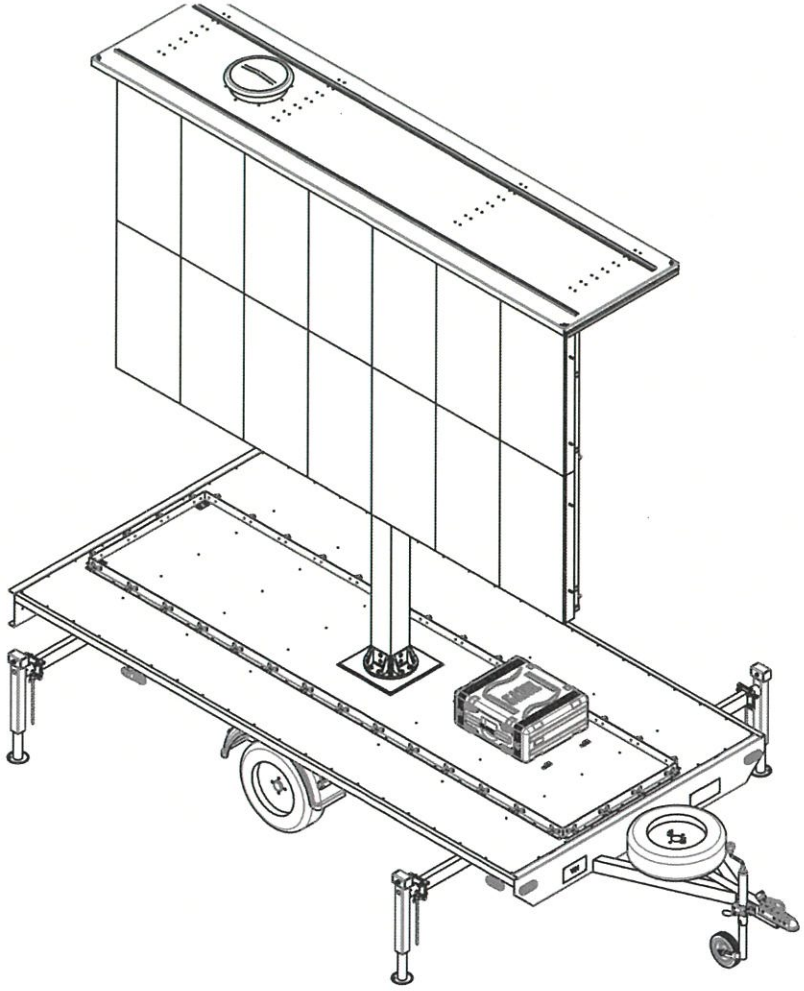


miniPlatformLED

SLMP-7lite

User Manual

Screen-LED

office@screen-led.com

Table of contents

1. Introduction.

The information contained in this manual are current as of publication. The manufacturer reserves the right to introduce design alterations to the manufactured machines that facilitate servicing and improving the quality of their operation, without making current changes to this manual.

The user manual is supplied with the machine. Before the operation, the user must familiarize with the contents of this manual and follow all recommendations herein. This will ensure safe control and trouble-free operation of the machine. The machine is designed in accordance with the applicable standards and regulations. If the information contained in this manual will prove to be confusing, seek the assistance of the manufacturer.

2. Symbols used in the manual.

Information, descriptions of danger and precautions as well as commands and orders concerning the safety of the user in the manual are indicated with the following symbol:

Non-compliance with the described recommendations poses a threat to health or life of persons operating the machine or bystanders.

Particularly important information and recommendations, the observance of which is strictly necessary, are indicated with the same symbol. Non-compliance with the described recommendations may cause damage to the machine due to improper operation, adjustment or use.

3. Intended use of PlatformLED.

The transportable video wall system allows displaying/presenting images at high resolution. It is provided with an automated and safe assembly and disassembly at a display site by two trained people who have familiarised with this manual. The video wall is made up of a mobile platform with installed power supply, unfolding, lifting and stabilisation systems of the video wall. In addition, the video wall has a rotating mechanism and a control room. The video wall can be powered via an extension cord. A power generator is provided as option. The unit can be unfolded and run both, indoors and outdoors.

The unit has been designed based on international standards harmonized with the 2006/42/EC Directive. The documentation prepared for the unit is fully compliant with the requirements of Annex VII of the 2006/42/EC Machinery Directive.

The Screen-LED video wall is used to display/present images during major events, artistic performances and multimedia shows. It is designed to make a message of artists to the public visually attractive.

NOTICE: The unit is not intended for permanent display without operators.

Optionally the video wall can be equipped with devices providing continuous operation without constant supervision.

The following is forbidden in the vicinity of the unit:

- Kindle open fire and fireworks;
- Store corrosive and hazardous substances;
- Drive self-propelled, construction and the like equipment;
- Organize and place mobile amusement devices with access for the public;
- The unit should be fenced off from the public with barriers at mass events, and
- Only service and maintenance procedures are permitted in the video wall engine room, other activities not related to the above are strictly forbidden.

4. Warranty conditions.

Screen-Led Doberstajn Sp. K. guarantees efficient operation of the machine if utilized according to operation and maintenance conditions described in the User Manual. The repair completion time is specified in the Warranty Card.

The warranty does not cover machine parts and components subject to wear under normal operating conditions, regardless of the warranty period. The group of these elements includes, among other:

- Towbar towing eye,
- Filters on the pneumatic system connectors;
- Wheels;
- Rubbers;
- Bearings, and
- Elements made of wood or wood-based materials.

The warranty applies only to cases such as: mechanical damage not resulting from user's fault, factory defects of parts, etc.

If the damage was caused as a result of:

- mechanical failures caused by user's fault;
- road accident;
- improper use, adjustment or maintenance, and misuse of the trailer;
- use of damaged machine;
- repairs performed by unauthorized persons, improper performance of service, and arbitrary changes in machine design

the user loses the warranty.

