



CLEVERON 351/352
SITE VALIDATION & PREPARATION
CL351_352_SVP_V1.2

VERSION

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1. GENERAL SITE SELECTION PRINCIPLES

Cleveron 351/352 can be installed both in outdoor and indoor environments.

- It is recommended to install the parcel locker near to and on the same level with a parking place to simplify the courier workflow and end user experience.
- In the interest of cleanliness, terminal lifetime and user experience it is recommended that the locker is not located:
 - Under direct sunlight
 - Under direct rain
 - Next to a traffic road
- For safety concerns, the APM must not be in a place where water may be pooling.
- Threat of vandalism can be greatly reduced by placing the locker in a public, well-lit location with external surveillance cameras.
- The locker should not be installed in a location where it restricts movement of people, vehicles or goods.
- Installation location must be accessible with a forklift or a hand pallet truck.
- Around the machine, especially in the user area, the floor / ground shall be kept clean and free of any items, including which could cause slipping or falling.
- Locker must be protected from lightning.



Elements that facilitate general safety of public places or operation of alternative services must not be located behind, under or on top of the parcel locker.

Examples are such as:

- Fire extinguishers, fire hose systems, fire alarm switches
- Sewage connections, electricity switches, waterworks pipes, maintenance hatches
- Other doors, hatches, cables, devices and access means to devices or facilities

2. INSTALLATION AREA

The required area necessary for the parcel locker installation consists of the area required underneath the machine itself and the free area located around the machine:

- To enable maintenance activities the locker must not be installed with the back side against the wall.
- There shall be 5 to 10 cm of free space between the wall and the back side of the locker.

2.1 Space usage

Cleveron 351/352 consist of two or more modules.

Table 2.1. Area usage of a single module (footprint dimensions)

Width (module)	482 mm
Width (sidewall)	15 mm
Depth	696 mm

2.2 Service area

There must be sufficient free space in front and above the machine to enable efficient service activities, comfortable usage and maintenance. The service area per module is brought out in the following table (Table 2.2). The service area combined with the dimensions of the module gives the minimum installation site dimensions (Table 2.3).

Table 2.2. Service area dimensions

	Service area dimension (mm)
Behind	50
In front	1500
Above (w/o roof)	300
Above (with roof)	500
Side	500

Table 2.3. Installation site dimensions

	Installation site dimension (mm)
Depth	2250
Height (w/o roof)	2475
Height (with roof)	2920
Width depends on the no. of modules	

Figure 2.1 depicts the requirements for the service area for Cleveron 351/352 with an overhanging roof and Figure 2.2 without the awning/overhanging roof.

PS! The drawings are out of proportion!

