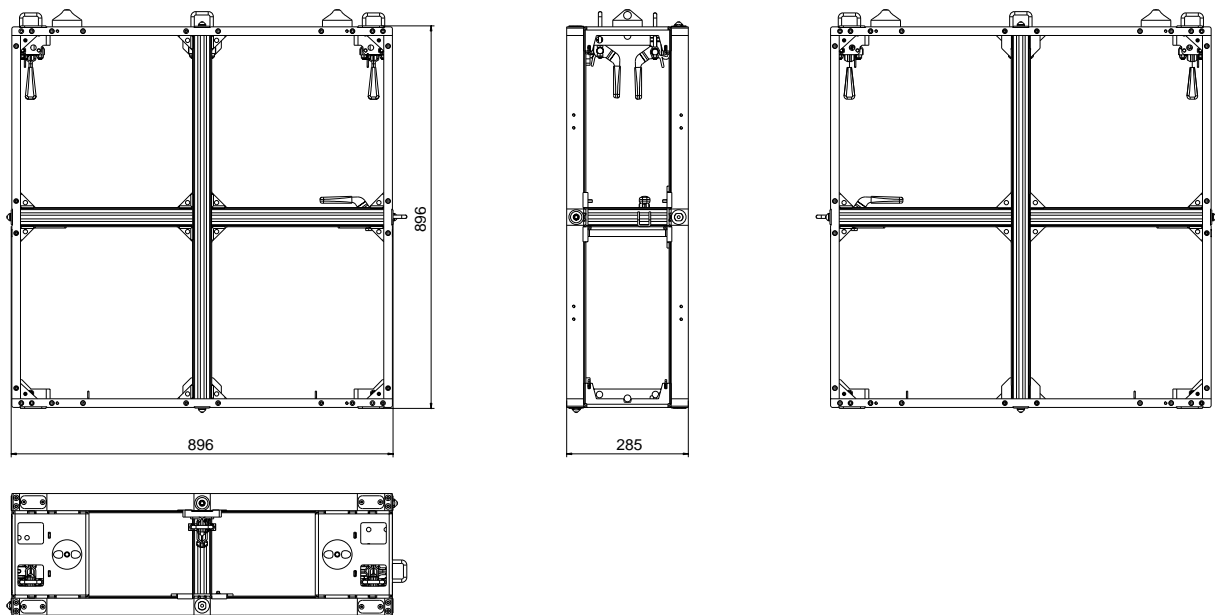


Image 2-5  
Dimensions given in millimeters.

Dimensions 2 x 3 DLite rental structure

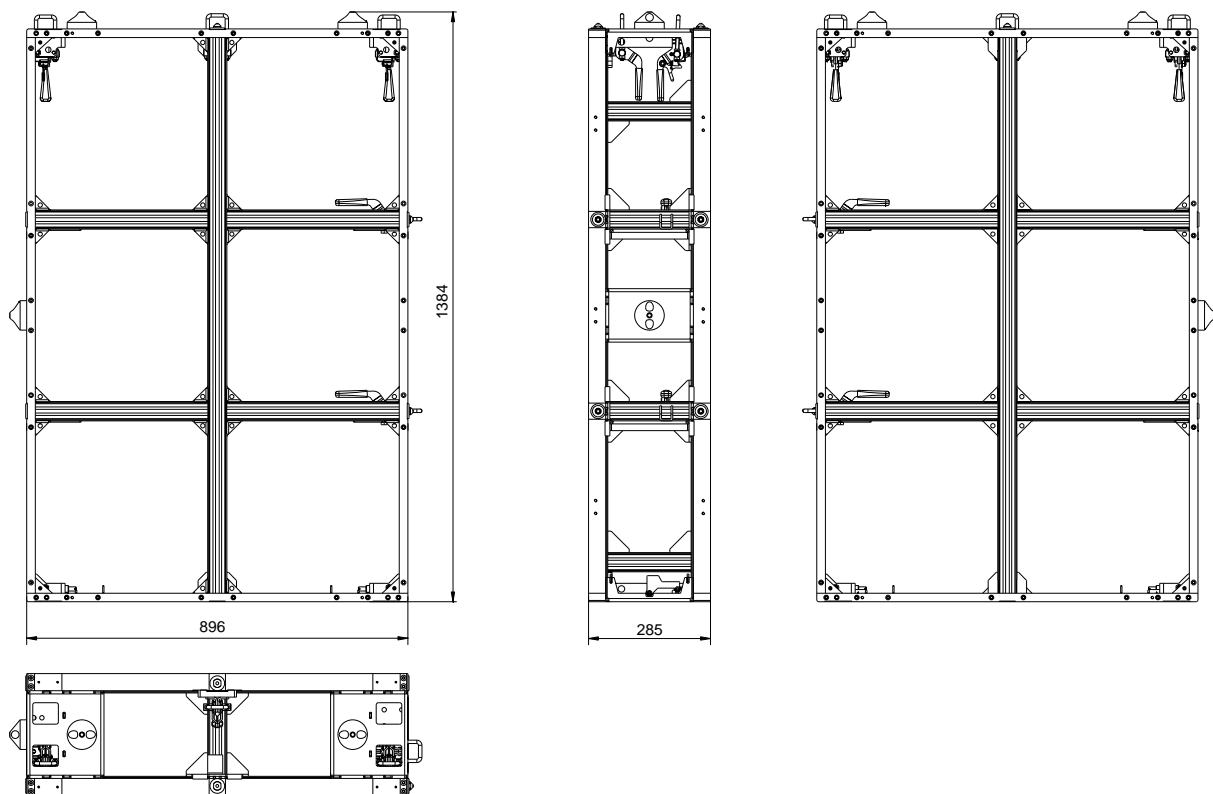


Image 2-6  
Dimensions given in millimeters.

2.4 DLite rental flight cases

2.4.1 Introduction DLite rental flight cases

Introduction

The DLite rental flight case holds up two rental structures with tiles mounted inside and is specifically designed to enable fast build up directly from flight case to display. There are two different sizes of DLite rental flight cases. One for the 2 x 2 rental structures and one for the 2 x 3 rental structures.

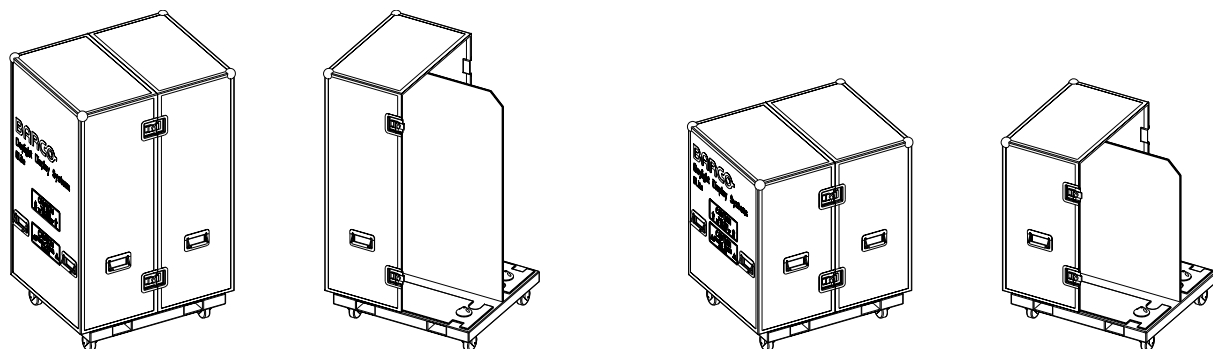


Image 2-7

Order info

Article No.	Description
R9850580	DLite rental flight case for 2 rental structures of 2 x 2.
R9850180	DLite rental flight case for 2 rental structures of 2 x 3.

## 2.4.2 Specifications DLite rental flight cases

### Specifications

Width flight case	1010 mm
Depth flight case	810 mm
Height flight case	Flight case for 2 x 2 rental structures : 1170 mm Flight case for 2 x 3 rental structures : 1610 mm
Weight flight case (empty)	Flight case for 2 x 2 rental structures : 90 kg Flight case for 2 x 3 rental structures : 114 kg

## 2.4.3 Dimensions DLite rental flight cases

### Dimensions

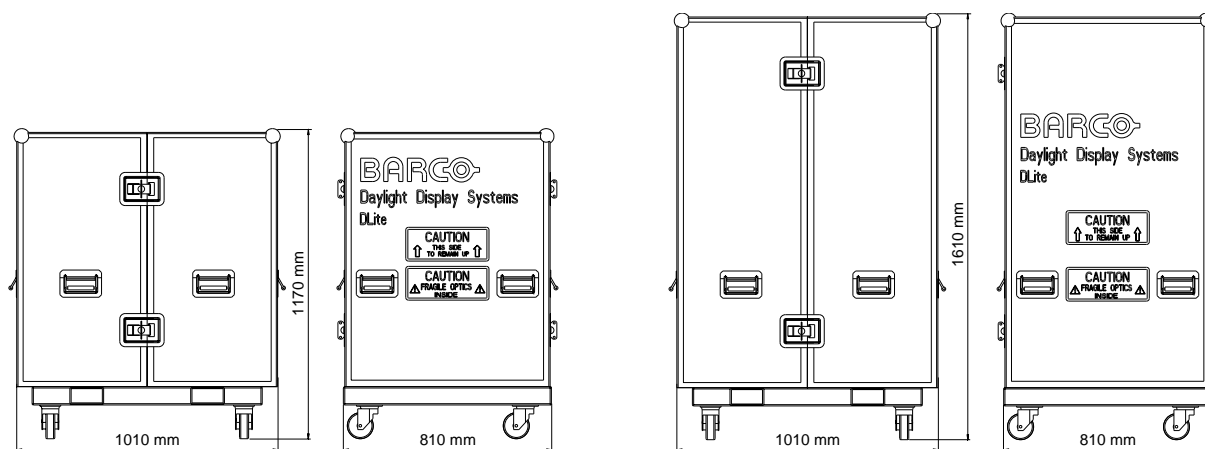


Image 2-8  
Dimensions given in millimeters.

## 2.4.4 Important warnings concerning DLite rental flight cases.

### Important warnings concerning transport and stack of DLite rental flight cases.

- Maximum stack two (2) DLite rental flight cases high. Never higher.
- Surface on which flight case is standing must be level to ensure that the total load is evenly spread out among the four wheels. The surface must also be able to support the load safely.
- Before stacking or transporting flight cases, check the wheels and their fixation screws for wear or defects.
- Before stacking or transporting flight cases, check that the DLite rentals are securely locked into the base of the flight case.
- Before stacking or transporting flight cases, check the four lock handles on each flight case are in good working order and locked securely.
- When stacked, make sure the wheels of the upper flight case are precisely positioned in the stacking dishes of the flight case below.
- Stacked flight cases may not be moved. Before stacking, the lower flight case must already be in its final resting position before placing the second upon it.
- Never stack loaded flight cases in a truck or other transport medium, unless each flight case is rigidly strapped tight.
- In the event of a wheel breaking, flight cases must be rigidly strapped tight to prevent a stack collapsing.
- Use an appropriate forklift to raise flight cases and take the necessary precautions to avoid personnel injury.

## 2.5 DLite rental setup accessories

### Base stand setup accessories

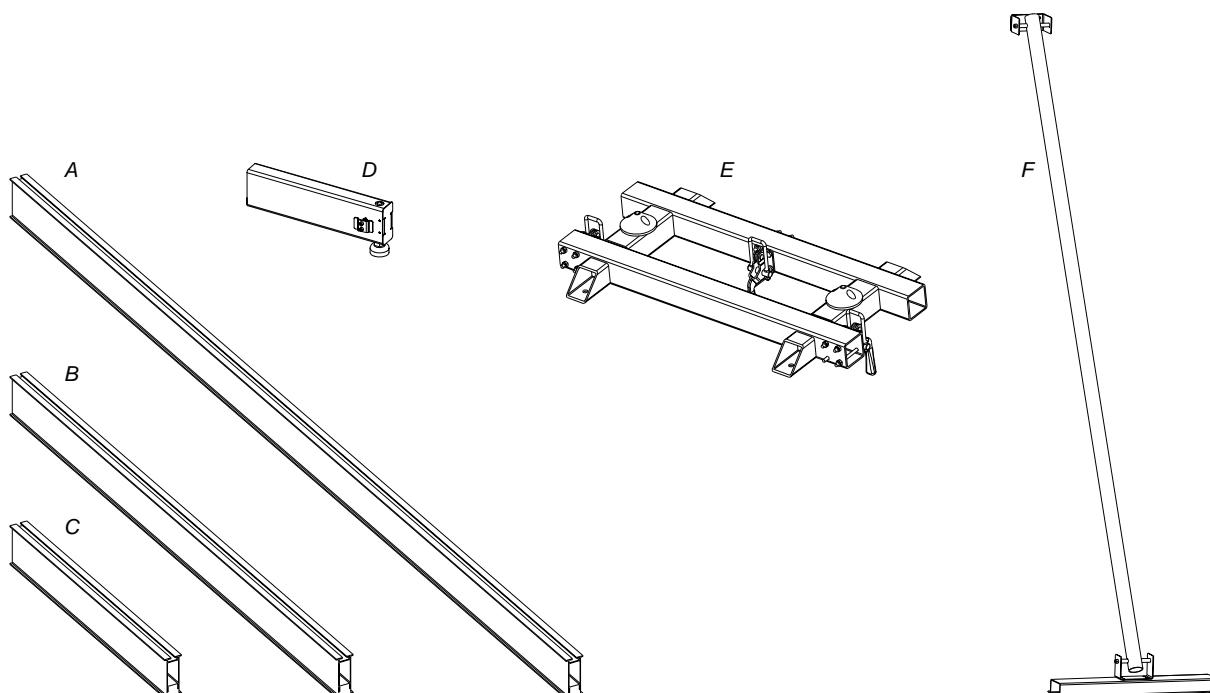


Image 2-9

- A Rental foot beam of 4 meter length.
- B Rental foot beam of 2,4 meter length.
- C Rental foot beam of 1,2 meter length.
- D Adjustable foot.
- E DLite rental foot.
- F DLite rental stacker (stacker tube and mounting accessories).

### Truss setup accessories

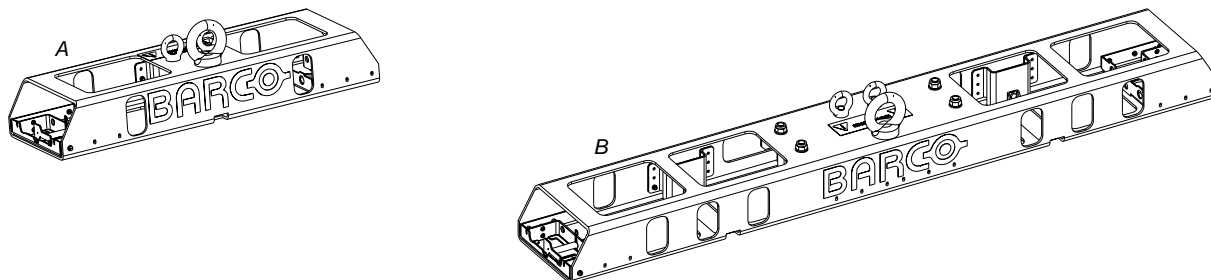


Image 2-10

- A DLite single truss beam.
- B DLite dual truss beam.

### Order info

Article No.	Description
R9851915	Two rental foot beams of 4 meter.
R9850176	Two rental foot beams of 2,4 meter.
R9850177	Two rental foot beams of 1,2 meter.
R9851470	Four adjustable feed. To level out the rental foot beams.
R9850510	DLite rental foot. For indoor or outdoor base stand rental displays.

Article No.	Description
R9850171	<ul style="list-style-type: none"> <li>Two rental foot beams of 4 meter.</li> <li>One DLite rental foot.</li> <li>DLite rental stacker. Inclusive mounting accessories.</li> </ul>
R9850178	<ul style="list-style-type: none"> <li>Two rental foot beams of 4 meter.</li> <li>One stacker tube of the DLite rental stacker. Exclusive mounting accessories.</li> </ul>
R9850179	Mounting accessories for the DLite rental stacker. Exclusive stacker tube.
R9850360	DLite single truss beam.
R9850361	DLite dual truss beam.

## 2.6 Cables for DLite displays

### 2.6.1 Power cables for DLite displays

#### Power cables

Depending on the size and configuration of the DLite display several sizes and types of power cables are required.

#### Order info

Article No.	Description	Image
R9850240	Power linking cable of 0,6 meter length with waterproof plugs (C20/C19).	image 2-11
R9850241	Power linking cable of 1,5 meter length with waterproof plugs (C20/C19).	image 2-12
R9850250	Power source cable of 3,5 meter length with waterproof plugs (C20/C19).	image 2-13
R9850260	Power source cable of 9 meter length with waterproof plugs (C20/C19).	image 2-14
R9850280	Package of five (5) dummy power plugs to seal up unused power output sockets of DLite tiles.	image 2-15



Image 2-11



Image 2-12



Image 2-13



Image 2-14



Image 2-15

### 2.6.2 Data cables for DLite displays

#### Data cables

Depending on the size and configuration of the DLite display several sizes and types of data cables are required.

#### Order info

Article No.	Description	Image
R9850210	Data linking cable of 1,5 meter length with waterproof MDR plugs.	image 2-16
R9850220	Data linking cable of 5 meter length with waterproof MDR plugs.	image 2-17
R9851216	Data linking cable of 5 meter length with DVI plug and waterproof MDR plug.	image 2-18
R9850270	Package of five (5) dummy data plugs to seal up unused data output sockets of DLite tiles.	image 2-19



Image 2-16



Image 2-17



Image 2-18



Image 2-19

## **2.7 Power boxes**

---

### **General**

Depending on the size of the DLite display system, the power system has to be adapted. Therefore several sizes of power boxes are available. For small and medium size DLite display systems the "Mono Phase Power Box" is used. For larger DLite display systems there is a range of "Custom Power Boxes". There is also a "Rental Power Box" available. Refer to the manual of the power box used in the application for more information.