Modification of the machine without the written consent of the Manufacturer is forbidden. In particular, welding, boring, cutting and heating of structural elements of the machine, which directly affect safety during operation, is unacceptable.

5. Servicing.

PlatformLED set-up, video wall folding and unfolding procedures should be performed by **2 persons**!

While using the unfolded screen, the operator must control the wind speed. The maximum wind speed during operation of the PlatformLED is **15m/s**.

5.1. Location.

Unit location is a very important element in ensuring both, security and good multimedia transmission. When choosing the position and the location of the unit particular attention should be paid to:

- The surface beneath the unit must carry the load of 150kg/10cm2;
- The ground must be hard and permeable to water;
- Do not place the video wall in natural depressions that do not have rainwater drainage;
- If the soil / ground is frozen, do not set up the unit without confirmation of the proper ground conditions by a competent person;
- The unit can be set up on the ground of the required lower transmitted load of 150kg / 10cm2 using pads - supplied with the unit optionally;
- Do not set up the unit near power lines. If necessary, comply with national / local laws, if such do not apply, however, comply with permissible distances near power lines: up to 1kV - 3m, 15 kV - 5m, up to 30 kV - 10m, up to 110kV - 20m and above 110 kV - 30m. The distances are calculated horizontally from the video wall in the extreme position possible to the power line;
- When installing the unit inside premises, comply with local/national fire regulations. The fire load of the video wall is less than 500 MJ/m2, and the fire resistance is 15 min, so the unit can be used inside public buildings. The operating unit emits a lot of heat, and therefore adequate ventilation must be provided. Once the unit is fully set up, there should a free space of at least 0.5 m above the screen;
- When installing indoors, it is not allowed to install the video wall in the immediate vicinity of fire extinguishing systems placed in the ceiling, i.e. temperature sensors, fire sprinkler system;
- It is forbidden to install the unit outdoors without proper lightening earth rod. The system should be installed by an authorised installer with a Polish equivalent to a NICEIC Certificate complaint with local/national regulations. It is forbidden to continue installation and display on the unit without installing a grounding rod, which may otherwise pose electric-shock hazard leading to serious injuries and death.

5.2. Power connection.

Power supply connection must be complaint with the IEC standards IEC and protected with slow-blow fuses or miniature circuit breakers. The connection must have valid electrical system acceptance tests covering: insulation resistance and shock protection. Due to the high capacitive load in relation to earth, it is recommended that the connection socket was secured with a residual-current circuit-breaker with a minimum leakage current of 500mA. The residual-current circuit-breaker with lower trigger current may cause uncontrolled shutdowns during multimedia transmission.

When installing a video wall outdoors, residual current circuit breakers must be applied as an additional shock protection. In case of the video wall installed outdoors, lightening-protection must be applied in the form of a connection to the grounding rod. The designated connection point with the grounding rod of the video wall is the external part of the trailer base structure at towbar.

The current consumption by the unit is up to 16A.

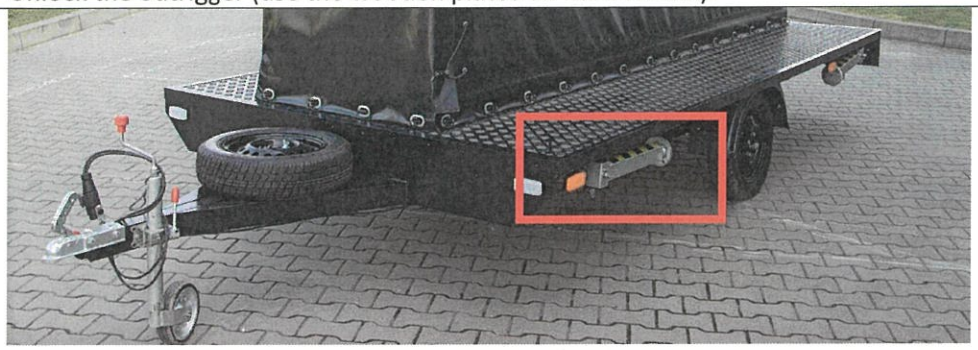
Power cord of the video wall should be so installed or protected as to minimize external damage caused by factors which may result from the following proper or improper use of the cord:

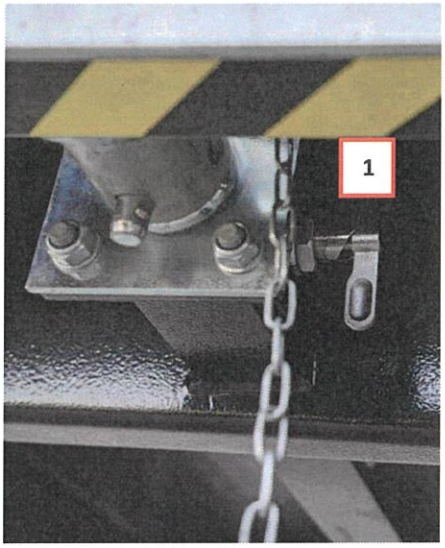
- Driving over the cord by machines or vehicles;
- Contact with other equipment and machines;
- Stacking in cable containers and outside or on cable drums and outside;
- Exposition to forces caused by acceleration and air blast in garland systems or suspended cables, and
- Exposition to excessive heat radiation.