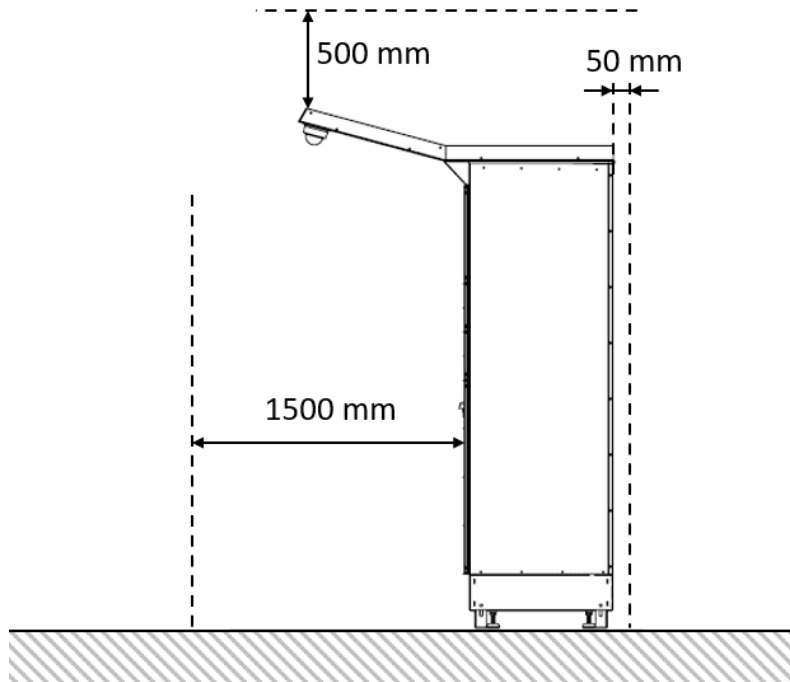


Figure 2.1. Service area with overhanging roof

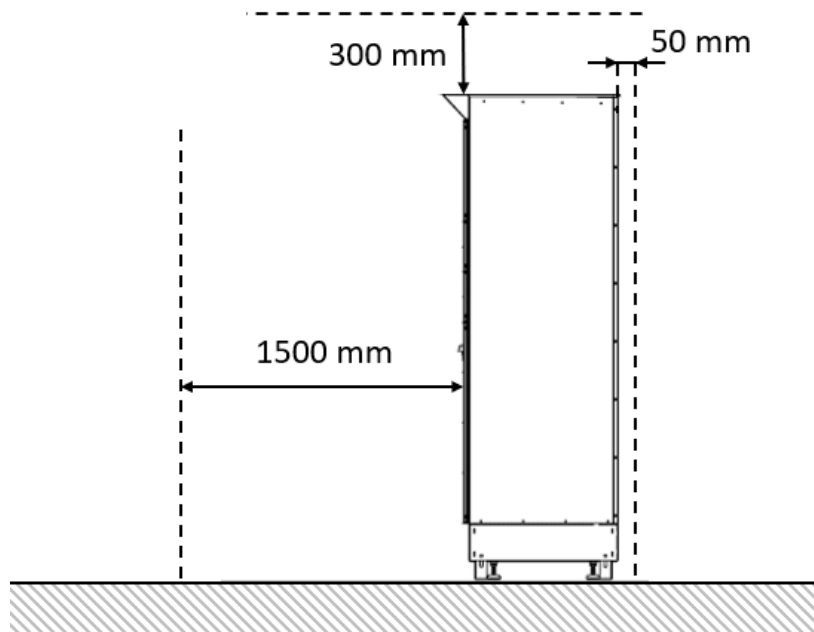


Figure 2.2. Service area without overhanging roof

2.2.1 Clear floor or ground space for wheelchairs

To meet the ADA (Americans with Disabilities Act) requirements, the minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 760 mm by 1220 mm (30 in by 48 in). The minimum clear floor or ground space for wheelchairs may be positioned for forward or parallel approach to an object.

3. REQUIREMENTS FOR THE GROUND

The best recommended installation surface for Cleveron 351/352 is concrete.

Cleveron 351/352 is placed onto the ground with four adjustable feet that are located at the corners of each module.

Module type	APM weight (kg)	Max. weight of parcels (kg)	Max total weight (kg)	Compression load (MPa)*	
				Empty	Max. load
Main module (control unit + 4 doors)	227	126	353	0.20	0.31
Heaviest extra module (18 doors)	194	303	497	0.17	0.43

*Compression load is calculated with machine feet of 60 mm diameter.

Compression strength examples of possible installation surfaces.

Table 3.1. Floor compression strengths

Material	Compression strength (MPa)
Concrete	20-30
Kerbstone	~3.6
Asphalt	~2.5

3.1 Ground deviation



The ground deviation allowed from a horizontal plane is ≤ 80 mm along the length of all connected modules!