## **2.8 Digitizer**

---

### **General**

The digitizer processes (image processing, conversion and conditioning) all source signals for digital distribution to every tile. The digitizer may be accessed directly or via the control software (e.g. XLite Toolset). This software is designed as a user interface to be used in conjunction with the digitizer and display, this can be used when connected to the digitizer through a serial RS232 connection. Refer to the manual of the digitizer for more information about the digitizer.

## **2.9 Fiberlink system**

---

### **General**

The data signal coming out of the digitizer is transported from the digitizer to the display by a high-speed data link. To send such a high density stream of data over long distances, a fiber optic cable is required. Barco offers a complete system: a transmitter, a cable and a receiver.

Barco offers two different fiberlink systems: one for shorter distances, based on a multi mode optical fiber, and one for longer distances, based on a single mode optical fiber. Refer to the manual of the fiberlink system for more information about the fiberlink system.

## **2.10 Control software**

---

### **General**

The control software is designed as a graphic user interface (GUI) and can be used to control and configure the digitizer as well as the Barco LED wall via a PC (e.g. XLite Toolset). Refer to the manual of the control software for more information about the control software.





## 3. SET UP A COMPLETE DLITE RENTAL DISPLAY SYSTEM

### Floor mount or hanging DLite rental display ?

The DLite rental structures can be used in a floor mount or in a hanging configuration.

### 3.1 Set up a floor mount DLite rental display

---

#### Set up process

1. Ensure you understand and follow all the safety guidelines, safety instructions and warnings mentioned in the chapter "Safety", page 3.
2. Installation of the foot beams and rental feet, See basic procedure "Installing DLite rental feet", page 30.
3. Installation of the adjustable feet. Ensure to support the foot beams every 50 centimeters. See "Installing the adjustable foot", page 32.
4. Build up the floor mounted DLite rental display, see procedure "Build up a floor mounted DLite rental display", page 37.  
**Warning:** The maximum height of a floor mounted DLite rental display is 9 DLite tiles high.
5. Installation of the power box(es), see manual of the used power box for more information about installing the power box.
6. Power cabling of the DLite rental display. See basic procedure "Power cables for DLite displays", page 17.
7. Installation of the digitizer(s) and, if used, the fiberlink system and/or the AEC. Follow the installation guidelines in the manuals of these products.
8. Data cabling of the DLite rental display. See basic procedure "Data cabling of a DLite rental display", page 45.
9. Activate and start up the DLite rental display with the control software.



**WARNING:** Foot beams of LED walls must always be firmly secured to the floor with fixings (preferred) or stabilized with ballast. This to prevent possible tip over and sliding of the LED wall due to wind-force or other external influences.

It is the responsibility of the installer to ensure the stability of the LED wall. Note that the stability of the LED wall depends on different parameters like: wind-force, weight of display, height of display, width of display, length of used foot beams and position of LED wall on foot beams (front - middle ?).

---

### 3.2 Set up a hanging DLite rental display

---

#### Set up process

1. Ensure you understand and follow all the safety guidelines, safety instructions and warnings mentioned in the chapter "Safety", page 3.
2. Build up the truss installation.  
**Warning:** Be sure that the truss installation will be able to support the complete load of the DLite rental display
3. Build up the hanging DLite rental display, see basic procedure "Build up a hanging DLite rental display with truss beams", page 38.  
**Warning:** The maximum height of a hanging DLite rental display is 15 DLite tiles high.
4. Installation of the power box(es), see manual of the used power box for more information about installing the power box.
5. Power cabling of the DLite rental display. See basic procedure "Power cables for DLite displays", page 17.
6. Installation of the digitizer(s) and, if used, the fiberlink system and/or the AEC. Follow the installation guidelines in the manuals of these products.
7. Data cabling of the DLite rental display. See basic procedure "Data cabling of a DLite rental display", page 45.
8. Activate and start up the DLite rental display with the control software.



## 4. BASIC SET UP PROCEDURES

### Overview

- Locating DLite rental structure parts
- Closing the safety lock mechanism
- Closing the lock clamp
- Opening the DLite flight case
- Closing the DLite flight case
- Removing DLite rental frames out of the flight case
- Placing DLite rental frames into the flight case
- Attaching DLite rental truss beam with a DLite rental structure
- Securing a DLite rental truss beam
- Installing DLite rental feet
- Installing the adjustable foot
- Installing a DLite stacker
- Attach a DLite rental structure on a DLite rental foot
- Attach and secure DLite rental structures on top of each other
- Attach and secure DLite rental structures next to each other
- Attach and secure a DLite rental structure into a DLite display
- Build up a floor mounted DLite rental display
- Build up a hanging DLite rental display with truss beams
- Wall Trim

### 4.1 Locating DLite rental structure parts

---

#### Parts location

You have to know where the connection and positioning points are of the DLite rental structure to join the structures together in a correct and safe manner. The sides of the rental structure are provided with positioning pins and holes. These pins and holes make sure that the rental structure is perfectly aligned with the neighboring structures.

For fastening and securing the DLite rental structure contains several lock clamps and two safety lock mechanisms. The safety lock mechanisms are located at the bottom corners of the rental structure. These mechanisms secure the lower rental structure with the above one. The two lock clamps in the upper corner of the DLite rental structure are equipped with a release lever. The other lock clamps not. The illustration below (image 4-1) indicates the different attachment points of a DLite rental structure.

## 4. Basic set up procedures

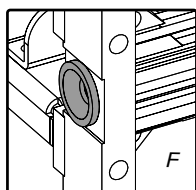
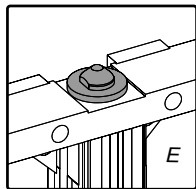
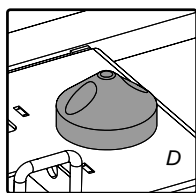
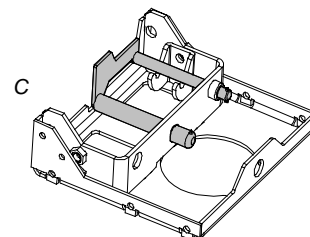
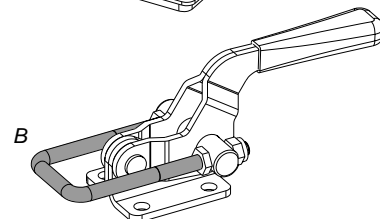
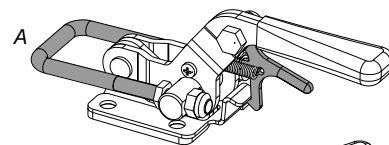
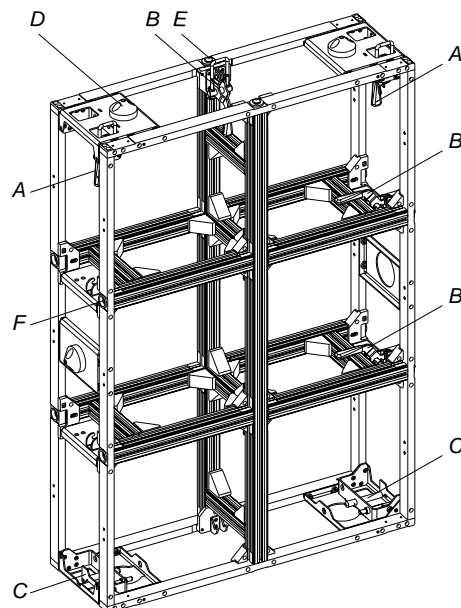


Image 4-1  
2 x 3 rental structure seen from the front without tiles.



- A Lock clamp with release lever.
- B Lock clamp.
- C Safety lock mechanism.
- D Positioning cone with safety slot.
- E Positioning pin.
- F Positioning hole.



The 2 x 2 DLite rental structure has in the middle one lock clamp less in comparison with the 2 x 3 rental structure. All following basic procedures are applicable on both rental structures. However, the illustration in this manual are mostly based on the 2 x 3 rental structure.

## 4.2 Closing the safety lock mechanism

### When to close the safety lock mechanism ?

When two DLite rental structures are placed on top of each other the first thing that needs to be done is to close the safety lock mechanism. After this mechanism is closed, the latch receiver of the opposing lock clamp is available for clamping. When a DLite rental structure is placed inside a flight case or on a DLite rental foot the safety lock mechanism has to be closed as well. The DLite rental truss beam is also provided with safety lock mechanisms. So, when joining a DLite rental truss beam with a DLite rental structure the safety lock mechanisms at the bottom of the truss beam has to be closed as well.



**WARNING:** Close all safety lock mechanisms of joining edges always.

### Necessary parts

Spring cotter.

### How to close the safety lock mechanism ?

1. Be sure all safety bolts are slid open before joining the DLite rental structure with another structure or flight case or truss beam.
2. Bring the DLite rental structure together with another structure or flight case or truss beam.
3. Slide the safety bolt through the cone with safety slot.
4. Insert a spring cotter through the safety bolt. (image 4-2)

**Caution:** It is critical to safety that a spring cotter is always inserted.

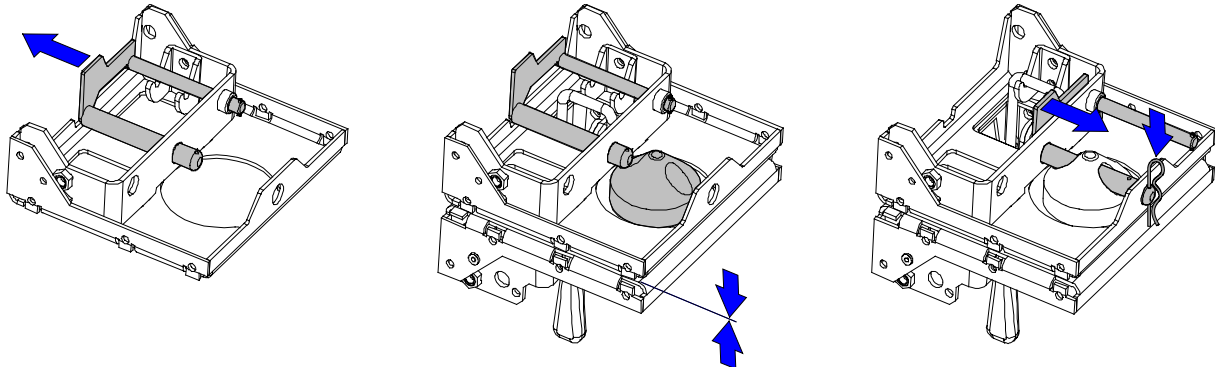


Image 4-2  
Closing of safety lock mechanism.

### 4.3 Closing the lock clamp

#### Two types of lock clamps

The DLite rental structure is provided with two types of lock clamps. The two lock clamps in the upper corners of the DLite rental structure are equipped with a release lever. The other lock clamps not.

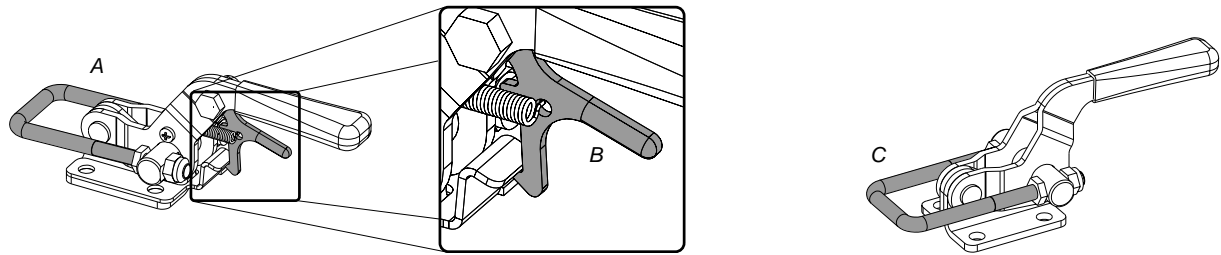


Image 4-3

- A Lock clamp with release lever.
- B Detail of release lever.
- C Lock clamp without release lever.

#### When to close the lock clamp ?

The two lock clamps, at the top corners of the rental structure, with release lever can only be closed if the opposing safety lock mechanisms are closed. These two clamps plus the clamp at the middle of the top must be closed to join the rental structure with the above rental structure or with the above rental truss beam. The lock clamps at the side of the DLite rental structure must be closed to join the rental structure with a neighboring structure. The DLite rental foot contains also three lock clamps to clamp the foot together with the above rental structure.



**WARNING:** Close all lock clamps of joining edges always.

#### How to close the lock clamp ?

1. Be sure that the DLite rental structure is correctly aligned with the neighboring structure or with the above DLite rental truss beam.
2. Is the opposing clasp of the lock clamp blocked by an open safety lock ?  
If yes, close the safety lock first before continue with the next step, see basic procedure "Closing the safety lock mechanism", page 24.
3. Place the clamping pull bar (A) around the opposing clasp (B) by moving the handle (C) of the clamp upwards. (image 4-4)
4. Pressed down the handle of the clamp to reach the locked position.  
**Note:** No gaps may appear between the adjoining edges. Due to frequently use of the lock clamps the lock force can be reduced which result in small gaps between the adjoining edges. Adjust the four M8 nuts on the clamping pull bar, using a 13 mm wrench, to increase the lock force.
5. Is this a lock clamp with a release lever ?  
If yes, ensure the hook of the release lever is clicked behind the clasp. (image 4-5)

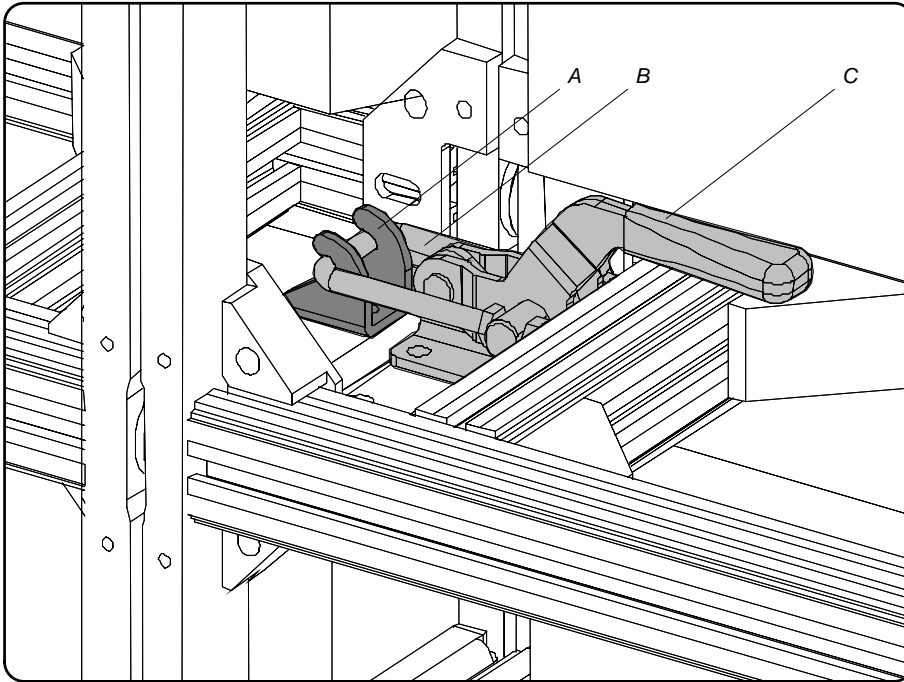


Image 4-4

- A Clasp.
- B Pull bar (hook).
- C Clamp handle.

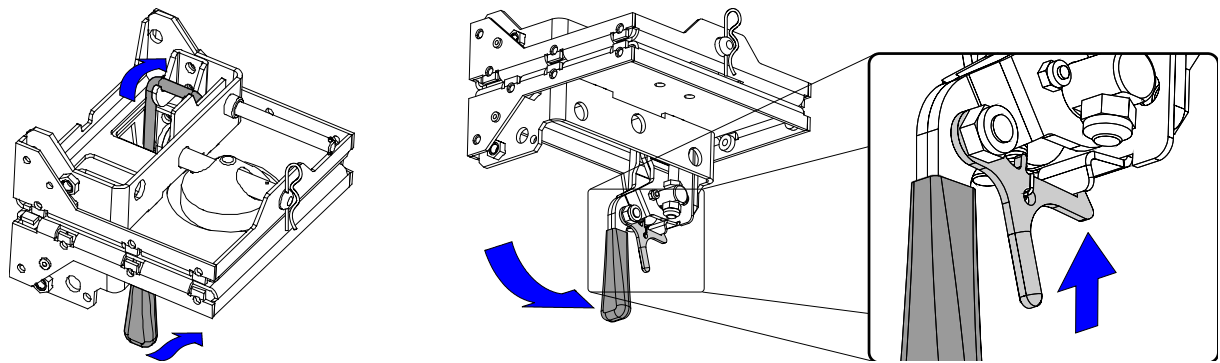


Image 4-5

Closed safety lock mechanism in combination with a lock clamp with release lever.