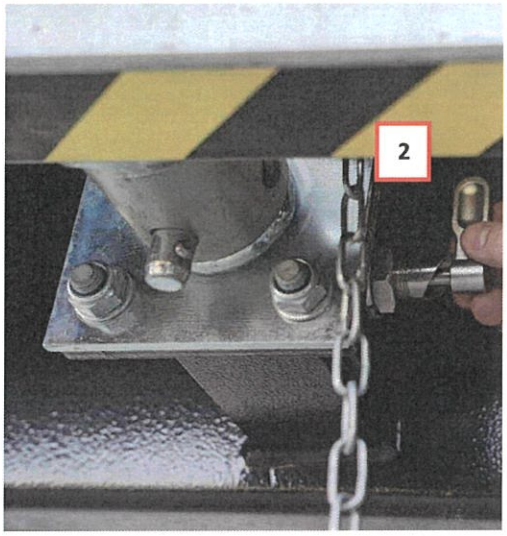
To secure the power cord, special floor cord protectors made of profiles or boards arranged imbricately should be applied in places exposed to mechanical stress. These profiles should not have sharp edges, rough spots and cuts which could come into contact with cord insulation made of non-combustible and oil-resistant material. It is recommended to lay the cord in areas with no audience, away from footpaths and roads.

6. PlatformLED set up.

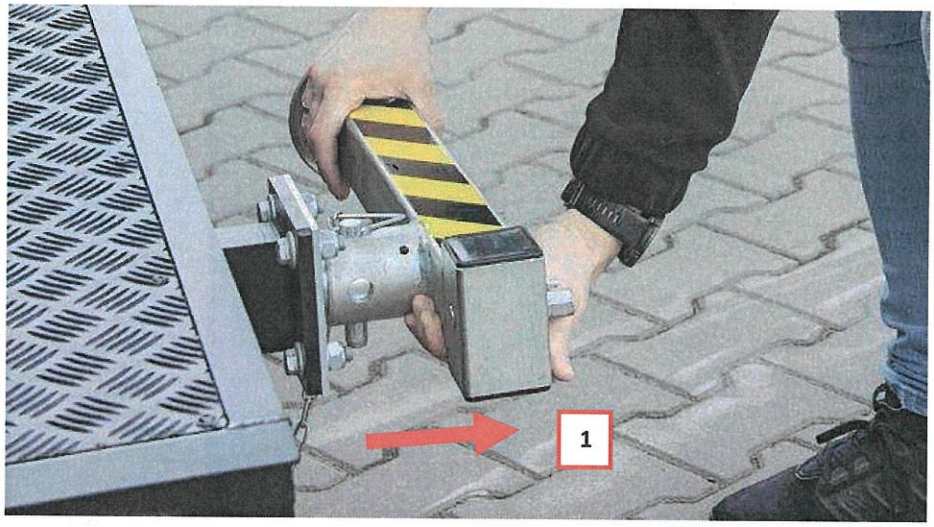
6.1. Unlock the outrigger (use the wooden plates on hard terrain).

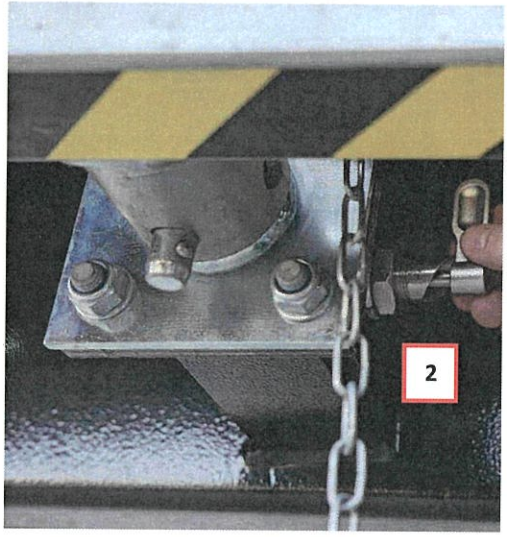


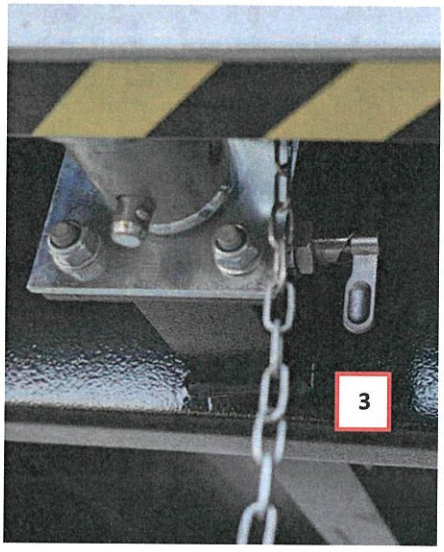




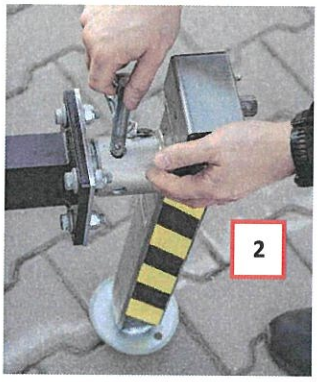
6.2. Pull out the outrigger slightly and secure the lock.



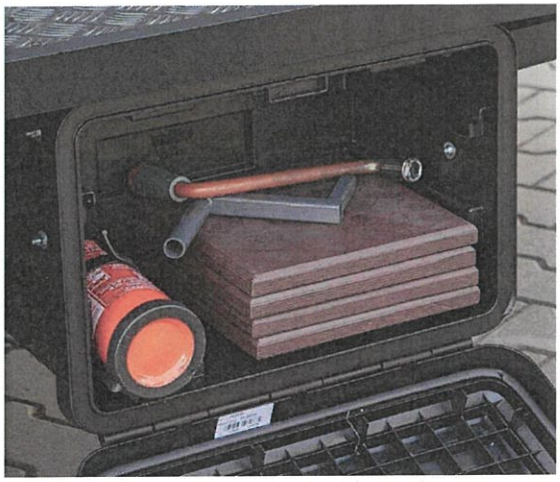




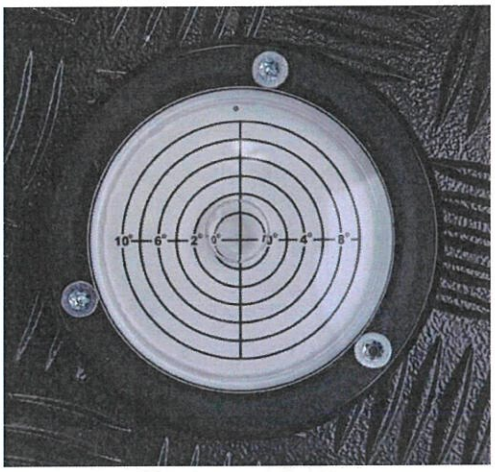
6.3. Unlock, turn and secure the support.