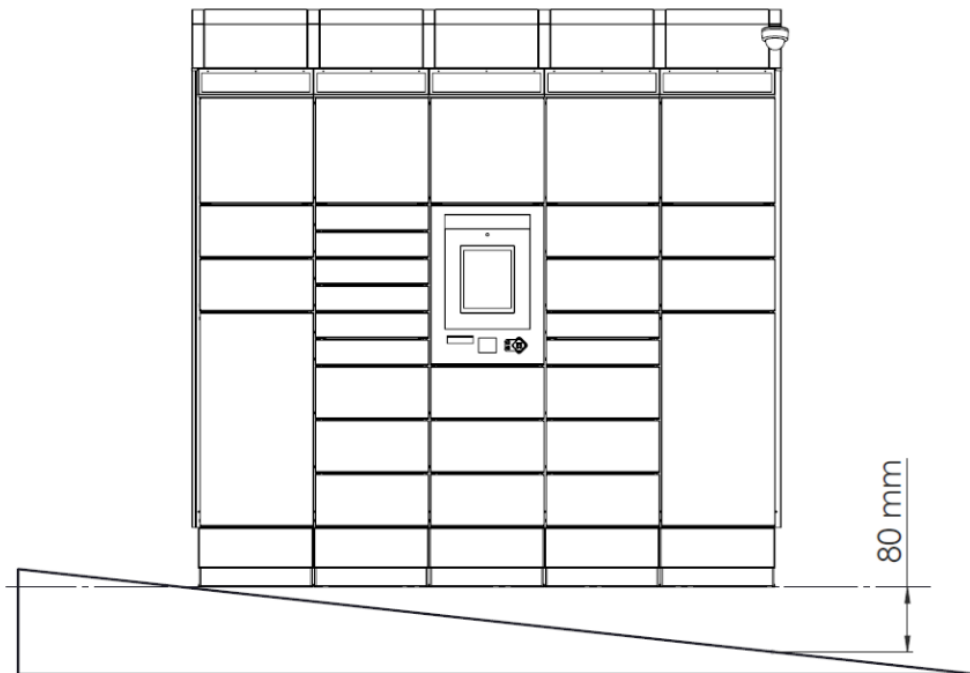


Figure 3.1. Maximum allowed ground deviation from horizontal plane

4. ANCHORING

Cleveron 351/352 does not require anchoring in normal circumstances, when fitted with (optional) concrete weights in base frames and without an overhanging roof / awning. The stability of the locker is then achieved by concrete weights inside the main frame of the machine.



Cleveron 351/352 must always be anchored when fitted with awning / overhanging roof!

The necessity of anchoring Cleveron 351/352 depends on the specific location of the installation site. The machine must be anchored if the local laws and/or regulations require so.

Anchoring is recommended for the 351/352 when it is installed in a potentially seismic zone or area with known severe storms and strong winds (more than 25 m/s). Furthermore, anchoring is effective against tipping over due to vandalism.

Recommendations for ground

Anchoring to a concrete slab is the most effective way of anchoring. Recommended thickness of the slab is 120 mm. Refer to Table 4.1 and Figure 4.1 for detailed information regarding anchoring – D stands for hole diameter, B is for embedment depth, E marks the hole depth and F is for minimum distance to the edge of the slab.

Table 4.1. Anchor parameters

Anchor type	D (mm)	B (mm)	E (mm)	F _{min} (mm)
Concrete Screw W-BS type-A4 10-35-90*	10	80	95	70