## 4.4 Opening the DLite flight case

---

### How to open the flight case ?

1. Open the four lock handles of the flight case.
2. Remove one of the two flight case covers by tilting it to 30° first and then lifting it up.
3. Remove the other flight case covers by tilting it to 30° first and then lifting it up. (image 4-6)

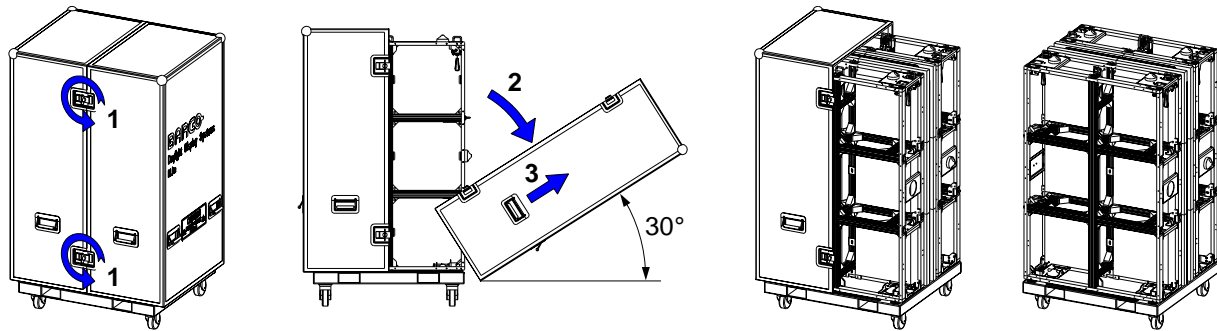


Image 4-6  
Opening the DLite rental flight case.

## 4.5 Closing the DLite flight case

### How to close the flight case ?

1. Be sure that all safety lock mechanisms are closed and secured with a spring cotter.
2. Approach one of the flight case cover sides under an angle of 30°.
3. Place the two hooks at the bottom of the flight case cover into the slots provided on the flight case trolley.
4. Raise the flight case cover in vertical position.
5. Repeat step 2, 3 and 4 with the other flight case cover side.
6. Close the four lock handles of the flight case. (image 4-7)

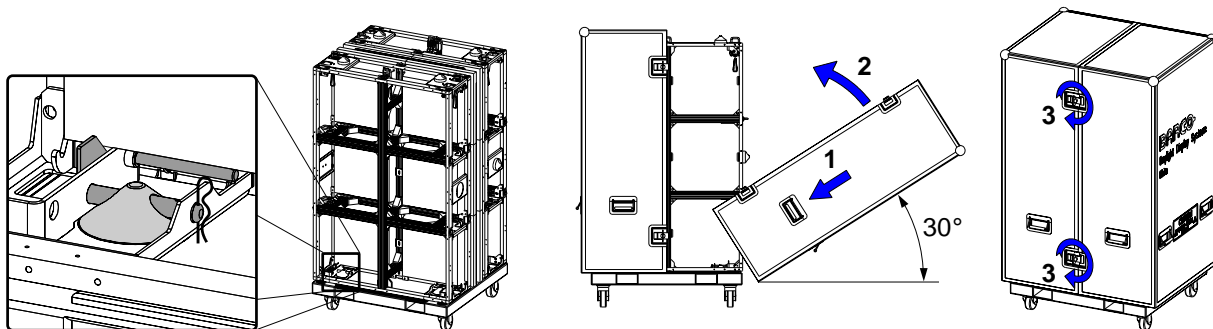


Image 4-7  
Closing the DLite rental flight case.

## 4.6 Removing DLite rental frames out of the flight case



**CAUTION:** Hoist must take load. Never put extra load on the flight case trolley.

### Necessary tools

- DLite single truss beam.
- Hoisting equipment.

### How to remove the DLite rental frames out of the flight case ?

1. Place all safety lock mechanisms in open position.
2. Attach a DLite rental truss beam on one of the DLite rental frames.
3. Lift up the truss beam with the attached rental frame.
4. Perform step 2 and 3 on the remaining rental frame. (image 4-8)

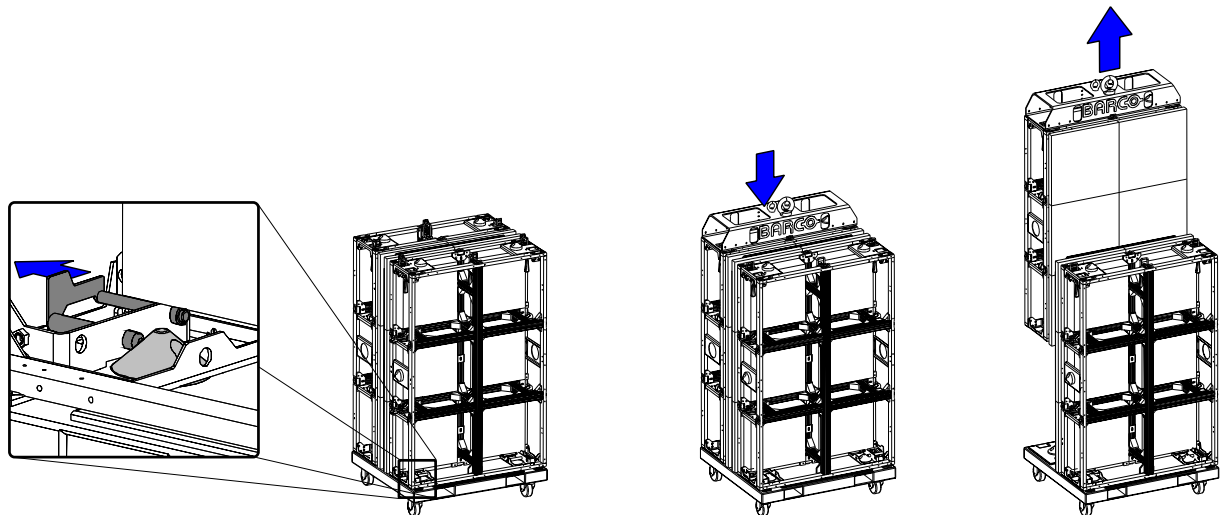


Image 4-8  
Removing DLite rental frames out of the flight case.

### 4.7 Placing DLite rental frames into the flight case

#### Necessary tools

- DLite single truss beam.
- Hoisting equipment.

#### How to place DLite rental frames into the flight case ?

1. Place an empty open flight case trolley on a level surface to ensure that the load will be evenly spread out among the four wheels.
2. Bring a DLite rental frame nearby the trolley.  
**Caution:** Be sure that the safety lock mechanisms of the rental frame is in open position.
3. Gently lower the rental frame into the flight case.  
**Caution:** LED's must face the centre of the flight case.
4. Repeat step 2 and 3 to fill the flight case completely.
5. Close all safety lock mechanisms and secure with a spring cotter. (image 4-9)

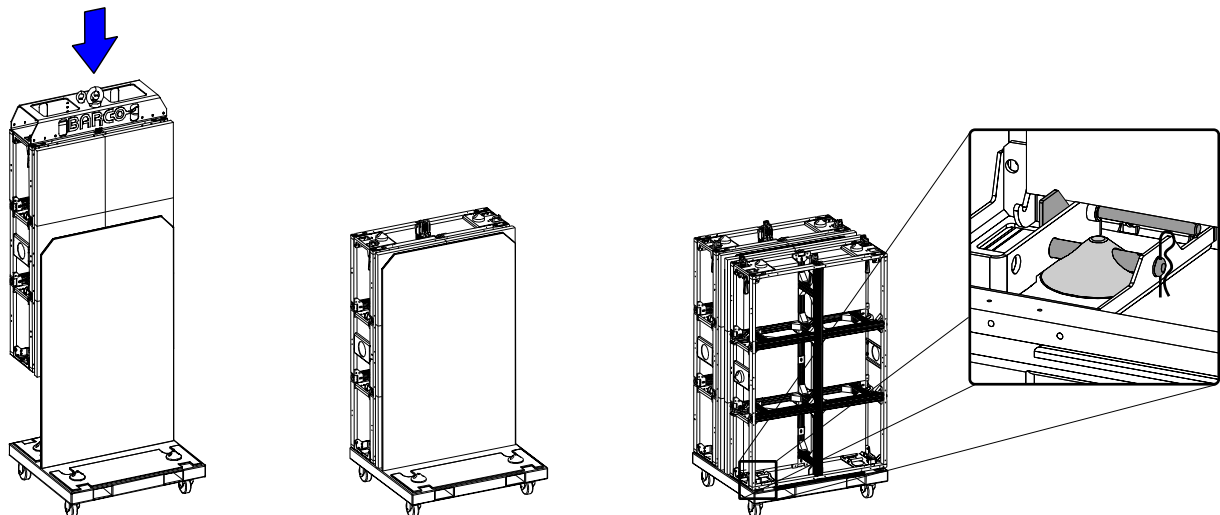


Image 4-9  
Placing DLite rental frames in the flight case.



## 4.8 Attaching DLite rental truss beam with a DLite rental structure

### DLite rental single and dual truss beam

One single truss beam can lift one column of rental structures. One dual truss beam can lift two columns of rental structures. The single truss beam has two (2) safety lock mechanisms and three (3) clasps for clamping. The dual truss beam is provided with four (4) safety lock mechanisms and six (6) clasps for clamping. Each DLite truss beam contains one (1) hoist eye bolt and two (2) safety eye bolts.

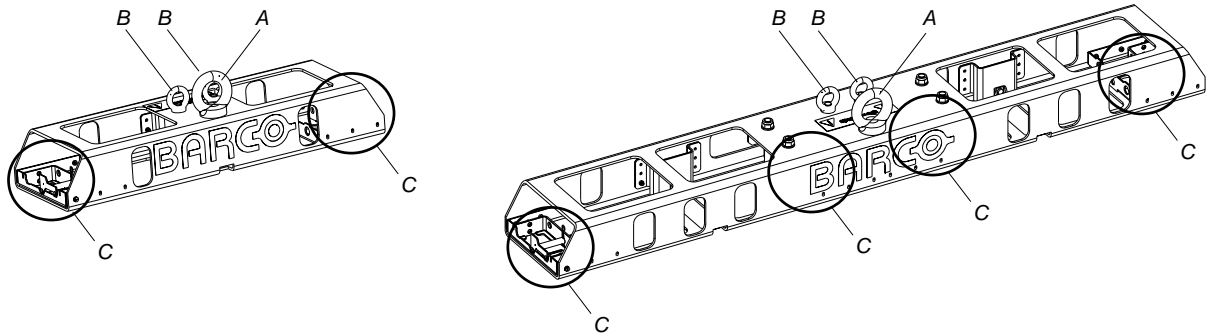


Image 4-10  
Parts location truss beam. Left single truss beam, right dual truss beam.

- A Hoist eye bolt.
- B Safety eye bolt.
- C Location safety lock mechanism.



**WARNING:** Maximum weight limit of the single truss beam is 700 kg, the dual truss beam can maximum lift 1400 kg. This weight correspond with a maximum display height of five (5) rental structures type 2 x 3 or seven (7) rental structures type 2 x 2. Do not put any additional weight on the truss beam and use the DLite rental truss beam only in conjunction with Barco DLite rental structures.



**WARNING:** One safety eye bolt has a maximum loading capacity of 700 kg. Secure each eye with an independent safety cable. Never loop a safety cable through both safety eyes of a truss beam, as this will dramatically reduce the load holding capacity of the safety eyes.

### How to attach a DLite rental truss beam with a DLite rental structure ?

1. Open all safety lock mechanisms of the truss beam (2 for single truss / 4 for dual truss beam).
2. Place the single truss beam gently on top of a single rental structure. The hoist eye (biggest eye bolt) must be at the front side (LED side), the two safety eye bolts at the rear.  
Or,  
place a dual truss beam gently on top of two joined rental frames. The hoist eye (biggest eye bolt) must be at the front side (LED side), the two safety eye bolts at the rear.
3. Close all safety lock mechanisms of the truss beam and secure with a spring cotter (2 for single truss / 4 for dual truss beam). See basic procedure "Closing the safety lock mechanism", page 24.
4. Close all upper lock clasps of the rental structure (3 for single truss / 6 for dual truss beam). See basic procedure "Closing the lock clamp", page 25. (image 4-11)

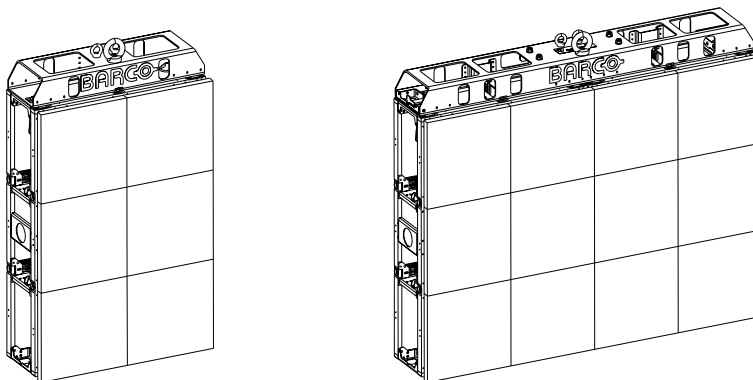


Image 4-11

## 4.9 Securing a DLite rental truss beam



**WARNING:** Always secure the truss beams of a hanging DLite rental display with the truss installation.



**WARNING:** The used steel cable or chain must have a work load limit (WLL) of at least of 4500 kg.

### Necessary parts

Safety steel cable or chain.

### How to secure a DLite rental truss beam ?

1. Lift up the DLite rental display to the desired height.
2. Place a safety steel cable or chain around the truss above the DLite rental display and through the safety eye bolt on the truss beam. One safety steel cable or chain per safety eye bolt. (image 4-12)

**Caution:** The angle between the rental truss beam and the safety steel cable or chain must be at least 45°.

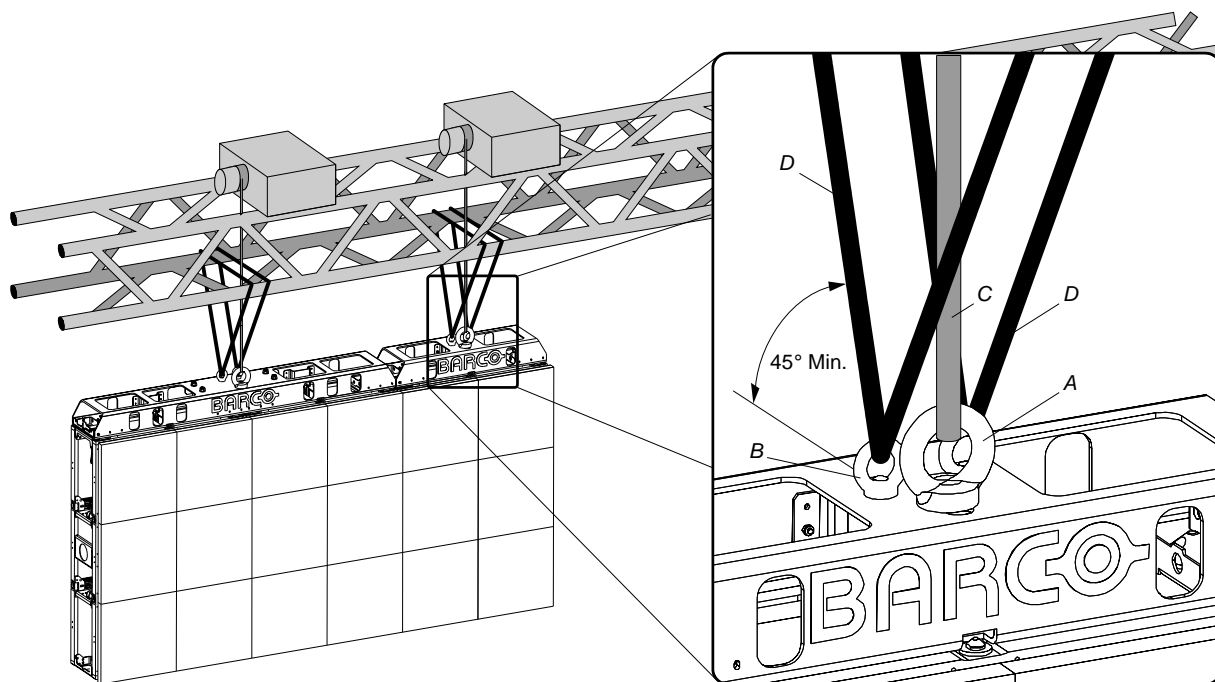


Image 4-12

- A Hoist eye bolt.
- B Safety eye bolt.
- C Hoist steel cable or chain connected with hoisting crane.
- D Safety steel cable or chain connected with truss installation.

## 4.10 Installing DLite rental feet

### What has to be done ?

The DLite rental foot has to be installed on the DLite foot beams. Two foot beams are required per rental foot and each DLite rental column requires one DLite rental foot. The length of the foot beams depends on the height and the indoor or outdoor use of the DLite display. Consult Barco for advise on professional rigging organizations.

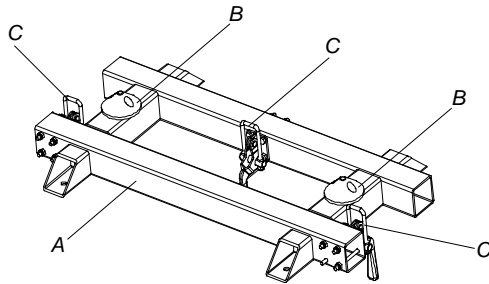


Image 4-13

- A Front side of rental foot (LED side).
- B Positioning cone.
- C Lock clamps.



**WARNING:** Assemble on flat level, solid, non collapsible and non-deforming ground. Firmly attach base to ground with fixings, or ballast, or both as required before mounting rental structures.

### Necessary tools

Wrench 19 mm.

### Necessary parts

Four M12 bolts per rental foot.

### How to install DLite rental feet ?

1. Place two foot beams parallel per DLite rental foot on a flat surface.
2. Attach the rental foot rails to the rental foot loosely, using four bolts.
3. Slide the rental foot with rails attached loosely into the slots on the foot beams. Ensure the front side of the foot will be at the same side as the LEDs. (image 4-14)
4. Fasten the four bolts when the rental foot is in the desired position.
5. Assemble such a rental foot assembly per DLite rental column.
6. Place all assemblies next to each other on its final position with a small gab (few millimeters) between the rental feet. Ensure the rental feet are correct and equally oriented. (image 4-15)
7. Firmly attach the foot assemblies to ground with fixings, or ballast, or both as required.