6.4. Lower the outrigger until the trailer is stabilized and levelled (use the wooden plates on hard terrain).

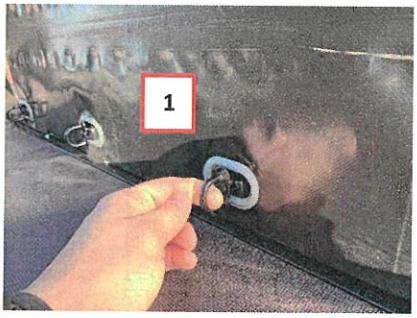


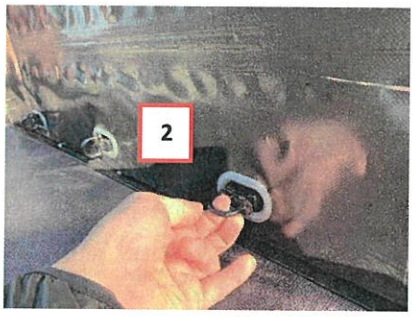
6.5. Check the level and correct it by lowering the appropriate outriggers.



6.6. Unfasten all horizontal tarpaulin handles on every corner.

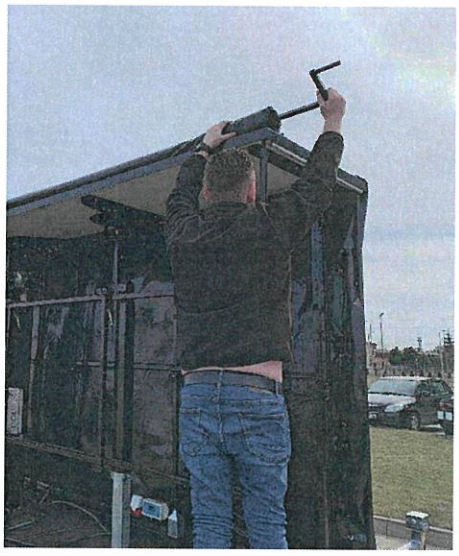
6.7. Unfasten all additional tarpaulin locks.



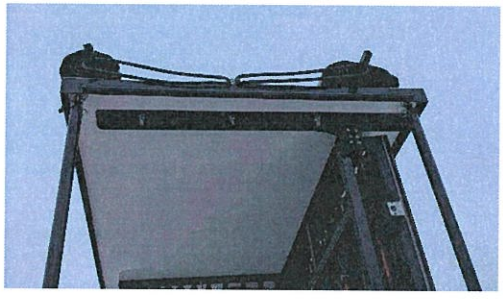


6.8. Take off front and rear and bottom tarpaulin.

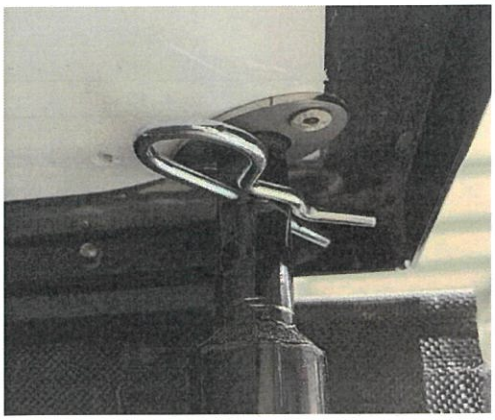
6.9. Roll the side tarpaulins by special handle and leave them on the roof.