*Additionally, a washer with D_{in} = 10.5 mm, D_{out} = 30 mm is required

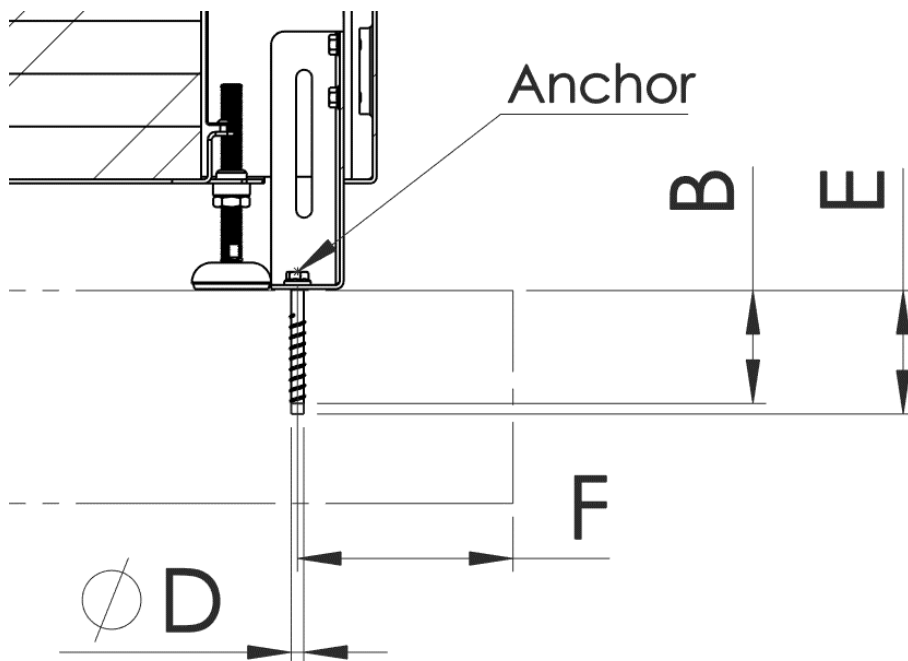


Figure 4.1. Anchor parameters

In case of less demanding installation sites, it is also possible to anchor the machine to asphalt. Regarding preparation for the anchoring, the requirements are the same as for concrete, although the anchoring itself will not be as effective as it would be with concrete.

4.1 Anchoring to the ground

Cleveron 351/352 is anchored through socle profile which is also used as an anchoring bracket. There are two anchoring brackets per module, one on the front and one on the rear side of the base frame. One module can be anchored with four anchors in total, two per bracket (Figure 4.2).

Following steps describe the sequence of the anchoring process:

1. Open the lower door(s).
2. Remove the bottom plate(s).
3. Remove the concrete weights from the base frame.
4. Install anchors.
5. Place the concrete weights back into the base frame (optional).
6. Re-attach the bottom plate(s).
7. Close the door(s).

4.1.1 Anchoring versions 352.03.01

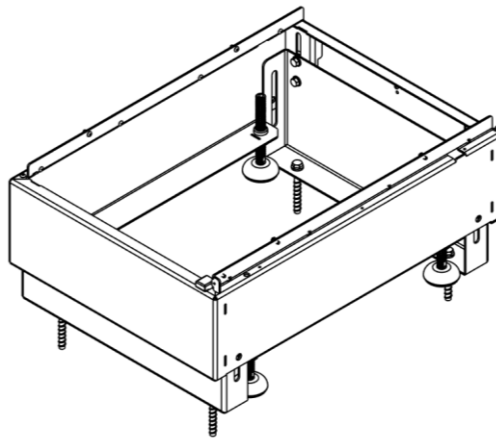


Figure 4.2. Installed rear-right anchoring bracket

The exact locations of the support legs and anchors are brought out in Figure 4.3.

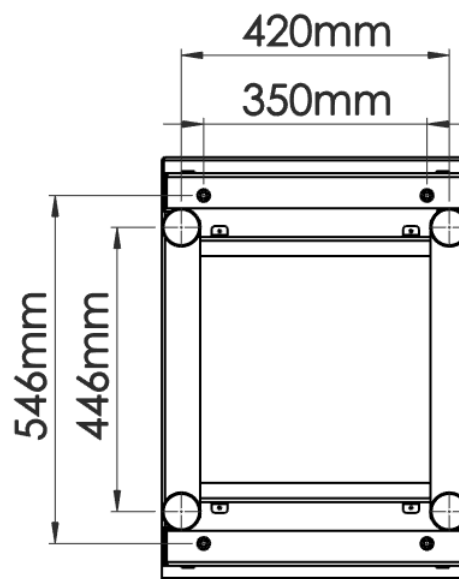


Figure 4.3. 352.03.01 bottom view of the base frame; anchors and support legs locations

4.1.2 Anchoring versions 351.0X.02 and 352.03.02

The exact locations of the support legs and anchors are brought out in Figure 4.4.

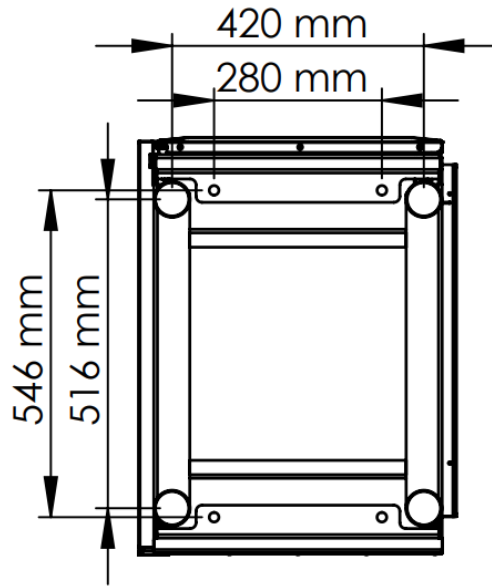


Figure 4.4. 351.0X.02 & 352.03.02 bottom view of the base frame; anchors and support legs locations

4.1.3 Anchoring pattern

Since modules of the Cleveron 351/352 are fastened to each other, not every module needs to be anchored. It is suggested to anchor at least every third and every outermost module of the APM. For some configurations every second module (instead of every third) is recommended to be anchored (e.g., when 5 modules are in a row). Figure 4.5 shows examples of Cleveron 351/352 anchoring patterns.