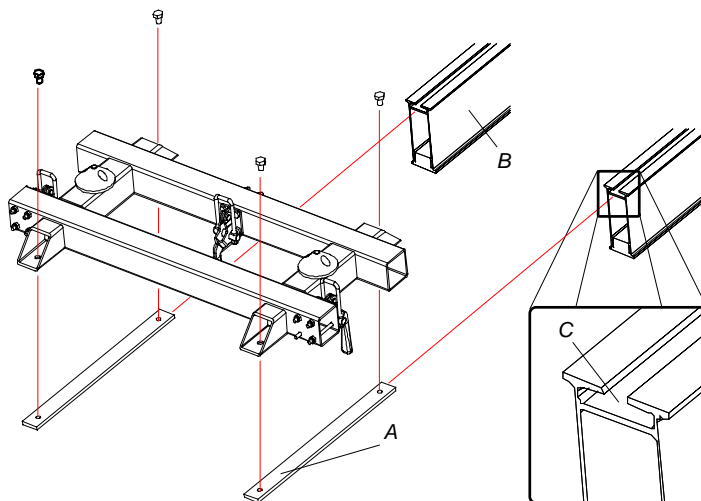
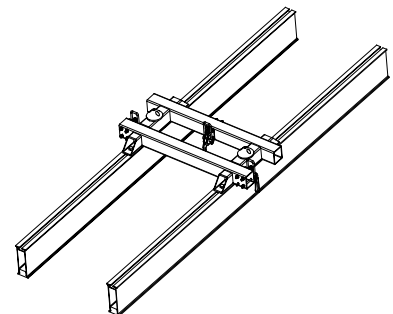


Image 4-14

- A Rental foot rail.
- B Foot beam.
- C Beam slot.



## 4. Basic set up procedures

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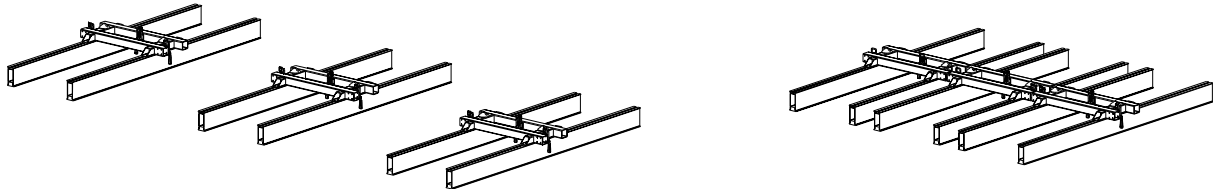


Image 4-15



**WARNING:** Foot beams of LED walls must always be firmly secured to the floor with fixings (preferred) or stabilized with ballast. This to prevent possible tip over and sliding of the LED wall due to wind-force or other external influences.

It is the responsibility of the installer to ensure the stability of the LED wall. Note that the stability of the LED wall depends on different parameters like: wind-force, weight of display, height of display, width of display, length of used foot beams and position of LED wall on foot beams (front - middle ?).

### 4.11 Installing the adjustable foot

---

#### Necessary tools

- Allen key size 4 mm
- Hexagon socket size 10 mm

#### How to install the adjustable foot ?

1. Ensure there are no obstacles to obstruct the smooth placement of the adjustable foot.
2. Slide an adjustable foot into the cross beam. (image 4-16)
3. Attach the adjustable foot to the cross beam using an Allen key of 4 mm.
4. Slide an adjustable foot into the other end of the cross beam.
5. Attach this adjustable foot also to the cross beam using an Allen key of 4 mm
6. Adjust the height of the adjustable feet in order to make the cross beam spirit level.
7. Place supporting blocks underneath the beam every 50 centimeters. This to prevent that the beam bend.

**Caution:** Never let the complete weight of the rental display rest on the adjustable foot.

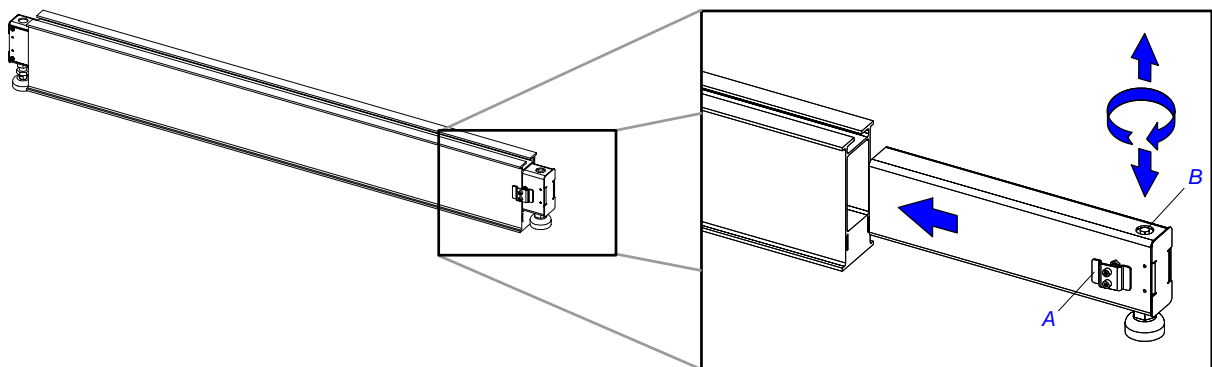


Image 4-16

- A Attachment with cross beam.  
B Height adjustment.

### 4.12 Installing a DLite stacker

---

#### DLite stacker

A DLite stacker consist of a stacker profile (long tube) and some attachment parts. A DLite stacker profile is placed in the middle of every column of rental structures.



**WARNING:** A DLite stacker must be installed on every column of rental structures of displays higher than six (6) tiles. A DLite stacker must be installed before continue to build the next row of rental structures.

### Necessary tools

- Wrench 17 mm.
- Wrench 19 mm.

### Necessary parts

- DLite stacker profile.
- DLite stacker head bracket.
- DLite stacker foot.
- Two DLite stacker support brackets.
- Two DLite stacker pins.
- Two spring cotters.

### How to install a DLite stacker profile ?

1. Mount a stacker head bracket (A) with a stacker support bracket (B) at the rear of the rental structure. The stacker head must be placed in the middle of the rental structure, at the height of the sixth tile. Use four M10 bolts and four M10 nuts and fasten with a 17 mm wrench. (image 4-17)
2. Mount an other stacker support bracket (B) on top of the stacker foot (C). Use four M10 bolts and four M10 nuts and fasten with a 17 mm wrench. (image 4-18)
3. Slide a stacker foot rail (D) in the slot of each rental beam.
4. Place the stacker foot on top of the rental beams, opposite the stacker foot rail, and attach the foot loosely with the rails. Use four M12 bolts.

**Note:** Do not fasten the rental foot yet.

5. Place a stacker profile (E) between the two installed support brackets. Use therefore two stacker mounting pins (F) and secure each pin with a spring cotter. (image 4-19)

**Caution:** Always secure the stacker mounting pins with a spring cotter.

**Tip:** Because the stacker foot is loosely installed it is possible to slide the foot to or from the wall to line up the holes in the stacker profile with the holes in the stacker foot. This will make it easier to insert the stacker mounting pin.

6. Fasten the stacker foot. Use therefore a 19 mm wrench.

**Caution:** The four bolts to attach the stacker foot with the foot beams must be fasten with a torque of approximately 12 Nm per bolt.

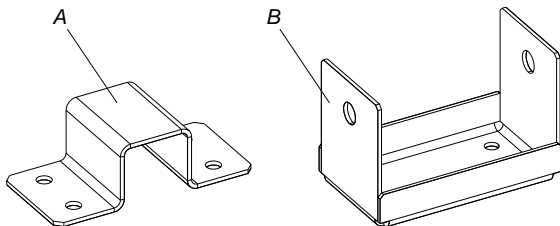
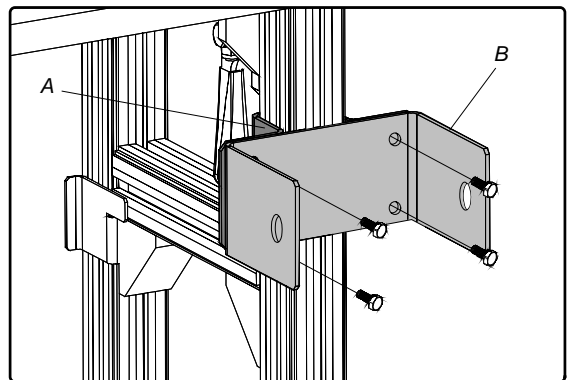


Image 4-17

- A Stacker head bracket.  
B Stacker support bracket.



#### 4. Basic set up procedures

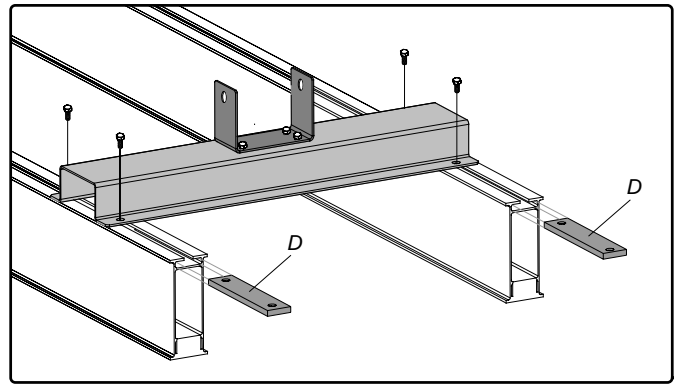
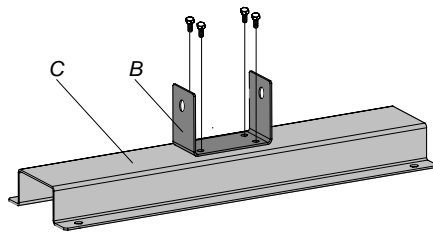


Image 4-18

- B Stacker support bracket.
- C Stacker foot.
- D Stacker foot rail.

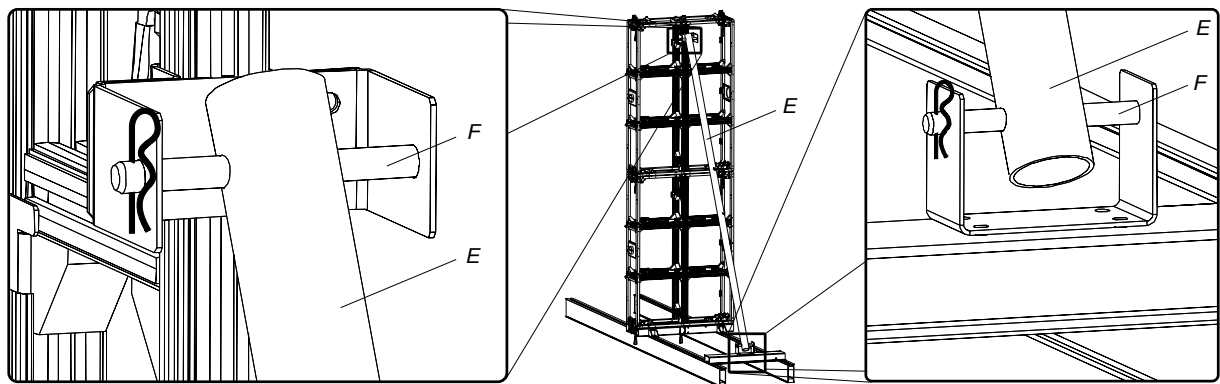


Image 4-19

- E Stacker profile.
- F Stacker mounting pin.

#### 4.13 Attach a DLite rental structure on a DLite rental foot

##### DLite rental foot

The DLite rental foot is provided with three lock clamps. Two in the corners at the front and one in the middle at the rear. The DLite rental foot is also equipped with two positioning cones for easy and correct positioning of the rental frames.

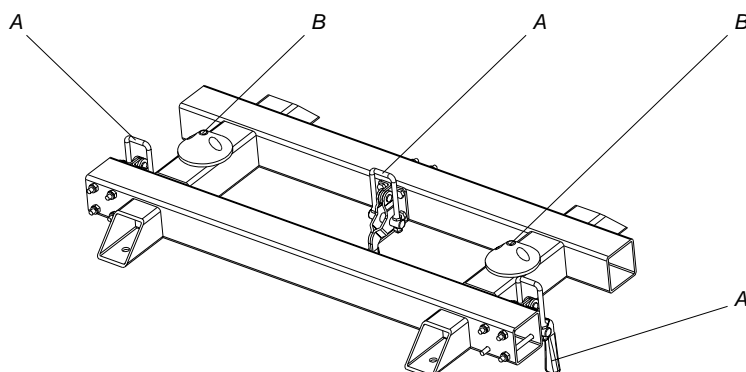


Image 4-20

- A Lock clamp.
- B Positioning cone.

### How to attach a DLite rental structure on a DLite rental foot ?

1. Ensure that the DLite rental foot is installed well to support the DLite rental structures.
2. Ensure that both safety lock mechanisms at the bottom of the rental structures are in open position.
3. Place the DLite rental structure on top of a DLite rental foot. Ensure that the rental structure and the rental foot are equally oriented. (image 4-21)  
**Tip:** Use a DLite truss beam to lift up the rental structure.
4. Close the two safety lock mechanisms at the bottom of the rental structure and secure with a spring cotter, see basic procedure "Closing the safety lock mechanism", page 24.
5. Fasten the rentals structure with the rental foot by closing the three lock clamps of the rental foot, see basic procedure "Closing the lock clamp", page 25.

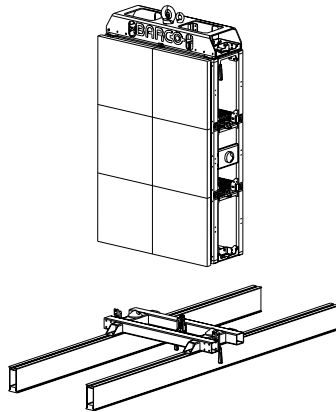
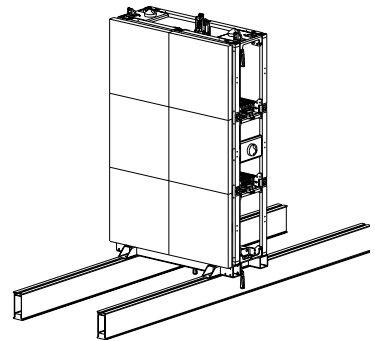
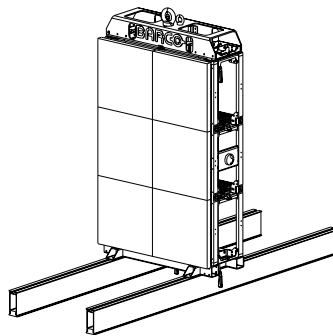


Image 4-21



## 4.14 Attach and secure DLite rental structures on top of each other

### How to attach and secure DLite rental structures on top of each other ?

1. Ensure that both safety lock mechanisms at the bottom of the DLite rental structures are in open position.
2. Place the DLite rental structure, with open safety lock, on top of another rental structure. (image 4-22)
3. Close the two safety lock mechanisms at the bottom of the upper rental structure and secure with a spring cotter, see basic procedure "Closing the safety lock mechanism", page 24.
4. Fasten the rentals structures together by closing the three lock clamps at the top of the lower rental structure, see basic procedure "Closing the lock clamp", page 25.

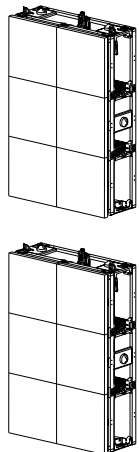
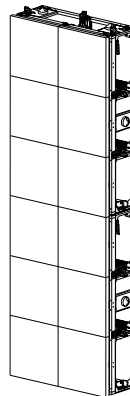


Image 4-22



## 4.15 Attach and secure DLite rental structures next to each other

### How to attach and secure DLite rental structures next to each other ?

1. Place two DLite rental structure next to each other. (image 4-23)
2. Fasten the rental structures together by closing the lock clamp(s) on the adjoining edge, see basic procedure "Closing the lock clamp", page 25.



Image 4-23

## 4.16 Attach and secure a DLite rental structure into a DLite display

### Necessary tools

- Hoisting crane.
- DLite single truss beam.

### How to attach and secure a DLite rental structure into a DLite display ?

1. Ensure that both safety lock mechanisms at the bottom of the DLite rental structure are in open position.
2. Attach a DLite single truss on top of a DLite rental structure, see basic procedure "Attaching DLite rental truss beam with a DLite rental structure", page 29.
3. Lift up the DLite rental structure and place it gently in its final position in the DLite display. (image 4-24)  
**Caution:** The final approach of the DLite rental structure to the DLite display must be approximately 45°.
4. Secure the rental structure by closing the two safety lock mechanisms at the bottom of the rental structure, see basic procedure "Closing the safety lock mechanism", page 24.  
**Caution:** Always secure the safety lock mechanism with a spring cotter.
5. Fasten the rental structure by closing all lock clamps on the adjoining edges of the neighboring structures. Three lock clamps at the bottom and two at the side. See basic procedure "Closing the lock clamp", page 25.  
**Caution:** Be sure that the hook of the release lever of the lock clamp, at the bottom corners, is clicked behind the clasp.
6. Remove the DLite single truss beam from the rental structure.