6.10. Secure tarpaulins by elastic ropes on the front and bottom of the trailer.

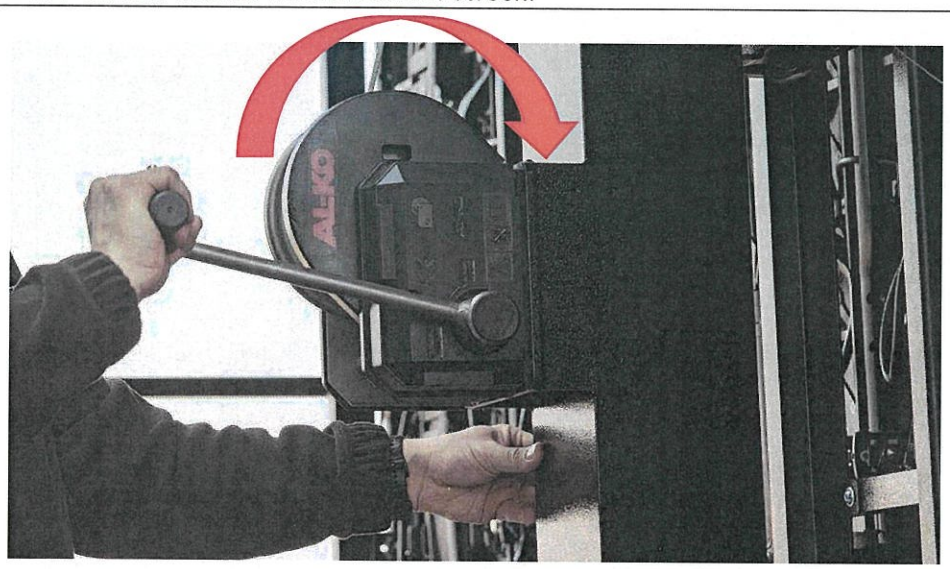


6.11. Pull out the split pins under roof and remove the rear and front tarpaulin poles.

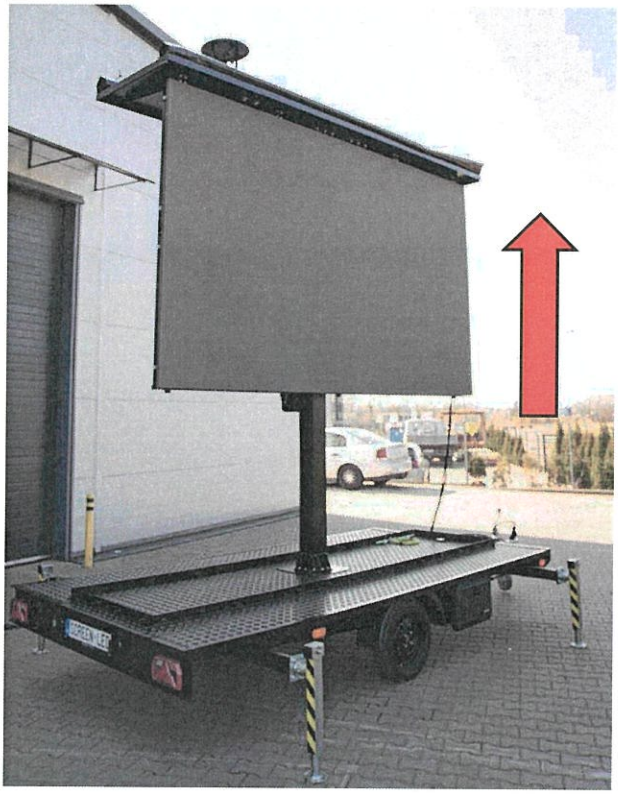


7. Screen unfolding.

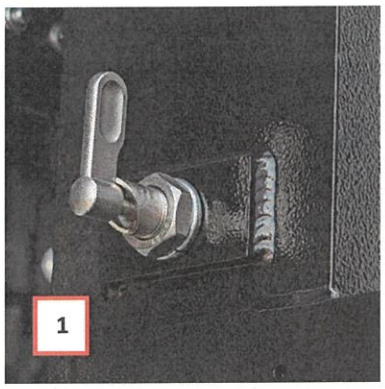
7.1. Use the manual winch to lift the screen.

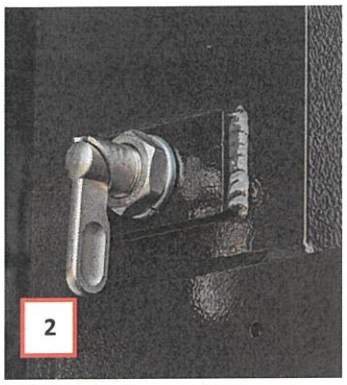


7.2. Lift the screen to the maximum mast extension.



7.3. Lock the mast using safety lock on the mast.

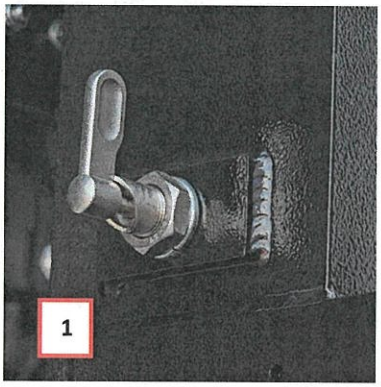


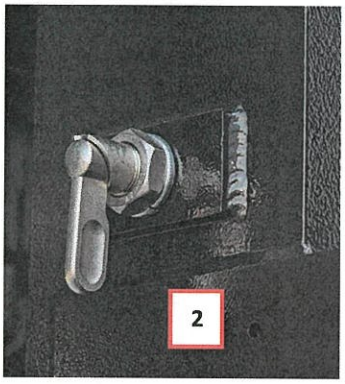


7.4. At this point you are ready to use the screen. Plug in screen power and turn on video processor.

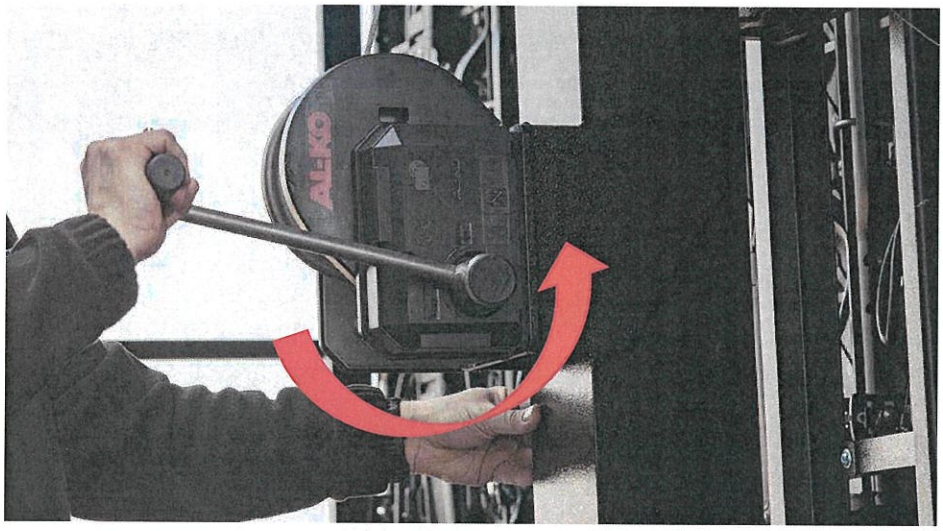
8. Screen folding.