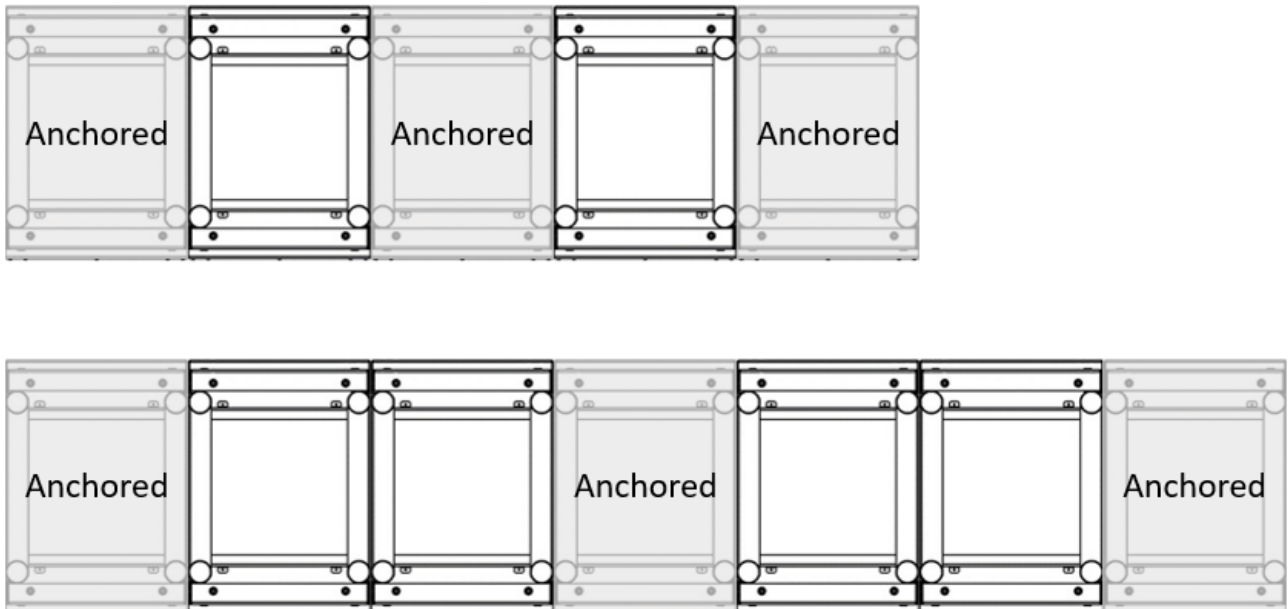


Figure 4.5. Anchoring pattern examples of Cleveron 351/352

5. POWER AND NETWORK CONNECTION

5.1 Power supply

Parameters of power supply are brought out in the following table (Table 5.1).

Table 5.1. Electrical parameters

	EU	US
Rated voltage	230 V	110...120 VAC
Rated frequency	50 Hz	60 Hz
Plug type	CEE 7/7	NEMA 5-15P
Power cord length (external part)	4 m	3 m (118.1 inch)
Max. current	3.2 A	6.1 A



NB! All local or national regulations must be followed when performing electrical connections.

The main module of Cleveron 351/352 is equipped with a power cable for easy electrical connection. Cable entrance to the locker is through the rear wall of the machine via waterproof cable gland (Figure 5.1). The gland is covered with an extrusion tube where the cable exits from either the upper or lower end of the tube.