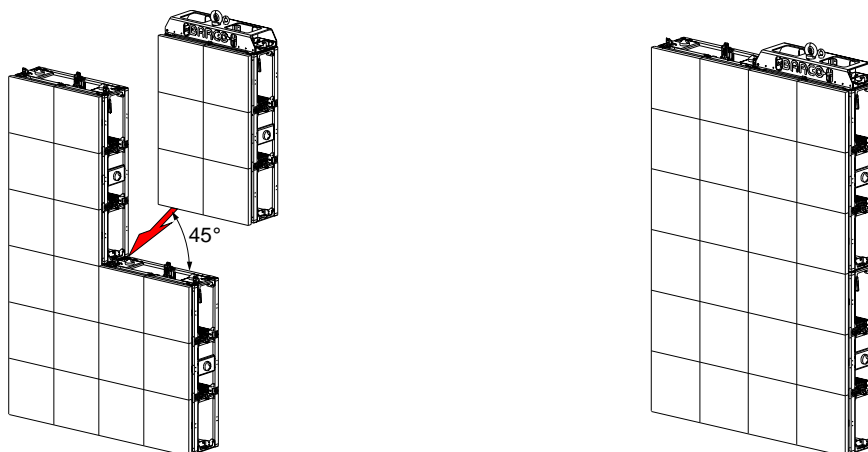


Image 4-24



## 4.17 Build up a floor mounted DLite rental display

### Floor mounted DLite display

A floor mounted DLite rental display is build upon DLite rental feet. The DLite rental structures are placed in succession from left to right (or right to left) and row by row.



**WARNING:** The rental beams on which the DLite rental feet are mounted must be firmly attach to the ground with fixings, or ballast, or both as necessary before mounting the DLite rental structures. This to prevent possible tipping.



**WARNING:** The maximum height of a base stand DLite display is 9 DLite tiles high (or three 2 x 3 DLite rental structures).



**WARNING:** An outdoor DLite rental displays higher than 6 DLite tiles (or two 2 x 3 DLite rental structures) require a DLite stacker on every column of rental structures.

### Necessary tools

- Hoisting equipment.
- DLite single truss beam.

### How to build up a floor mounted DLite rental display ?

1. Ensure you understand and follow all the safety guidelines, safety instructions and warnings mentioned in the chapter "Safety", page 3.
2. Install the first row of DLite rental structures in succession from left to right (or right to left). Ensure each rental structure is attached and secured correctly with each other and with the DLite rental feet. See basic procedures "Attach a DLite rental structure on a DLite rental foot", page 34 and "Attach and secure DLite rental structures next to each other", page 36. (image 4-25)  
**Note:** The DLite rental structure final approach must be 45° for flush fitting.
3. Install the second row of DLite rental structures. Ensure each rental structure is attached and secured correctly with the rental structures below and beside. See basic procedure "Attach and secure a DLite rental structure into a DLite display", page 36. (image 4-26)
4. Does this DLite rental display stands outdoor ?  
If yes, install a stacker system behind every column of DLite rental structures. See basic procedure "Installing a DLite stacker", page 32, for correct and secure installation.
5. Install the third (last) row of DLite rental structures. Ensure each rental structure is attached and secured correctly with the rental structures below and beside. See basic procedure "Attach and secure a DLite rental structure into a DLite display", page 36. (image 4-27)

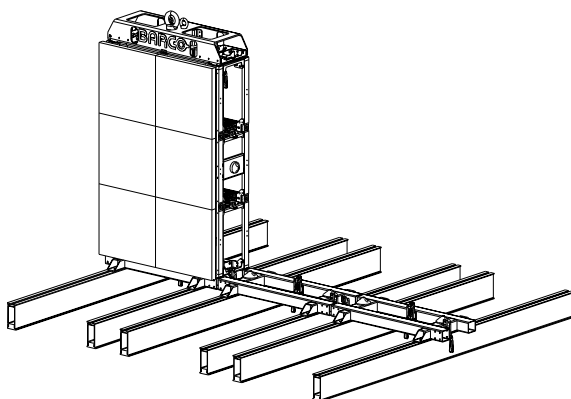
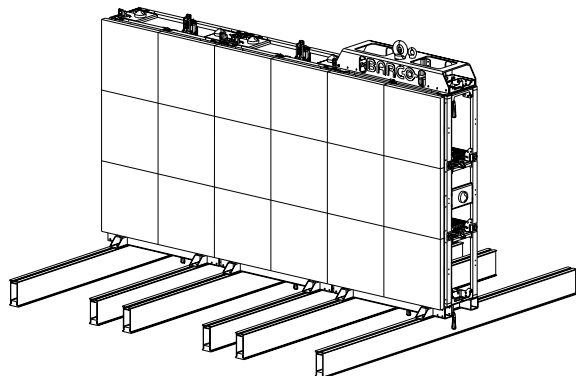


Image 4-25



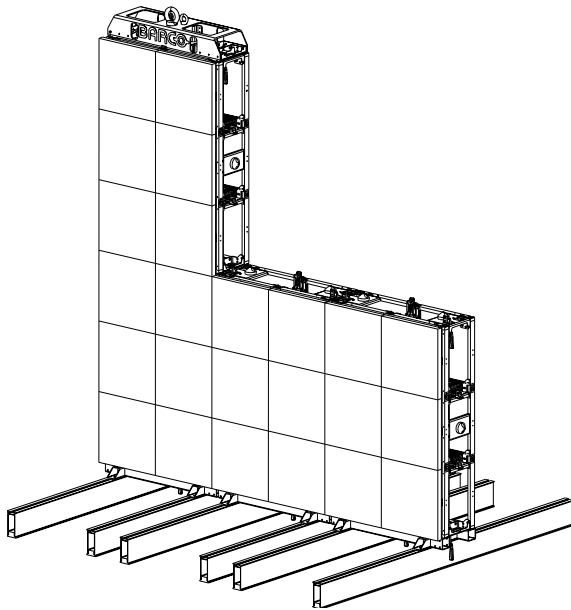


Image 4-26

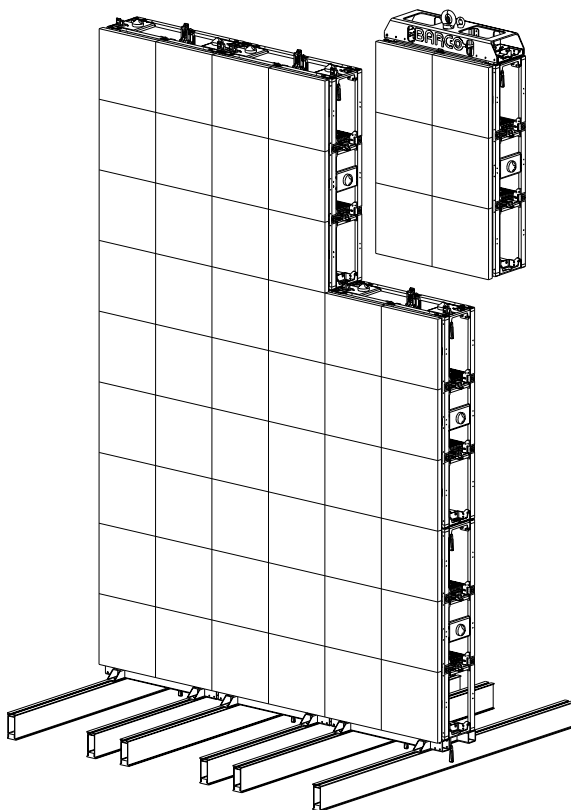
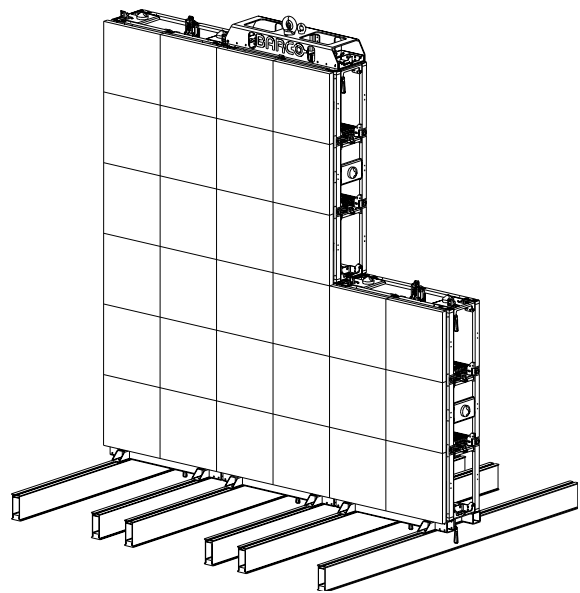
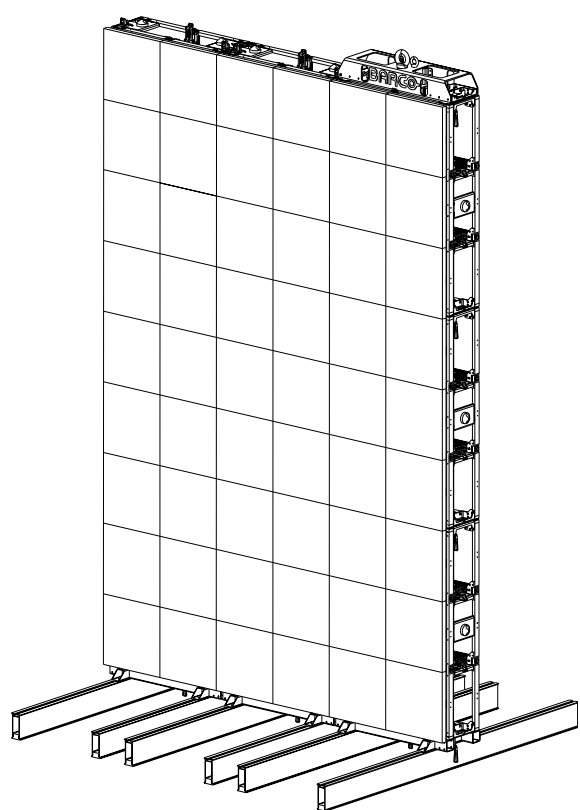


Image 4-27



### 4.18 Build up a hanging DLite rental display with truss beams

---

#### Hanging DLite rental display

A hanging DLite rental display is build up row by row. Each row is build by placing the DLite rental flight cases next to each other and fasten the DLite rental structures side by side. The complete row is then lift up directly out of the flight cases, using a hoist suspended from a truss.



**WARNING:** Ensure that the truss installation is able to support the complete load of the DLite rental display before attaching DLite rental structures.



**WARNING:** The maximum height of a hanging DLite display is 15 DLite tiles high (or five 2 x 3 DLite rental structures).

### Necessary tools

Truss with hoisting equipment.

### Necessary parts

DLite truss beams.

### How to build up a hanging DLite rental display with truss beams ?

1. Ensure you understand and follow all the safety guidelines, safety instructions and warnings mentioned in the chapter "Safety", page 3.
2. Place at much flight cases, without cover, next to each other as there will be DLite rental columns in the display.
3. Construct one DLite row by fasten the DLite rental structures inside the flight cases, side by side with each other. See basic procedure "Attach and secure DLite rental structures next to each other", page 36. (image 4-28)
4. Unlock the DLite row from the flight cases. See "Removing DLite rental frames out of the flight case", page 27.
5. Place truss beams (single or dual) over the complete DLite row. Make sure the truss beams are secured and attached correctly with the DLite rental structures. See basic procedure "Attaching DLite rental truss beam with a DLite rental structure", page 29.
6. Lift up the complete DLite row out of the flight cases, using the hoisting equipment installed on the truss. (image 4-29)
7. Place a next constructed and unlocked DLite row just underneath. (image 4-30)  
**Caution:** Hoist must take the complete load. Never put extra load on a flight case trolley. Keep approximately 2 mm between the undermost DLite rentals hanging on the hoist and the next row of DLite rentals standing in the flight cases.
8. Attach the next row of DLite structures, see basic procedure "Attach and secure DLite rental structures on top of each other", page 35.
9. Lift up all attached and secured DLite rows. (image 4-31)
10. Repeat step 7 and following until the complete DLite rental display is constructed.
11. Secure the suspended DLite rental display, see basic procedure "Securing a DLite rental truss beam", page 30.

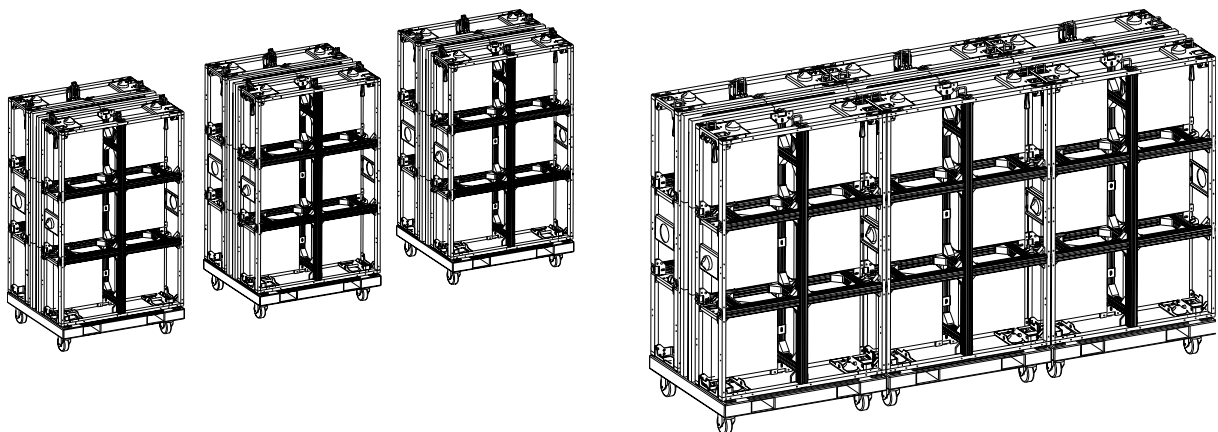


Image 4-28

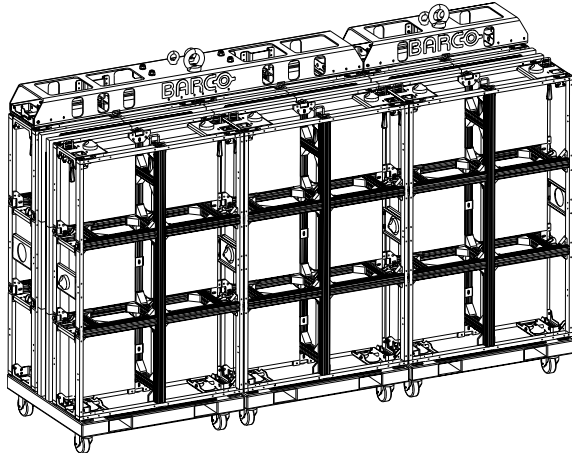


Image 4-29

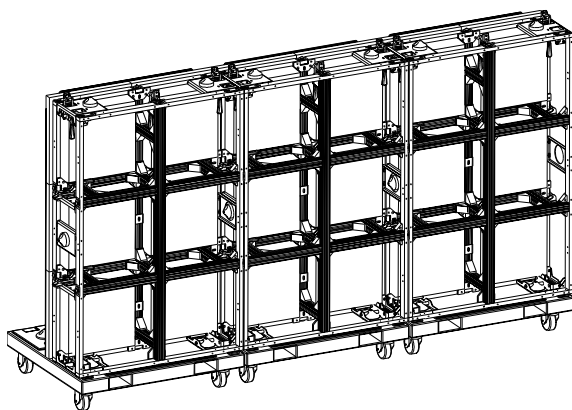
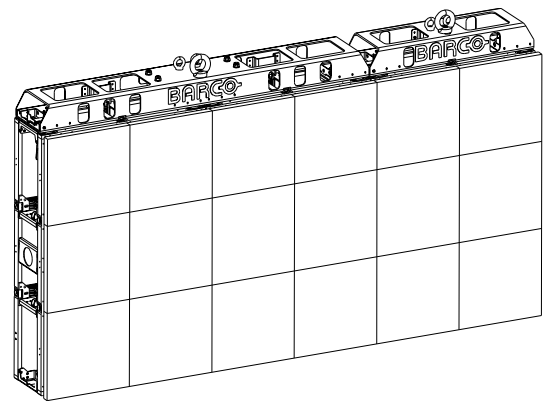
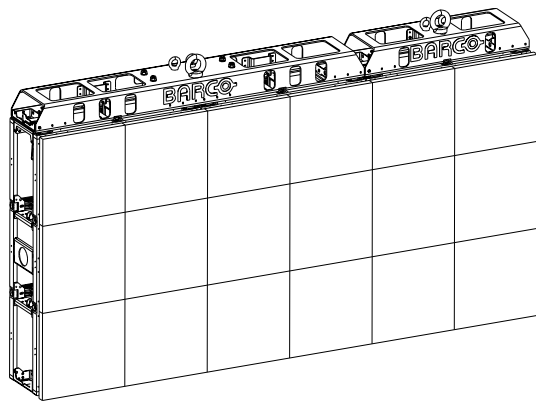
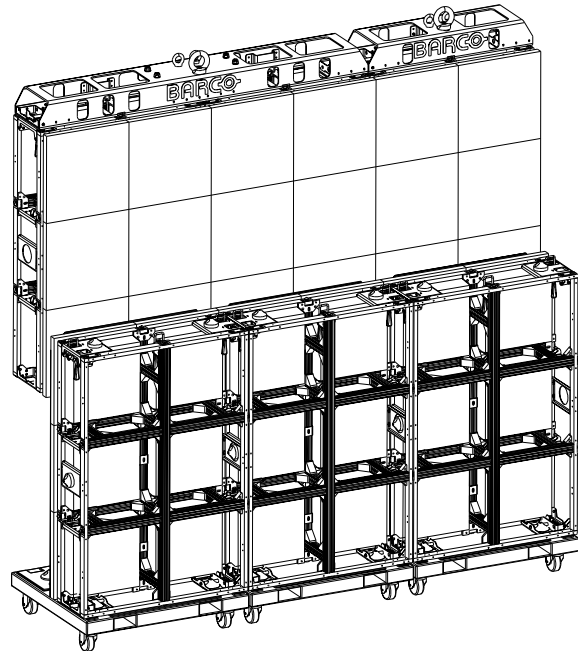
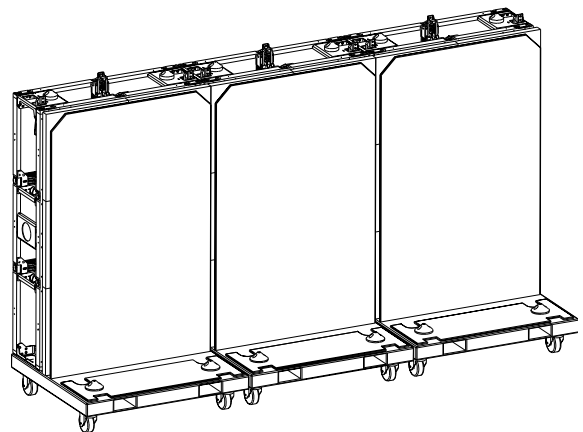