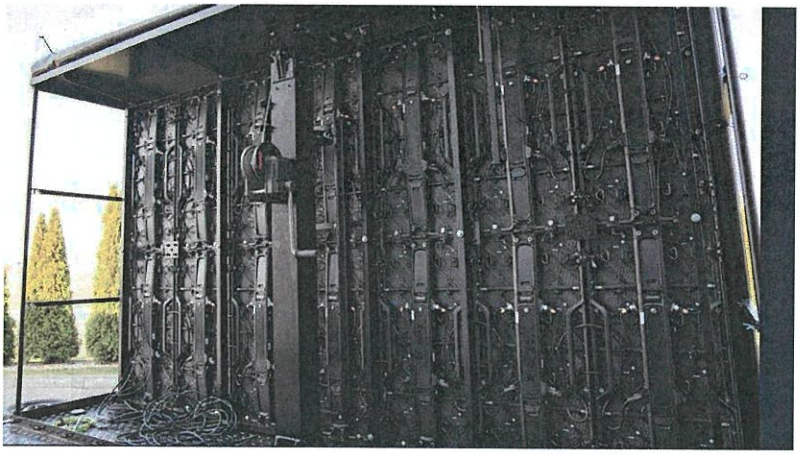
8.1. Unlock the mast.





8.2. Use the wireless controller to lower the screen until it safely sits on the rubber stoppers.



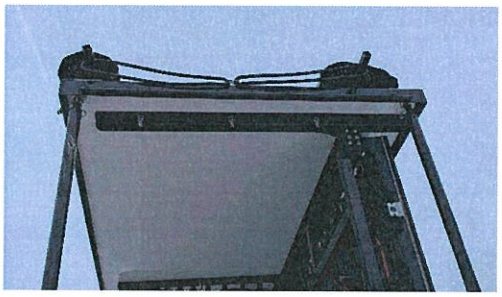


8.3. Fold the outriggers. In the reverse order to the assembly of the supports.

8.4. Insert the poles to stabilise the cover. If the poles do not fit, gently lift the screen and lower it after installing the poles.

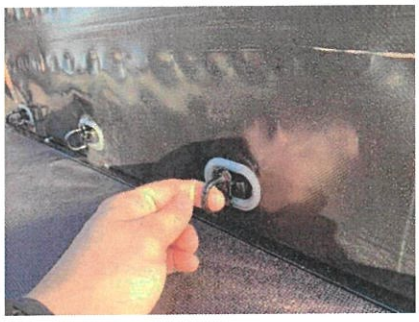
8.5. Install rear tarpaulin. The rear tarpaulin has openings.

8.6. Uninstall elastic ropes on the front and bottom of the trailer.



8.7. Unroll the side tarpaulins by special handle.

8.8. Fasten all tarpaulin locks.



8.9. Fasten all horizontal tarpaulin handles on every corner.

9. Maintenance.

Maintenance of the unit should be performed by authorized service of the unit. Operator of the unit can perform daily service and maintenance after reading this user manual.

10.1. Daily service and maintenance.

Daily service and maintenance means keeping the unit clean and orderly. No authorised service is needed for this daily service; knowledge of the unit operation is sufficient.

- Power cord – the correct position, cord abrasion, damaged plugs and sockets are unacceptable, check the mechanical protections - whether the supply switchbox is locked and secured against unauthorised access;
- Earth core connected to grounding – yellow-green (only in case of the video wall mounted on the exterior of the building) - visual condition evaluation;
- Local electrical bonding, ground wires, earthing conductors – yellow-green connecting the video wall structure with the switchbox - visual condition evaluation;
- Organisers' evaluation of the barriers preventing unauthorized access to the unit;
- Condition of the outriggers. All outriggers are properly placed and rest firmly on the ground and all outrigger pins are in their correct position;
- The video wall is horizontally set up, check this setting on a spherical spirit level;
- Condition of the load-bearing elements, i.e. visible mechanical connections are in their right places, the column secured against sliding down, mountings of the video wall panels, and
- Operational test of individual video wall devices.

10.2. Semi-annual maintenance.

The manufacturer performs a periodic inspection of the technical equipment within 3 to 6 months from the date of purchase in order to ensure the proper functioning of the unit. Details of this service are described in the warranty card supplied with the unit.

The semi-annual maintenance should be performed by authorized personnel. The basic maintenance tasks include operational tests and inspection of the unit.

- Checking the condition of elements of the whole load-bearing structure;
- Checking the condition of the electrical system of the whole unit;
- Checking the performance of all connectors and electrical apparatus;
- Checking the condition of the steel cable;
- Checking the condition of the sliding formwork in the video wall column.

A thorough inspection of the unit along with measurements of electrical resistance of insulation and shock and lightning protection should be performed once a year. The measurements must be performed according to the standard PN-HD-60364-6 low-voltage electrical installations. Checking.

Automatic power-off has been applied as protection against damage of the unit (formerly against indirect touch). No residual current devices have been applied on the video wall panels due to the continuity of transmission. The only residual current circuit-breaker that has been applied is the circuit-breaker on the socket powering the control room and lighting inside the video wall.

Local protective electrical bonding has been applied as an extra protection. The semantics in accordance with PN EN 60204-1 item 14.2.4 has been introduced for easy identification, i.e. identification of conductors by colours: BLACK - AC power circuits AC, RED - AC control circuits AC,

The following to be checked according to the standard:

- Visual evaluation of connections, wiring and electrical apparatus;
- Insulation resistance, 500 V proof voltage to be applied, the measured resistance should not be less than 1 MΩ. The insulation resistance should be measured between active conductors and between the active conductors and the protective conductor. The measurement to be made both, in power and control lines. For measuring purposes, the neutral must be disconnected from the protective conductor. The insulation values are usually much higher than the values given previously, if such values have obvious differences, further studies are needed to identify and exclude causes,
- Shock protection;
- Continuity of protective conductors including electrical bonding and main cables. This test is performed correctly with a forward current greater than 200mA and a voltage greater than 9V;
- When checking the RCCB, the maximum off time cannot be greater than 0.2s, and the current not greater than 30mA, and
- The earth resistance as a lightning protection should be measured separately in case of the video wall installed outdoors.