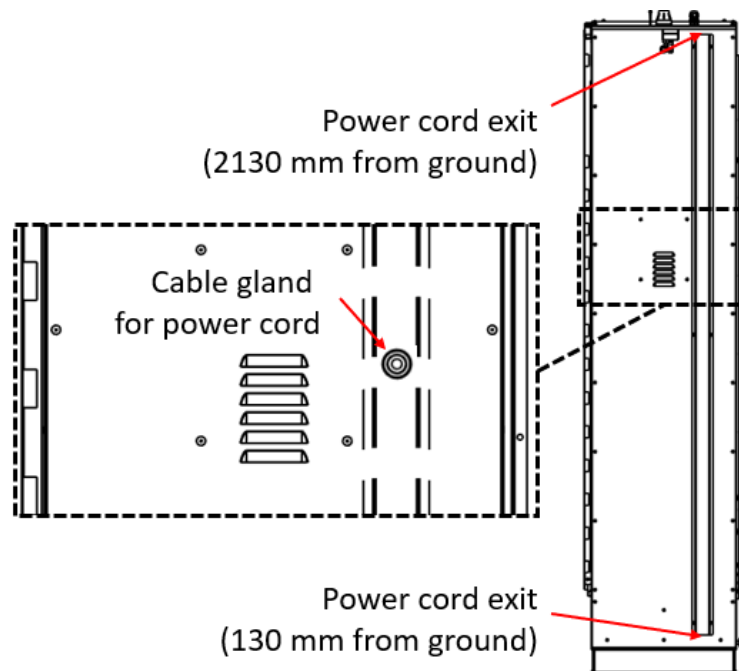


Figure 5.1. Power cord entrance to APM

As an option it is also possible to facilitate the electrical connection inside the locker with a customer provided cable. In this case, following parameters must be considered for the cable:

- Weatherproof
- Cross-section 3G1.5mm²
- Minimum length of the cable inside the locker is 2500 mm
- A residual-current device must be used that meets the local requirements and is adequate for the machine to be installed
- For hardwired installation, install a separate C10 circuit breaker on the supply line.

Recommended location for the connection socket is 2300 mm from the ground and behind the roof of the main module (Figure 5.2).