Image 4-30



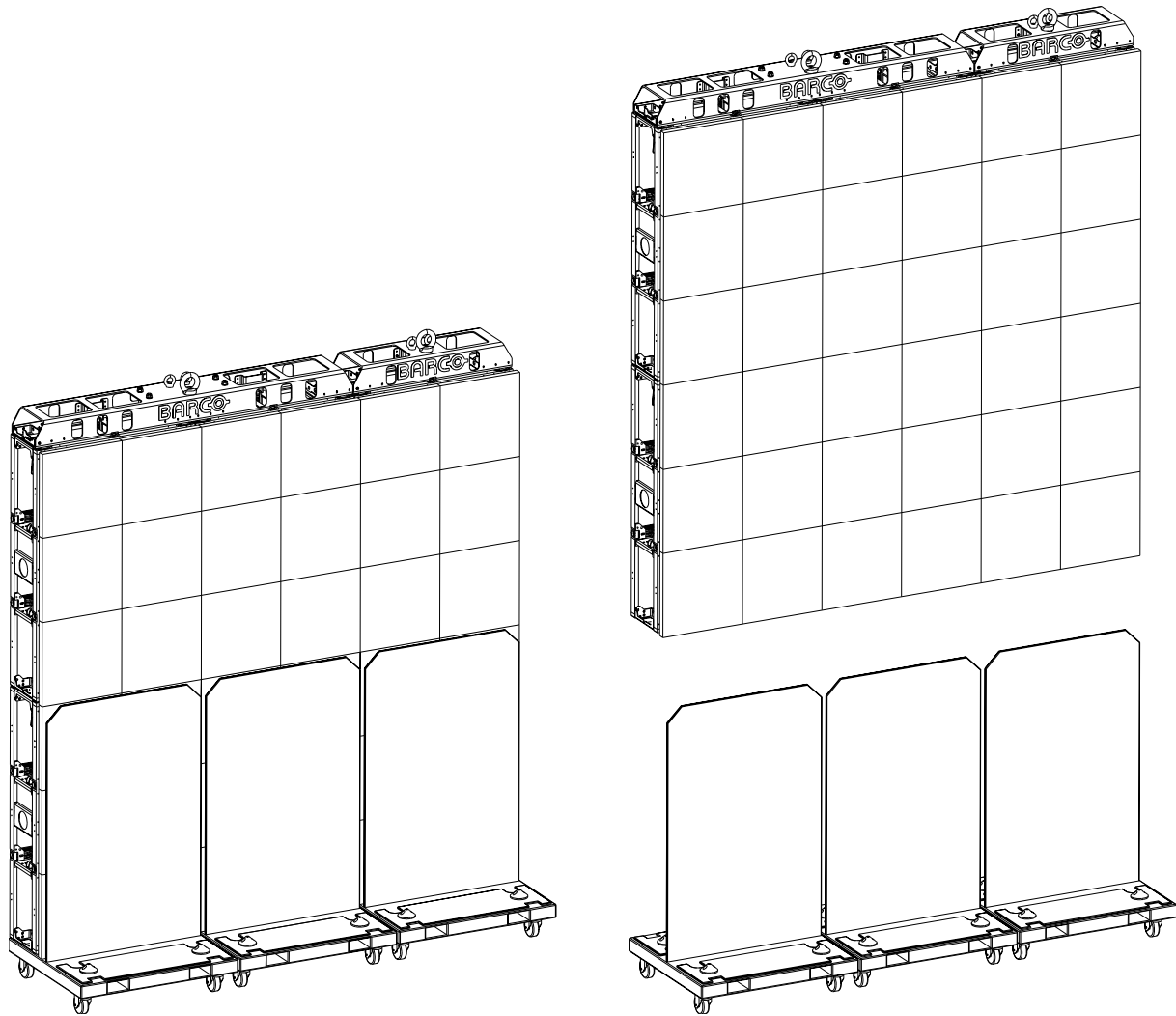


Image 4-31



It is possible to build up the DLite rental display in two or more columns first and then join the display columns together.

## 4.19 Wall Trim

### What has to be done?

The extremities of the wall may be framed using Trimming parts.

### Necessary tools

Wrench 13 mm.

### Trim mounting

1. Trims can easily be attached to the display wall by just bolting to the Assembly Edges.
2. They can also be bolted to each other. In this way you can also fasten the trim in the top corners of the display. (image 4-32)

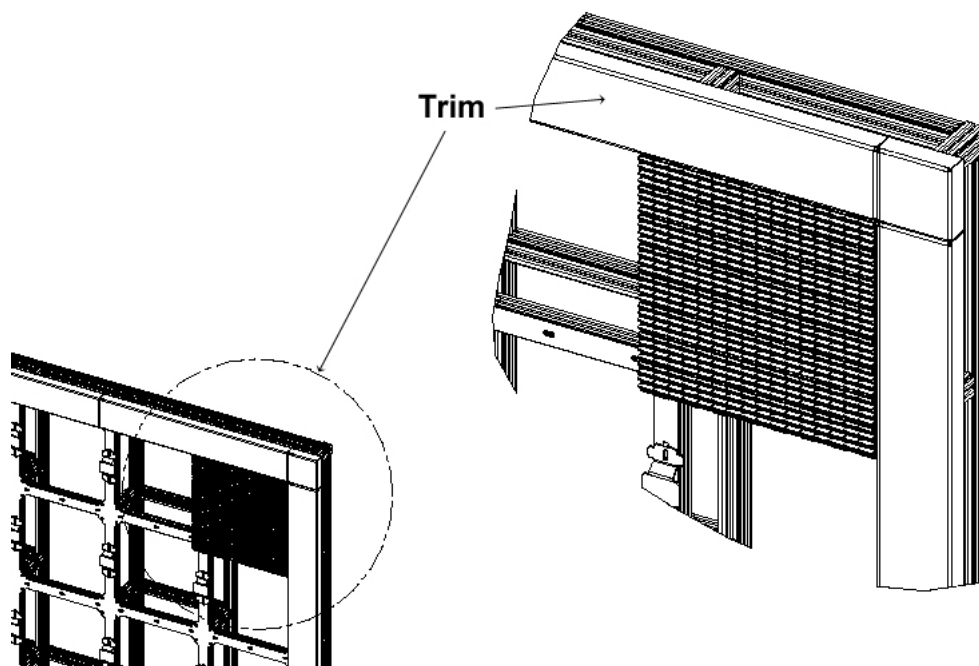


Image 4-32  
Wall Trim

## 5. CABLING OF A DLITE RENTAL DISPLAY

### Overview

- DLite tile connectivity
- Power cabling of a DLite rental display
- Data cabling of a DLite rental display

### 5.1 DLite tile connectivity

#### Connectivity

There are four connection ports on the back of each DLite tile. Two power ports and two data ports. All ports are waterproof and located on the 'Connection module'.

The data ports consist of two waterproof MDR connectors at the right side of the connection module. The data is coming in on the lower right MDR connector of the connection module. The upper right MDR connector is used to loop the data through.

The power ports consist in one waterproof C19 connector in the lower left corner and one waterproof C20 connector in the upper left corner of the connection module, respectively used for power input and power output.

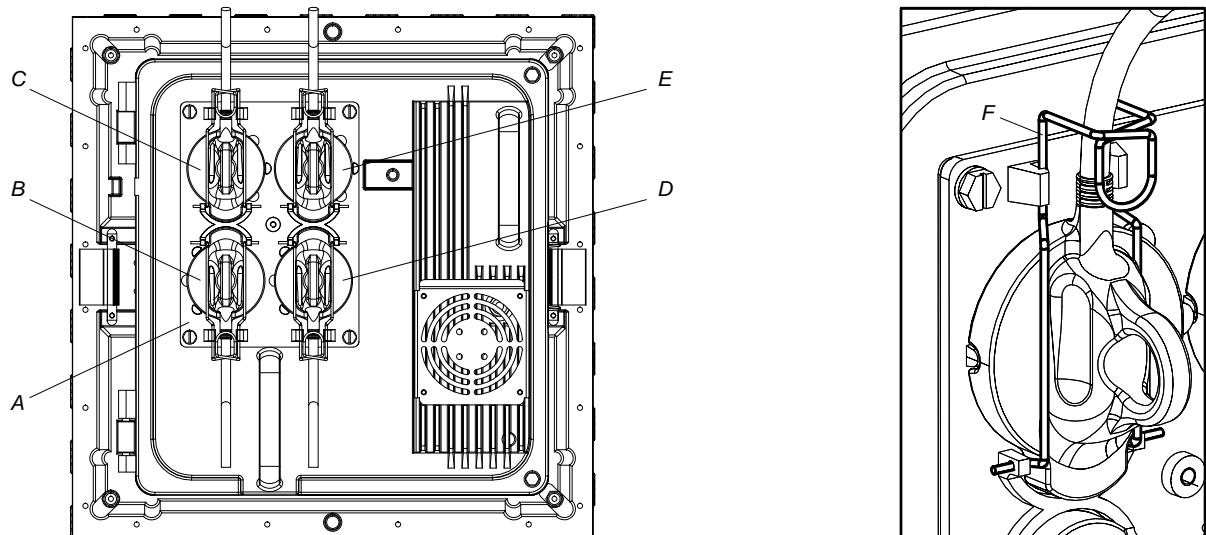


Image 5-1

- A Connection module.
- B Power input port.
- C Power output port.
- D Data input port.
- E Data output port.
- F Plug holder clamp.



**WARNING:** The DLite input/output ports can only be used in conjunction with Barco's outdoor cables for LED-walls. Do not use any other cables then those specified.



**WARNING:** Dummy plugs must be placed on unused connection ports of the connection module and all plug holder clamps must be locked firmly.

### 5.2 Power cabling of a DLite rental display

#### Power cabling

The DLite rental structures are pre-cabled with 4 short (0,6 meter) power linking cables, one long (1,5 meter) power linking cable and one power source cable (4,5 meter). One tile is provided with a dummy power plug on the power output socket. The maximum

## 5. Cabling of a DLite rental display

amount of DLite tiles connected with the same power source cable is limited to 6 tiles. So, the entrance of the power source cable may not be plugged into a power output port of a previous DLite tile but directly connected power upwards with the power box.

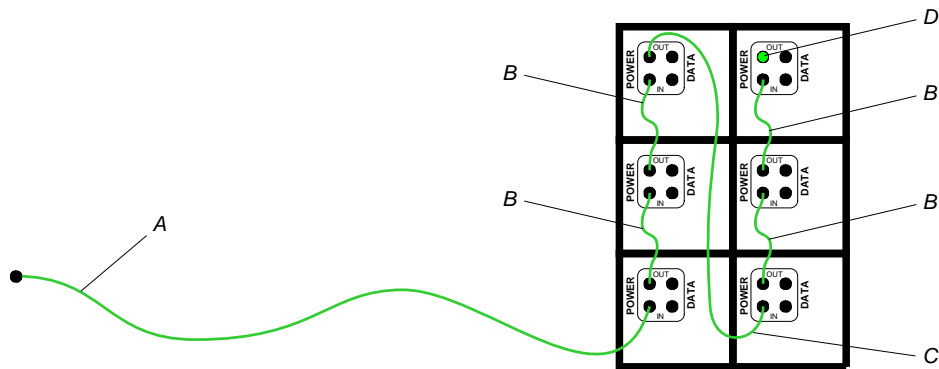


Image 5-2  
Power cabling diagram of an individual DLite rental structure.

- A Power source cable of 4,5 meter (connected with power box).
- B Short power linking cable (0,6 meter).
- C Long power linking cable (1,5 meter).
- D Dummy power plug on power output socket.

### Power boxes

Barco provides several types of power boxes. Depending on the size of the DLite rental display you can choose to use the mono phase power box or the custom made power box or the rental power box. The type of power box, doesn't influences the power cabling of the DLite rental display. See installation manual of the concerned power box for installation instructions.



**WARNING:** To protect against risk of fire by overloading of power cables, the amount of DLite tiles per power source cable is limited. Never connect more than six (6) DLite tiles with a power source cable.



**WARNING:** Be sure that the connector sockets are provided with sealing rings before plugging in the power and data cables. Use the correct sealing ring for the corresponding socket. Black colored ring (B361243, left image) for power, red (B361595, right image) for data. Replace damaged sealing rings immediately.



The procedure below includes how to realize the power cabling of an individual DLite rental structure. This cabling is normally already done in factory.

### How to realize the power cabling of a DLite rental display ?

1. Install the power box nearby the DLite rental display. Ensure the power box provides as much power circuits as required to energize the display in a safe manner. If necessary, instal several power boxes. See manual of the used power box for installation instructions.
2. Place a power source cable between the power source and the lower left tile of a DLite rental structure (seen from the rear).  
**Note:** Depending on the type of used power box, a multi power cable in combination with a spider connector is inserted between the power box and the power source cable leading to the DLite tile. See manual of the used power box to realize the cabling between power box and DLite display.
3. Place a short power linking cable between the lower left tile and the middle left tile of the DLite rental structure (seen from the rear).
4. Place a short power linking cable between the middle left tile and the upper left tile of the DLite rental structure (seen from the rear).



5. Place a long power linking cable between the upper left tile and the lower right tile of the DLite rental structure (seen from the rear).
6. Place a short power linking cable between the lower right tile and the middle right tile of the DLite rental structure (seen from the rear).
7. Place a short power linking cable between the middle left tile and the upper left tile of the DLite rental structure (seen from the rear).
8. Place a dummy power plug on the power output socket of the upper right tile of the DLite rental structure (seen from the rear).
9. Make sure that all plug holder clamps are locked firmly.
10. Repeat step 2 and following until all DLite rental structures are provided with power.

### Example of power cabling of a DLite rental display

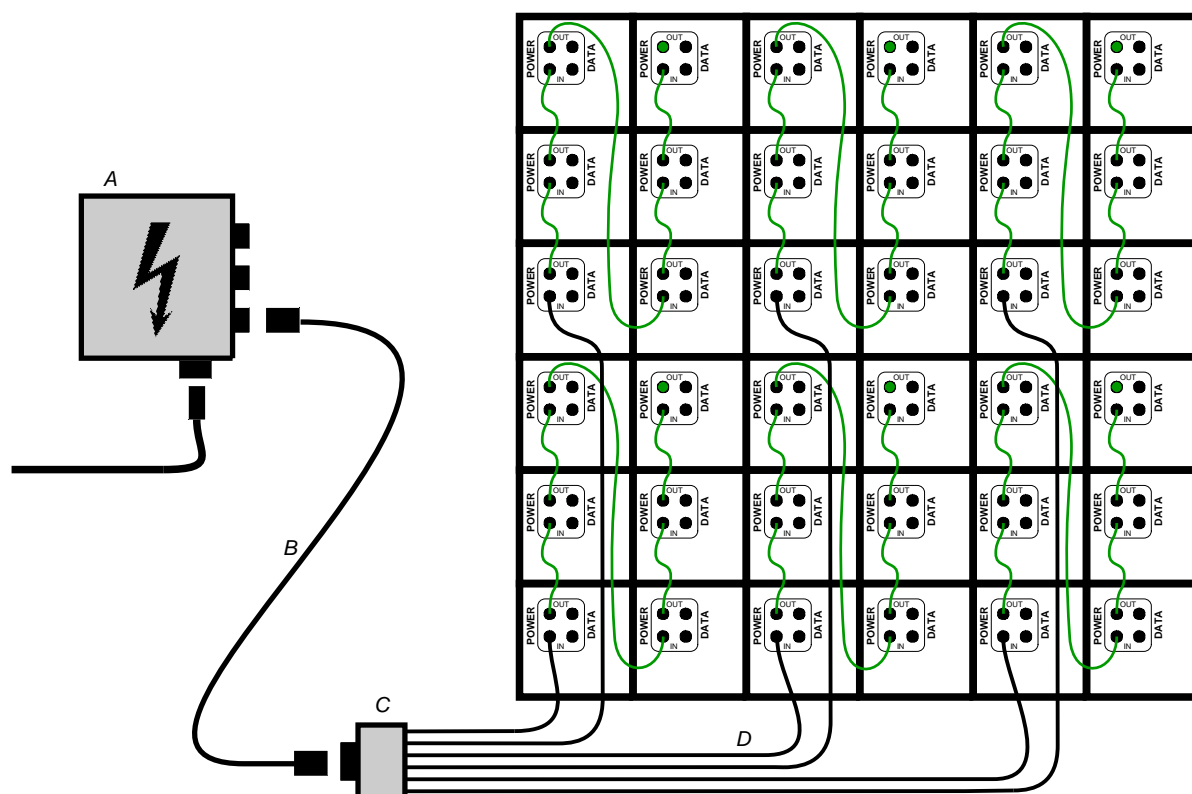


Image 5-3

- A Power box.  
 B Multi power cable.  
 C Spider connector.  
 D Power source cable.