11. Transport and storage of product.

Always follow the traffic code regulations when driving on public roads. Do not exceed the speed limit. Always adjust the speed to road conditions. The PlatformLED can be kept outdoors provided it is covered with the tarpaulin. Secure the PlatformLED with a support wheel, and wheel chocks.

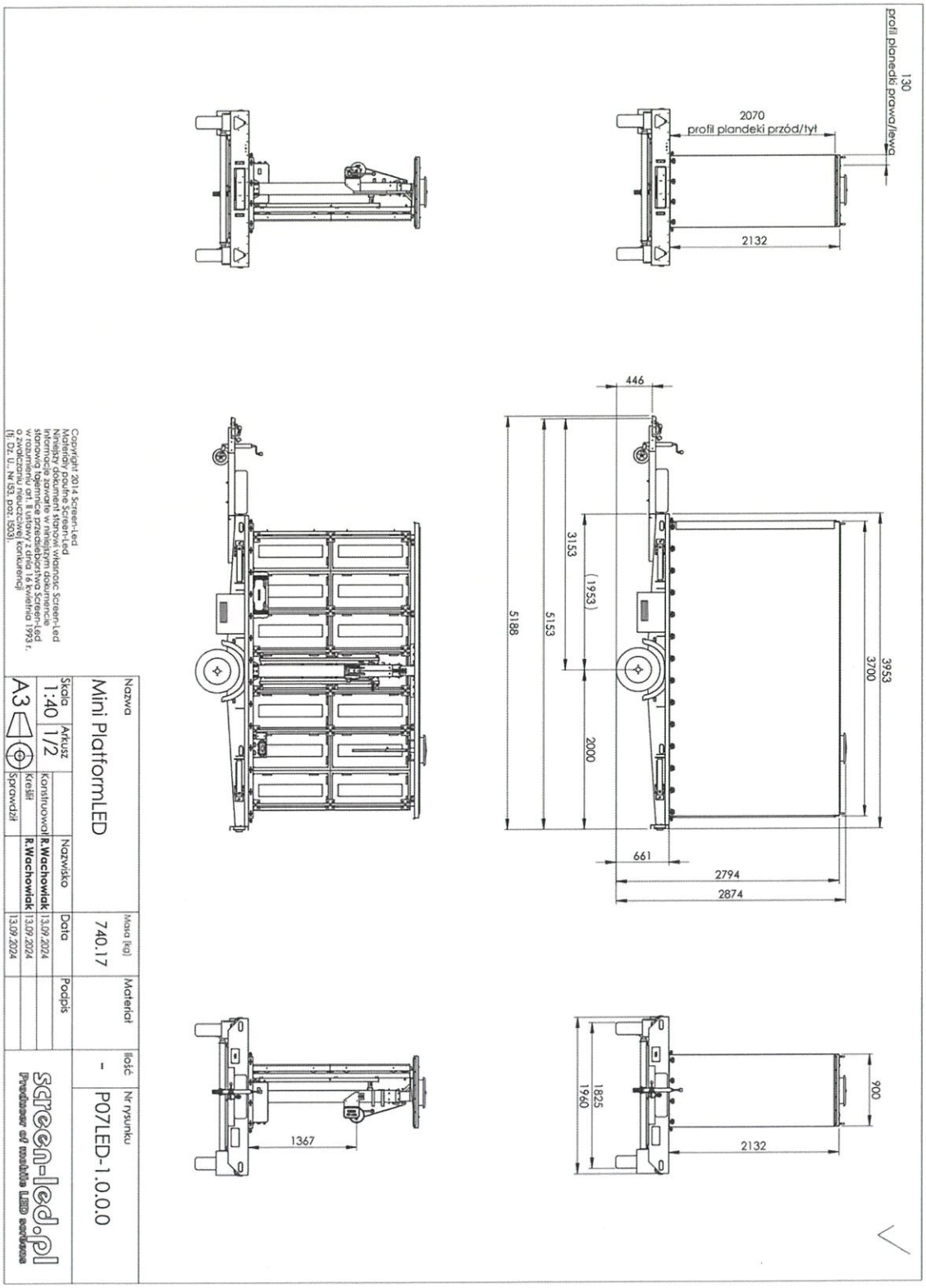
12. Disposal of the product.