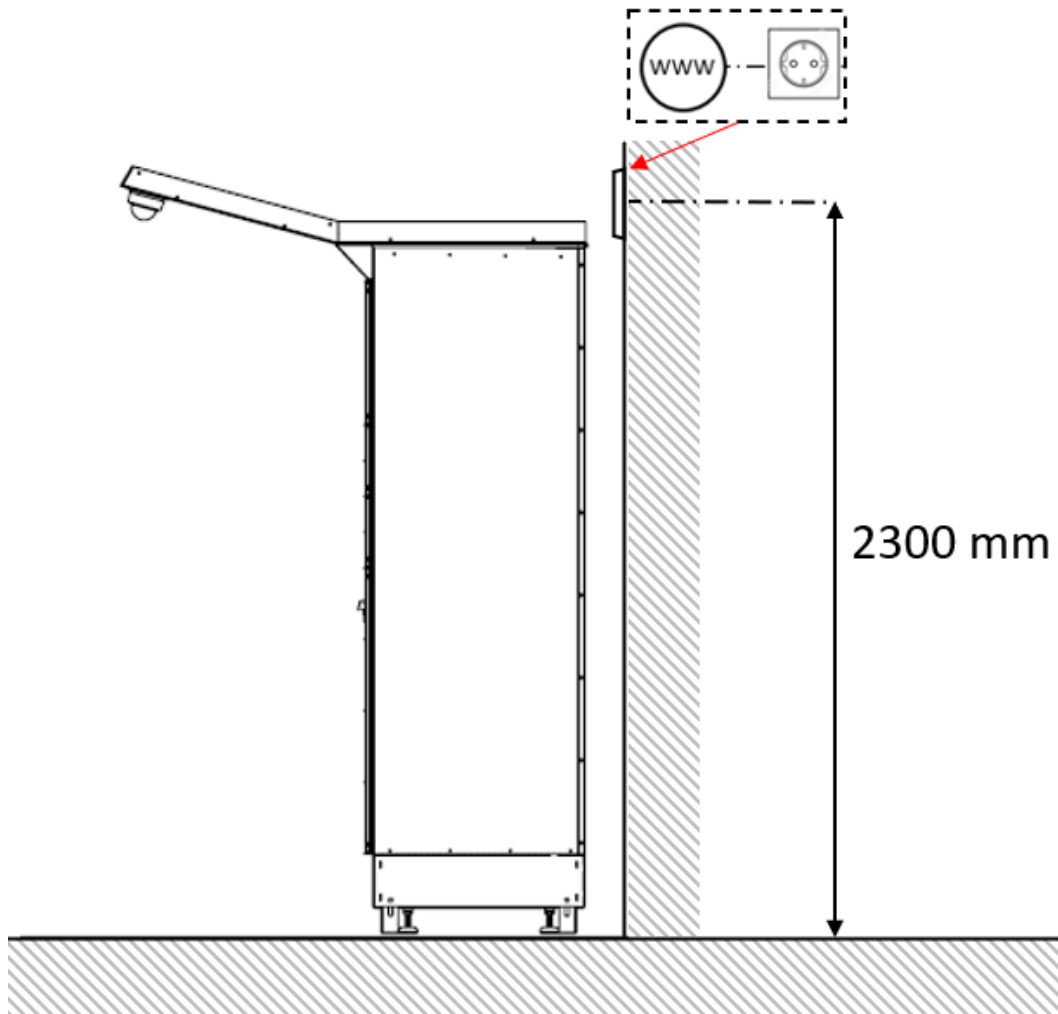


Figure 5.2. Recommended height for power and network connection sockets

5.2 Network connection

The primary option for network connection is 4G.

5.2.1 4G SIM card

- Good signal quality (>60%) in location
- Minimum 5 Mbit/s uplink / downlink
- Minimum 15 GB monthly data limit (automatically extended when the limit is reached)

NB! Same requirements apply if the 4G SIM card is used as a backup connection.

The 4G SIM card must be set up in such way that it will not lock up after the monthly data limit has been reached. If the APM cannot reach internet, it will periodically try reconnecting to network and resetting the router. Without any network connection, the APM will not be accessible by remote support either and is therefore virtually inoperable (only the parcels stored in the APM can be retrieved with a receive code).

By default, the SIM card is provided by Cleveron. If another SIM card is to be used, the following information must be given to Cleveron regarding the SIM card:

- APN (Access Point Name)
- SIM card PIN code (if applicable)
- Username (if applicable)
- Password (if applicable)

Using the provided information, the router is to be set up accordingly by Cleveron. If the router has not been set up for the specific SIM card or the provided information is not valid, the APM is not able to connect to internet via mobile connection.

5.2.2 Landline connection:

- Standard DSL or better
- Minimum 5 Mbit/s uplink / downlink
- IP address given by DHCP
- Data cable type CAT5 or better, RJ45 male

6. IMAGE CAPTURE AND DATA STORAGE

Cameras are available only for Cleveron 352 and they are used to ensure the safety of the machine. Data from the cameras is not constantly monitored and is not loaded to the cloud. It is possible to disconnect camera if local requirements require so. Camera is taking pictures upon specific set of events. Data is stored on the hard drive and is overwritten with a new footage when the data storage is getting full. It is also possible to save data from hard drive to the server.

Footage can be requested from technical support team.

Privacy mask can be applied. Privacy masking is a feature that is used to protect privacy by masking the preselected area. This area cannot be live viewed or recorded without removal of the privacy masking.

6.1 Console camera

Parantek DUM-P151 camera is used in Cleveron 352. Camera specifications are shown in Table 6.1.

Table 6.1. Console camera specifications

Description	Specification
Effective pixels	350 K (H728 x V488)
Min. illumination	0.2 Lux
Angle of view	95° (D), 75° (H), 56° (V)
Video capture	30 fps @ VGA (640 × 480)