## 5.3 Data cabling of a DLite rental display

### Data cabling

Data cabling is always done in a daisy chain manner. The start position of the chain must be in one of the corners of the DLite display. So, one of the corner tiles makes a connection direct to the digitizer or fiber link receiver. The daisy chain linking can be realized either in horizontal (preferred) or vertical direction. For cabling the digitizer and fiberlink, see manuals of digitizer and fiberlink.

Each tile in the DLite rental structure is provided with one data linking cable. Default (factory) plugged between the data input port and data output port (of the same tile). This data cables has to be unplugged first and then used to realize the desired data path, either horizontal or vertical.



**WARNING:** Be sure that the connector sockets are provided with sealing rings before plugging in the power and data cables. Use the correct sealing ring for the corresponding socket. Black colored ring (B361243, left image) for power, red (B361595, right image) for data. Replace damaged sealing rings immediately.



---

### Necessary parts

Dummy data plug.

### How to realize the data cabling of a DLite rental display ?

1. Connect the data cable coming from the digitizer with the 'DATA IN' socket of the first tile. The first tile must be one of the tiles in the corner of the DLite display.
2. Daisy chain the data-linking cables from the 'DATA OUT' of one tile to the 'DATA IN' of the next. This daisy chain linking can be performed either in the horizontal or vertical directions starting in a corner of the DLite display.
3. Place a Dummy Data plug on the 'DATE OUT' connector of the last tile in the chain.
4. Make sure that all plug holder clamps are locked firmly.
5. Specify in the setup Controlling Software how the data linking of the tiles is realized (Horizontal or Vertically) and which tile is the first in the chain.



**When using a Fiberlink System the fiberlink data connection is inserted between the digitizer and the first DLite tile. The fiberlink Receiver is provided with a 'DATA IN' and a 'DATA OUT' connector, just like the DLite tiles.**



**When using a Ambient Environment Controller (AEC) the data connection of the AEC is inserted between two DLite tiles. The AEC is provided with a 'DATA IN' and a 'DATA OUT' connector, just like the DLite tiles.**

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Example of data cabling of a DLite rental display

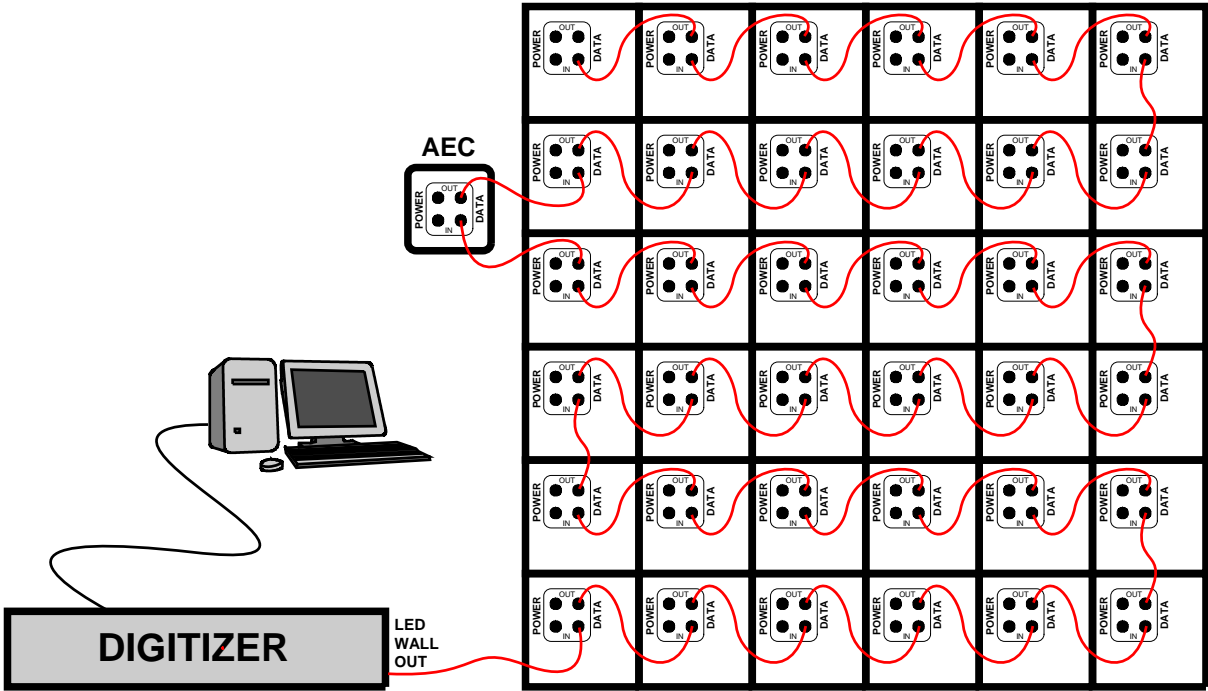


Image 5-4



## 6. MAINTENANCE

### 6.1 Cleaning DLite tiles

#### Why clean DLite tiles ?

Due to outdoor use the DLite tiles are exposed to all kinds of weather conditions. Sand, dust, smog and other dirt adhere on the DLite tiles and because of that the performance of the DLite tiles is reduced. That's why cleaning the DLite tiles is recommended at regular intervals.



Image 6-1  
LED's and shaders covered with dirt.

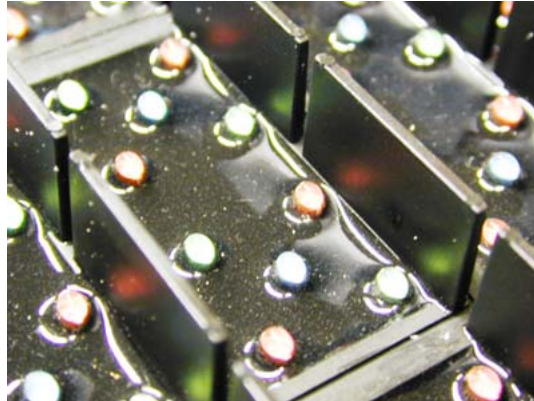


Image 6-2  
Clean LED's and shaders.



**Always clean all tiles of the LED-wall to avoid brightness differences between cleaned and uncleaned tiles.**

#### Necessary tools

- Vaporizer with a window cleaning product.
- Soft hand brush with long hair (recommended 4 cm pure pork hair).
- Garden hose with a spray nozzle.
- Compressed air.

#### How to clean DLite tiles ?

1. Seal up the data and power sockets using a power and data linking cable. Make sure that all plug holder clamps are locked firmly.
2. Place the tile flat on a solid table with the LED's facing upwards and vaporize, through different directions, the window cleaning product on the shaders and LED's.  
**Caution:** *Do not use industrial grease removers. Use only materials or chemicals that are inert, nonabrasive, noncorrosive and non-marking.*
3. Brush down all dirt of the LED's and the shaders using a soft hand brush.  
**Caution:** *Do not use a hard bristled brush.*
4. Raise the tile up with the shaders vertically and wash away the remaining soap with plenty of fresh water.  
**Caution:** *Do not submerge the tile fully or partly in water or other liquids.*
5. Repeat from step two until the tile is clean.
6. Blow the surface dry with compressed air.



**The DLite tiles can also be cleaned while they are mounted. A solid scaffold or Z-lift is required to do so. Start cleaning from top row to bottom row using the above procedure.**



## 7. SERVICING

### 7.1 Safety instructions

#### Personal Protection



Image 7-1  
Warning



Image 7-2  
Suspended Loads



Image 7-3  
Hard Hat



Image 7-4  
Mind Your Fingers

Be aware of suspended loads, wear a hard hat to reduce the risk of personal injury. Mind your fingers while working with heavy loads.

#### Safety precautions

- Fence off a restricted area of at least 3 meters around the LED-wall using an eye-catching fence and “KEEP OUT” signs. This to prevent unauthorized persons come near the LED-wall during servicing.
- Inspect the complete LED-wall for security, wear, deformation, corrosion, and any other circumstances that may effect the load handling capability of the part.
- Check the handles on the back of the tiles for loss of strength due to exposing to environmental conditions. Replace damaged handles immediately before starting any servicing to the tiles.
- Ensure that each tile is secured with a safety cable to the LED-wall structure.
- Do not modify and/or replicate any component. Barco uses specific materials and manufacturing processes in order to achieve part strength. No other parts then Barco parts are allowed.

### 7.2 Remove a DLite tile

#### 7.2.1 Front access of a DLite tile



**CAUTION:** The following procedure must be performed by authorized and qualified technical personnel only, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.

#### Necessary tools

- DLite front access tools.
- Scaffold or Z-lift.

#### Procedure to remove a tile by accessing it from the front:

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold in front of the LED-wall or use a Z-lift to access the tile.  
**Warning:** Both hands must be free for accessing a tile in a LED-wall. Therefore the use of a ladder to access a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.
3. Put the front access tools into the little holes in the sides of the tile, vertically in the middle of the right and left sides of the module. Make sure you use the correct front access tools for the corresponding DLite tiles. (image 7-5, image 7-6)
4. Push and turn the tools clockwise deeper inside the DLite tile until the flat surface of the tool touches the top of the shaders. This action will detach both latch hooks of the tile. (image 7-7)
5. Grab with both hands the eye bolts of the DLite access tools and pull the tile gently forwards to detach from the LED-wall. (image 7-8)

## 7. Servicing

6. Pull the tile completely out of the LED-wall and let it steady rest on one arm with the LED's facing down. (image 7-9, image 7-10)
7. Disconnect with your free hand the power and data cables and remove the safety cable. Now the tile is completely detached from the LED-wall.

**Tip:** *It's much easier and recommended that a second person disconnects the power and data cables and removes the safety cable while the first person holds the DLite tile steady.*

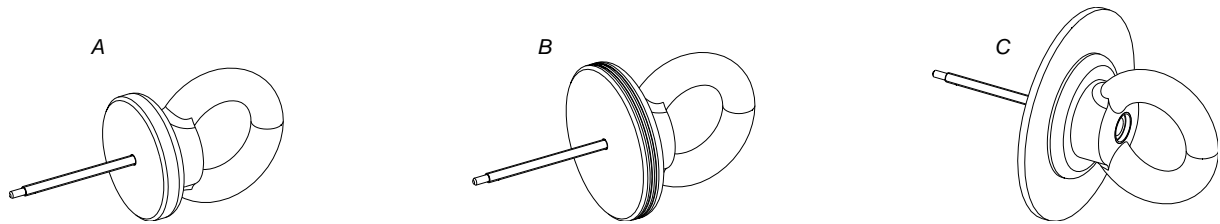


Image 7-5  
DLite front access tools:

- A Front access tool for DLite 7 (R9850290)
- B Front access tool for DLite 10 (R9850300)
- C Front access tool for DLite 14 (R9850310)

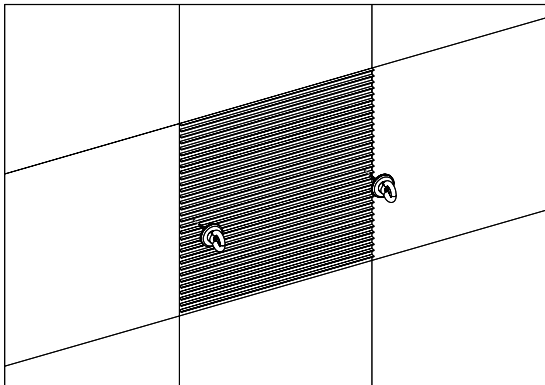


Image 7-6

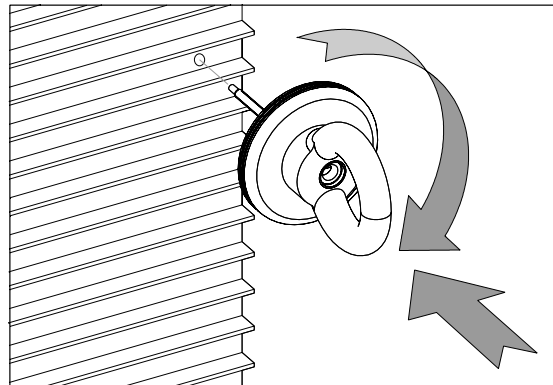


Image 7-7

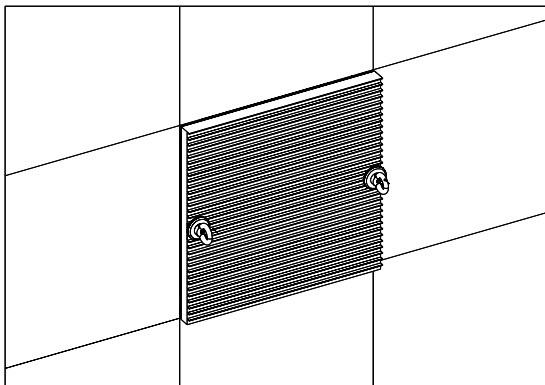


Image 7-8

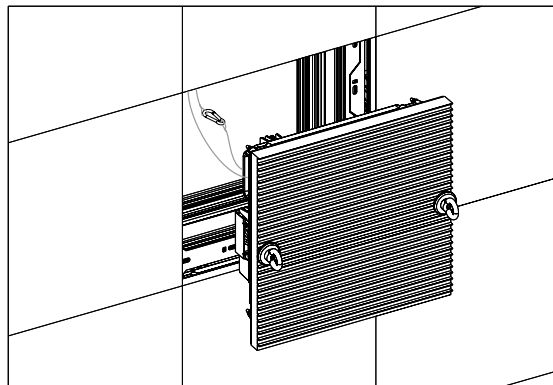


Image 7-9



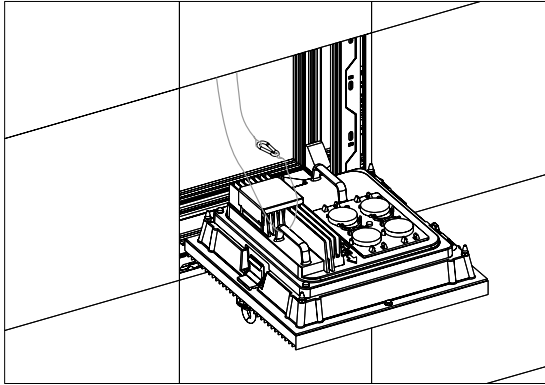


Image 7-10

### 7.2.2 Rear access of a DLite tile



**CAUTION:** The following procedure must be performed by authorized and qualified technical personnel only, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.

#### Necessary tools

Flat blade screw driver.

#### Necessary parts

Extra safety cable.

#### Procedure to remove a tile by accessing it from the rear:

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold at the rear of the LED-wall or use a Z-lift to access the tile in case there is no frame provide to the rear of the LED-wall with service access.  
**Warning:** Both hands must be free for accessing a tile in a LED-wall. Therefore the use of a ladder to access a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.
3. Disconnect the power and data cables of the tile.
4. Replace the safety cable with two original Barco safety cables in chain. This will leave more space for maneuvering the tile, as described in this procedure, later.  
**Caution:** Place maximum two safety cables in chain.
5. Grab with one hand the tile firmly by one of its handles and release the latch hooks of the tile with a flat blade screw driver. (image 7-11, image 7-12)  
**Caution:** Keep holding firmly the tile once the latch hooks are unlocked, because the possibility exist that an unlocked tile moves a little bit forward and tumbles down.
6. Remove the tile out of the LED-wall with next movements:
  - a) Grab the tile with both hands by the handles and push the tile forwards out of the LED-wall. (image 7-13)
  - b) Turn over the tile so the LED's are facing downwards. (image 7-14)
  - c) Release one handle and grab the tile underneath at the LED surface.
  - d) Rotate the tile diagonally 45 degrees. (image 7-15)
  - e) Pull the tile softly diagonally back through the opening and let it steady rest on one arm with the LED's facing down. (image 7-16)**Caution:** Be careful not to damage the shaders while removing the tile.
7. Remove with your free hand the safety cable. Now the tile is completely detached from the LED-wall.  
**Tip:** It's much easier and recommended that a second person removes the safety cable while the first person holds the DLite tile steady.