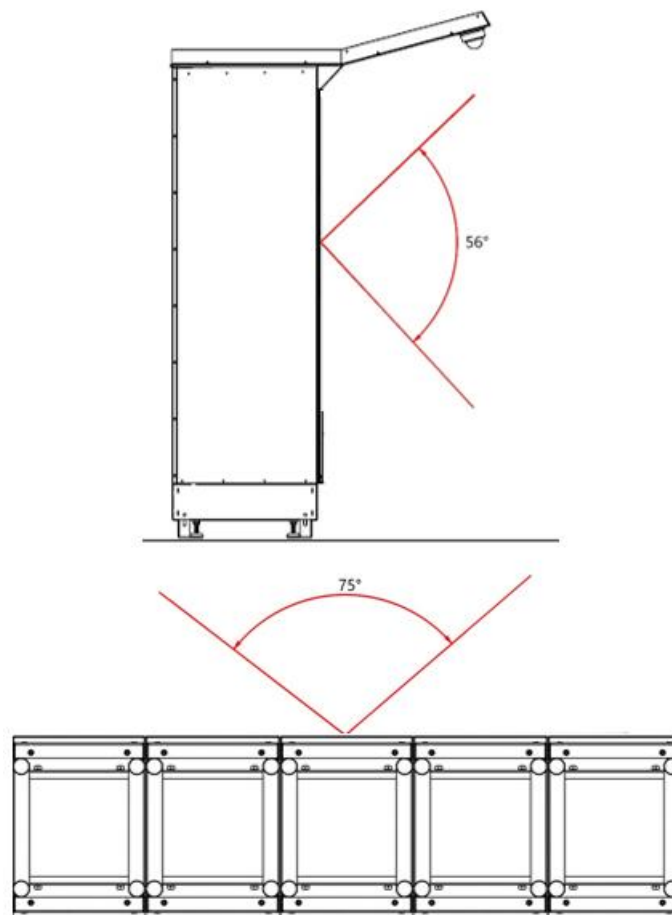


Figure 6.1. Console camera view

6.2 Surveillance camera(s)

Hikvision dome network camera is used in the Cleveron 352. Camera specifications are shown in Table 6.2.

If national or local regulations forbid to use such external cameras which runs through third party system, the machine operators can connect these cameras directly to their own system if two data cables are provided.

Table 6.2. Hikvision dome camera specifications

Description	Specification
Minimal illumination	Color: 0.014 lux @ (F1.6, AGC ON), 0 lux with IR
Angle adjustment	Pan: -30° to 30°, tilt: 0° to 75°, rotate: 0° to 360°
Maximum resolution	2688 x 1520
Video Bit Rate	32 Kbps to 16 Mbps
Operating condition	-30 °C to 60 °C (-22 °F to 140 °F), humidity 95 %
Protection	Ingress protection: IP66, IK08

Figure 6.2 shows an example of surveillance camera locations in the corners of the overhanging roof.



Figure 6.2. Surveillance camera locations

7. PACKAGING AND TRANSPORT

In depth packaging descriptions can be found in “Cleveron 351/352 technical description” document.

7.1 Cleveron 351

Cleveron 351 main module is shipped on a special pallet, as the main module is attached to an additional module, other individual modules are transported in a set of two and placed on a pallet.

7.2 Cleveron 352

Individual modules are transported in a set of two and placed on a pallet. It can be transported by a forklift or a hand pallet truck. The units are packed in cardboard and fastened with plastic straps.

For transportation one should consider ambient temperature of -30 ... +40 °C. The only exception goes for UPS storage which has different requirements for temperature and should be discussed with a company representative.

8. ANNEXES

8.1 Annex 1 - Site inspection checklist

Installation site Location address	
Planned installation date Notes	
Inspection performed by Name + signature	
Locker configuration Notes / sketch	
Unloading area Notes	
Access to site Notes	
Installation area Notes	
Additional info Notes	

Table 8.1. Checklist

<input type="checkbox"/>	No obstacles given in § 1 are in front, above or below the installation area.
<input type="checkbox"/>	Floor deviation along the length of the modules is not greater than 80 mm.
<input type="checkbox"/>	Floor compression strength meets requirements.
<input type="checkbox"/>	At least 1500 mm of clearance will remain in front of the machine after installation.
<input type="checkbox"/>	At least 500 mm (or 300 mm if w/o roof) of clearance will remain above the machine after installation.
<input type="checkbox"/>	At least 500 mm of clearance will remain on the sides of the machine after installation.
<input type="checkbox"/>	Power connection socket is located 2300 mm from the ground and behind the roof of the main module.
<input type="checkbox"/>	Power connection installation is measured and checked and meets the requirements given in § 5.1.
<input type="checkbox"/>	Network connection specification meets the requirements of § 5.2.

Table 8.2. Signature, name, date and position

Signature	
Name	
Date	
Position	