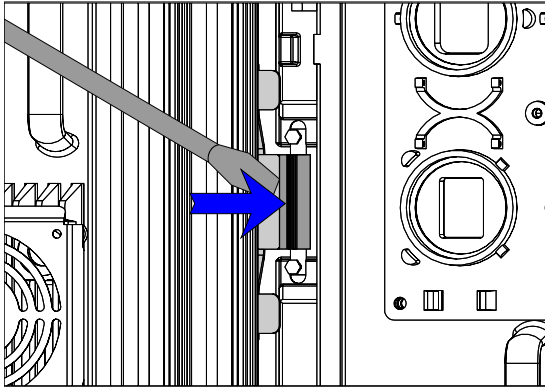


Image 7-11

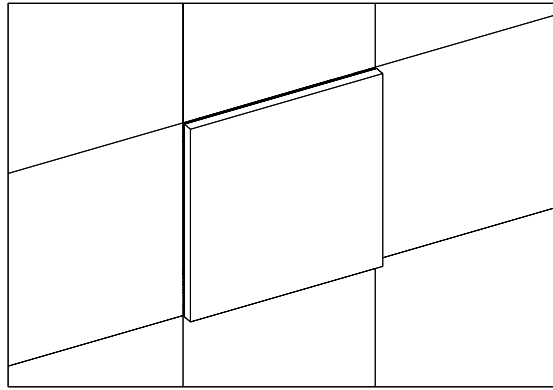


Image 7-12

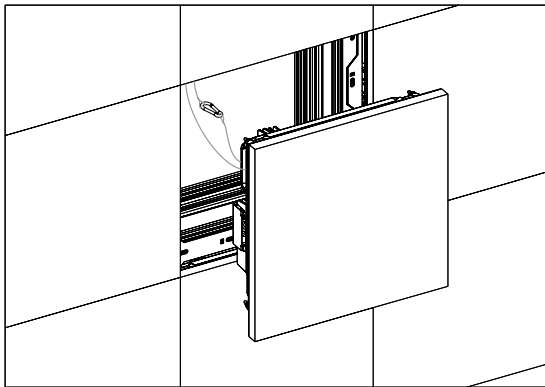


Image 7-13

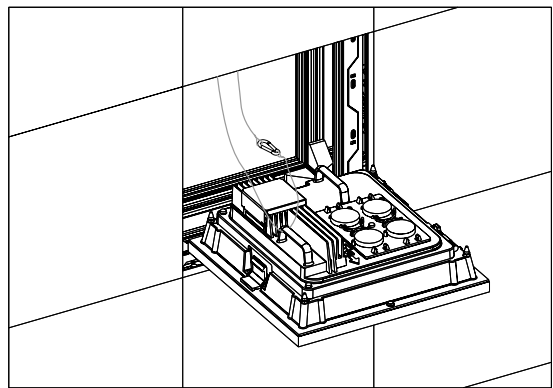


Image 7-14

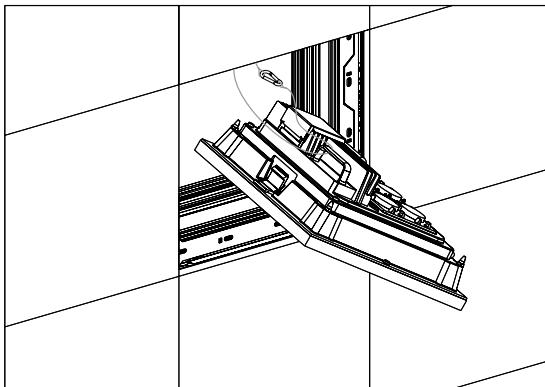


Image 7-15

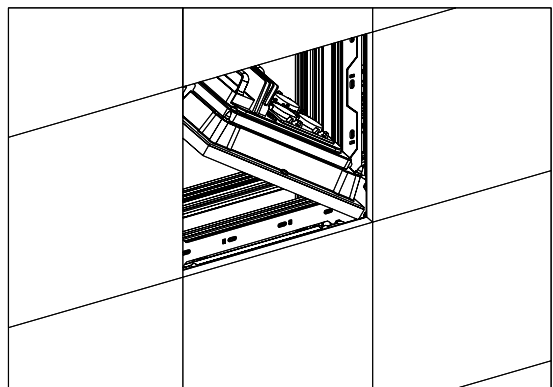


Image 7-16

### 7.2.3 Simultaneous front and rear access of a DLite tile



**CAUTION:** The following procedure must be performed by minimum two authorized and qualified technical persons, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.

### Necessary tools

Flat blade screw driver.

### Procedure to remove a tile by accessing it simultaneous from the front and the rear:

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold at the rear of the LED-wall or use a Z-lift to access the tile in case there is no frame provide to the rear of the LED-wall with service access.
3. Build a solid scaffold in front of the LED-wall or use a Z-lift to access the tile.  
**Warning:** *Both hands must be free for accessing a tile in a LED-wall. Therefor the use of a ladder to access a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.*
4. One person takes place at the front of the LED-wall and another person at the rear.
5. The person standing at the rear of the LED-wall safely disconnects the power and data cables to the tile.
6. Subsequently the person at the rear grabs with one hand the tile firmly by one of his handles and releases the latch hooks of the tile with a flat blade screw driver.  
**Caution:** *The person at the rear keep holding firmly the tile once the latch hooks are unlocked, because the possibility exist that an unlocked tile move a little bit forward and tumble down. Note that the person at the front of the LED-wall does not see which tile is unlocked !*
7. Than the person at the rear grabs the tile with both hands by the handles and push the tile forwards out of the LED-wall and handle the tile over to the person standing at the front of the LED-wall.
8. While the person at the front holds the tile steady, the person at rear removes the safety cable.

## 7.3 Insert a DLite tile

### 7.3.1 Front access of a DLite tile



**CAUTION:** The following procedure must be performed by authorized and qualified technical personnel only, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.

### Necessary tools

Scaffold or Z-lift.

### Necessary parts

Safety cable.

### Procedure to insert a tile from the front of the LED-wall:

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold in front of the LED-wall or use a Z-lift to access the tile.  
**Warning:** *Both hands must be free to insert a tile in a LED-wall. Therefore the use of a ladder to insert a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.*
3. Stand in front of the tile-opening in the LED-wall and hold the tile top-up with the back of the tile facing the opening. Let the tile rest against your body supported with one hand underneath the tile.
4. Connect a safety cable from the tile to the assembly. Loop through the upper handle of the tile and around an upper frame member. Ensure to clasp the two ends of the safety cable together. (image 7-17)
5. Connect all power and data cables with the tile. (image 7-18)  
**Tip:** *It's much easier and recommended that a second person attaches the safety cable and connects the power and data cables while the first person holds the DLite tile steady.*  
**Caution:** *Make sure that all plug holder clamps (A) are locked firmly.*
6. Place the DLite tile into position by guiding the position pins of the tile through the corresponding positioning holes of the LED-wall. (image 7-19)
7. Click the tile into the LED-wall until both latch hooks of the tile are totally hooked behind the latch brackets of the LED-wall.

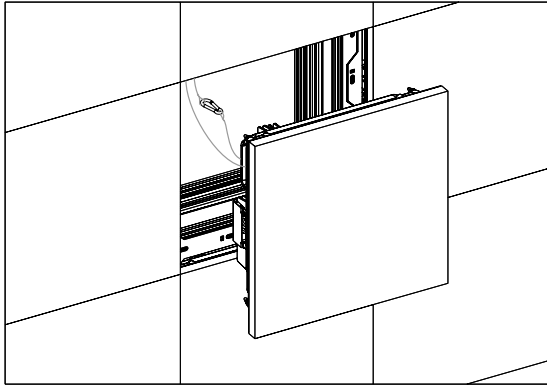


Image 7-17

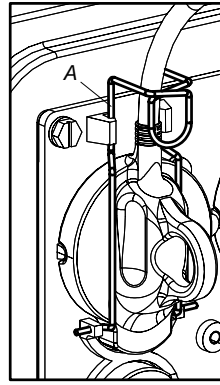


Image 7-18

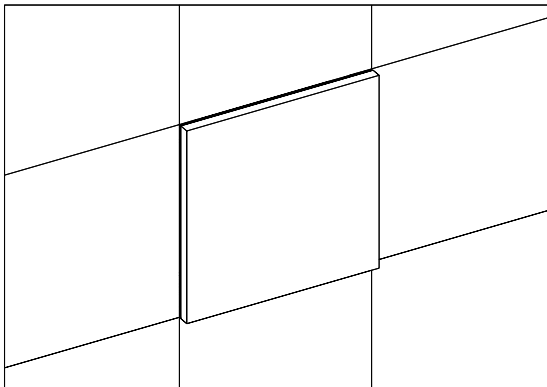


Image 7-19

### 7.3.2 Rear access of a DLite tile



**CAUTION:** The following procedure must be performed by authorized and qualified technical personnel only, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.

#### Necessary parts

Two safety cables.

#### Procedure to insert a tile by accessing it from the rear:

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold at the rear of the LED-wall or use a Z-lift to access the tile in case there is no frame provide to the rear of the LED-wall with service access.  
**Warning:** Both hands must be free to insert a tile in a LED-wall. Therefore the use of a ladder to insert a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.
3. Hold the tile in front of the opening at the rear of the LED-wall and let it steady rest on one arm with the LED's facing down.
4. Connect a safety cable from the tile to the assembly. Loop through the upper handle of the tile and around an upper frame member. Ensure to clasp the two ends of the safety cable together.  
**Tip:** You can use a chain of maximum two safety cables. This will leave more room for maneuvering the tile, as described in this procedure, later. Replace the chain with one safety cable once the tile is completely installed. It's much easier and recommended that a second person attaches the safety cables while the first person holds the DLite tile steady.

## 5. Insert the tile into the LED-wall with next movements:

- a) Grab the tile with one hand firmly by one of his handles, supported with your other arm underneath the tile, LED's facing down.
- b) Softly guide the tile diagonally through the opening of the LED-wall. Top of the tile first. (image 7-20)
- c) Grab the tile with both hands by the handles once the tile is completely through the opening. (image 7-21)
- d) Raise the tile vertically and pull it back into position by guiding the position pins of the tile through the corresponding positioning holes of the LED-wall.. (image 7-22, image 7-23)
- e) Pull the tile into the LED-wall until both latch hooks of the tile are totally hooked behind the latch brackets of the LED-wall.

**Caution:** Be careful not to damage the shaders while inserting the tile.

## 6. Connect the power and data cables to the tile. (image 7-24)

**Caution:** Make sure that all plug holder clamps (A) are locked firmly.

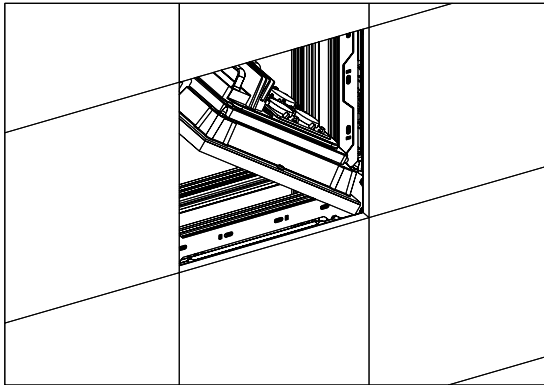


Image 7-20

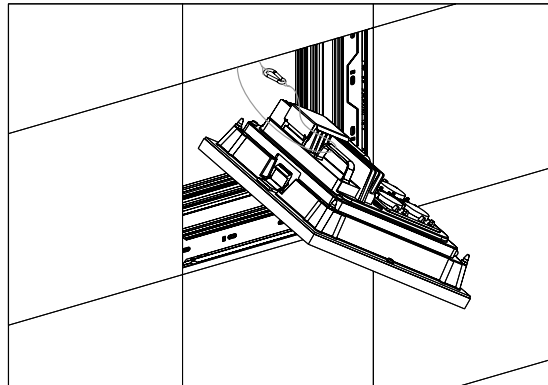


Image 7-21

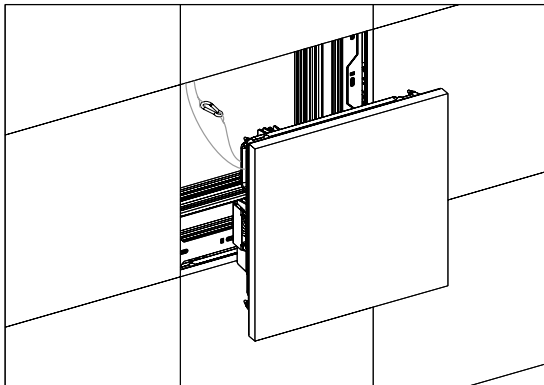


Image 7-22

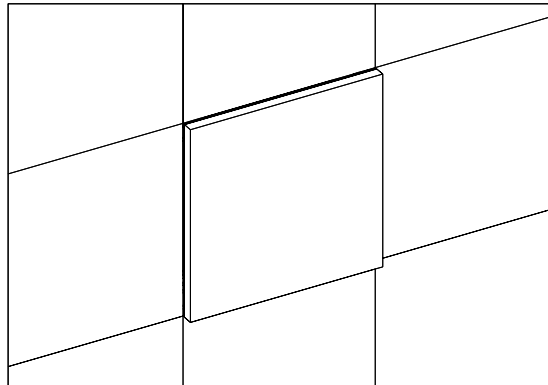


Image 7-23

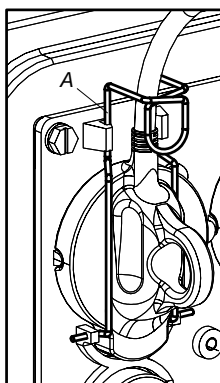


Image 7-24

## 7.4 Hot swap of a DLite tile



**CAUTION:** The following procedure must be performed by authorized and qualified technical personnel only, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.

### Necessary tools

Wrench 10 mm.

### How to hot swap a DLite tile

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold at the rear of the LED-wall or use a Z-lift to access the tile in case there is no frame provide to the rear of the LED-wall with service access.  
**Warning:** Both hands must be free for accessing a tile in a LED-wall. Therefore the use of a ladder to access a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.
3. Remove the 'connection module' on the back of the tile without disconnecting the external power and data cables. This can be realized by unscrewing it and disconnecting the inside power and data cable. (image 7-25)  
**Caution:** Do not lose the four anti-loss washers between the tile and the connection module.
4. Remove the tile as described in step four and followings in the procedure : "Rear access of a DLite tile", page 53.
5. Install an other tile, without a 'connection module', back into the LED-wall as described in step tree and followings in the procedure: "Rear access of a DLite tile", page 56.
6. Reconnect the data and power cable between the tile and the 'connection module'.
7. Fasten the 'connection module' inside the new tile with four bolts. Ensure that each bolt is provided with an anti-loss washer. Note that the power sockets must be on the left side and the data sockets on the right.  
**Caution:** Replace the sealing ring between the tile and the connection module in case of damage.

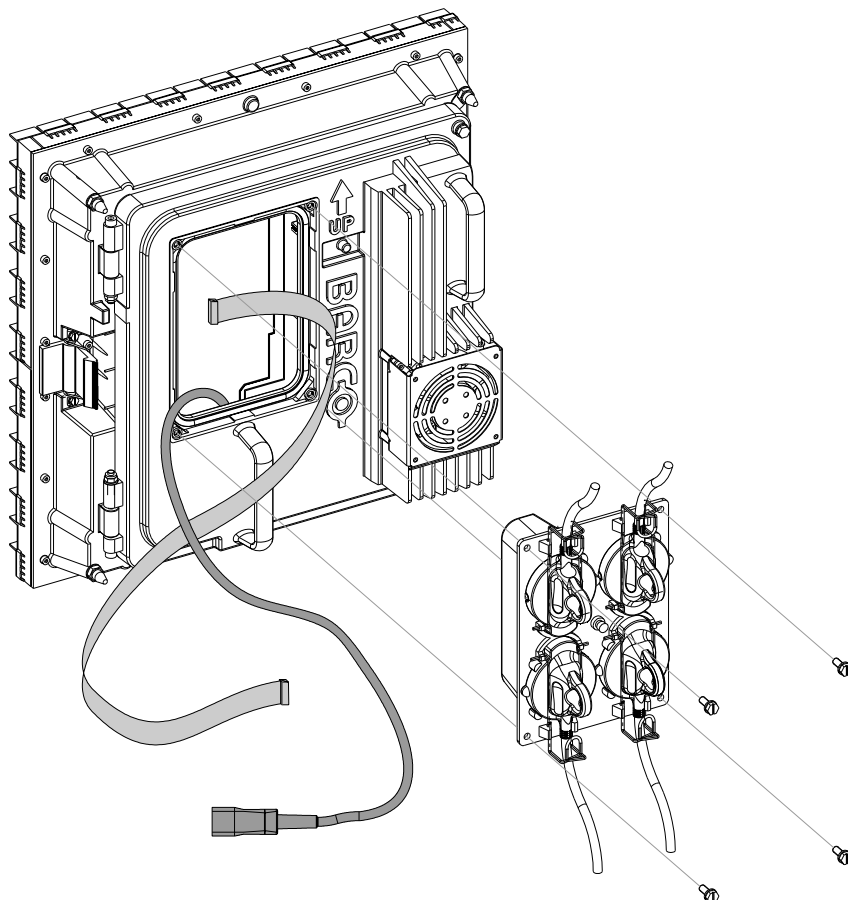


Image 7-25

## 7.5 Rear access of a DLite tile with an obstructed back exit

### What has to be done ?

Remove or insert a DLite tile with an obstructed back exit. Normally this can be done by front access. But when front access is difficult to realize or even impossible, then there is a work around which is described in the next procedure. This work around exist in removing a neighboring tile and then remove or insert the obstructed tile via the back exit of the removed neighboring tile.



**CAUTION:** The following procedure must be performed by authorized and qualified technical personnel only, which are thoroughly familiar with the product and all of the proper safety checks of this product. To do otherwise increases the risk of hazard and injury to the user.



It is recommended to read and understand the procedures for removing and inserting a DLite tile ("Rear access of a DLite tile", page 53, "Rear access of a DLite tile", page 56) before starting with this procedure.

### Necessary tools

Flat blade screw driver.

### Necessary parts

Extra safety cable.

### How to access a DLite tile with an obstructed back exit

1. Read and heed the servicing safety instructions page 51.
2. Build a solid scaffold at the rear of the LED-wall or use a Z-lift to access the tile in case there is no frame provide to the rear of the LED-wall with service access.  
**Warning:** Both hands must be free for accessing a tile in a LED-wall. Therefore the use of a ladder to access a tile is forbidden. Only a solid scaffold or a Z-lift is allowed.
3. Remove a close by DLite tile which back exit is not obstructed. This close by tile can be the left tile, the right tile, the upper tile or the lower tile. For removing a tile see "Rear access of a DLite tile", page 53.
4. Place two original Barco safety cables in chain connected with the adjoining frame member of the previous removed tile and the obstructed back exit and nearest handle. This will leave more space for maneuvering the tile.  
**Caution:** Place maximum two safety cables in chain.
5. Remove (or insert) the obstructed tile through the back exit of the previous removed neighboring tile. Do this by passing the tile, in front of the display, from one tile opening to the other tile opening.  
**Tip:** It is recommended to do this action with two persons.
6. Insert the previous removed neighboring tile. See "Rear access of a DLite tile", page 56.



It will be necessary to remove the second closest tile as well in case the back exit of all the closest tiles are obstructed.





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