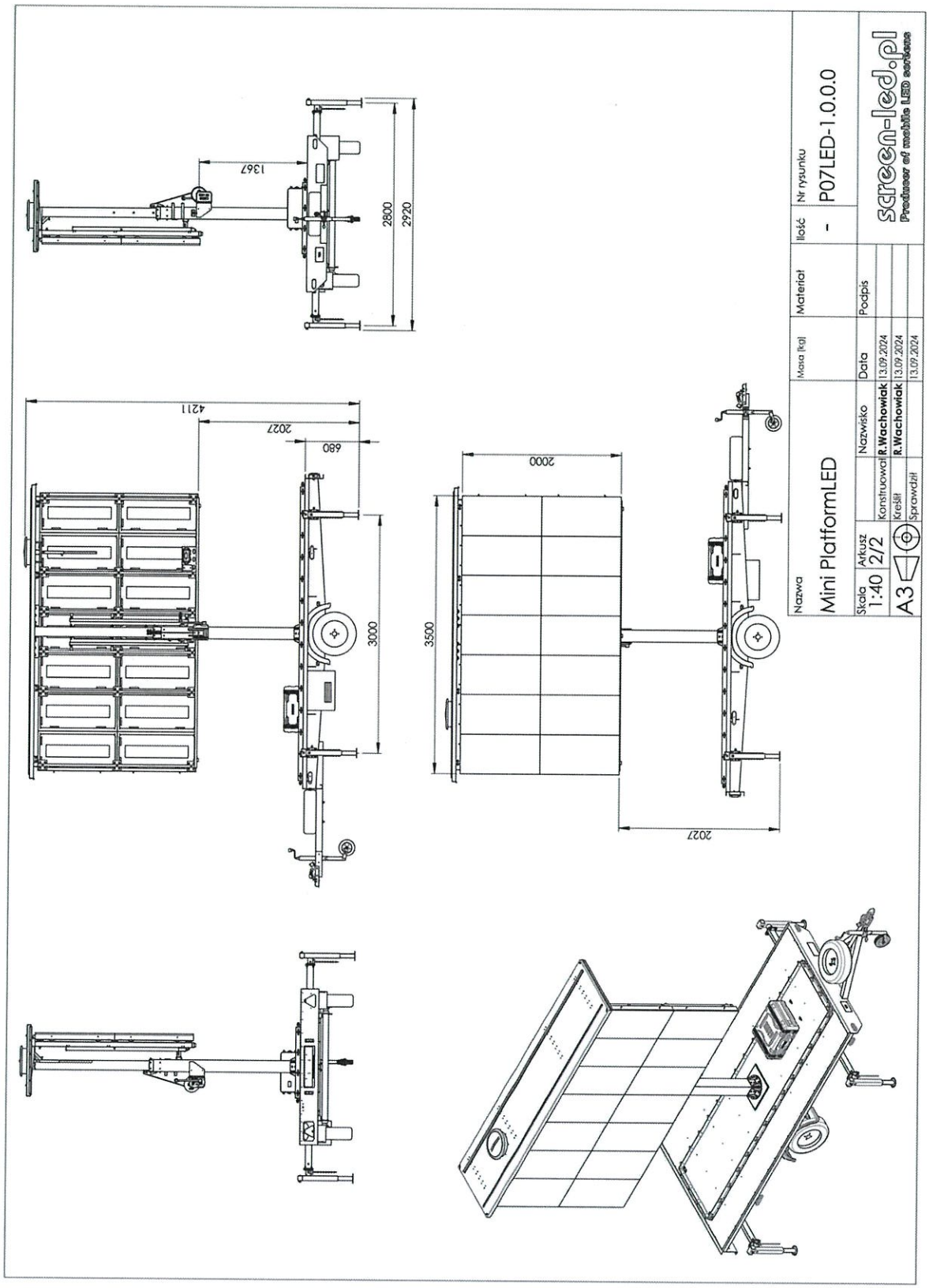
The unit is compatible with the Directive of the European Parliament and of the Council 2012/19/EU of July 4th, 2012 on waste electrical and electronic equipment (WEEE) and 2011/65/EU of June 8th, 2011 on the restriction of hazardous substances in electrical and electronic equipment (ROHS). The video wall manufactured by Screen-LED is a product with no lead alloys and other substances listed in the RoHS Directive. Due to the absence of hazardous substance, it is a machine fully adapted for use and disposal in the European Union. A specialised company should dispose the product in accordance with Article 8 of the WEEE Directive.

All components are suitable for the unit disposal. The main recyclable sub-components include:

1. Steel structure, trailer structure and video wall structure– should be separated mechanically;
2. Tyre rubber – rubber products containing synthetic rubber;
3. Printed Circuit Boards of individual video wall panels and power supplies – follow the manual of the panels' manufacturer;
4. Switchbox – standard electrotechnical waste.

13. Product specification.





Maximum wind speed	m/s	15

Allowable total weight	kg	750
Maximum design speed	km/h	70
Trailer type		Special
Electric voltage of the screen power supply	V	230

14. Spare parts.

All parts must be ordered directly from the manufacturer. The use of non-original parts from other sources may endanger life and human health, as well as cause damage to the unit.

\Declaration of Conformity

01/07/2017
(NUMBER OF DECLARATION OF CONFORMITY)

1. MANUFACTURER: **SCREEN-LED DOBERSTAJN SP. K.**
ul. Towarowa 1
88-100 Inowrocław
VAT UE: PL5562766307
screen-led.com

2. NAME OF PRODUCT: **MINIPLATFORMLED SC**
(NAME, TRADE NAME, TYPE, VARIETY, GENRE, CLASS)

3. PURPOSE AND SCOPE OF PRODUCT: **TRAILER WITH LED SCREEN,**
PURPOSE: RENTAL, ADVERTISEMENT
(ACCORDING TO DIRECTIVE)

4. ACCORDING TO DIRECTIVES: **DIRECTIVE 2006/42/WE**
DIRECTIVE 2014/30/UE
(ACCORDING TO DIRECTIVE)

I HERBY DECLARE THAT MOBILE LED SCREEN MANUFACTURED BY SCREEN-LED TYPE MINIPLATFORMLED SC FULLY MEETS FUNDAMENTAL SAFETY REQUIREMENTS AND HEALTH PROTECTION BOTH IN ASSUMPTIONS AND IN CONSTRUCTION AND IT IS ADMITTED TO EUROPEAN UNION MARKET.

DECLARATION OF CONFORMITY EXPIRES WHEN ANY MODIFICATIONS OF PRODUCT ARE MADE WITHOUT WRITTEN CONSENT OF MANUFACTURER OR IN CASE OF LACK OF PERIODICAL INSPECTIONS AND MAINTENANCE REVIEW.

Technical documentation prepared by:
Screen-LED Doberstajn Sp. K., ul. Towarowa 1, 88-100 Inowrocław

Radomir Doberstajn

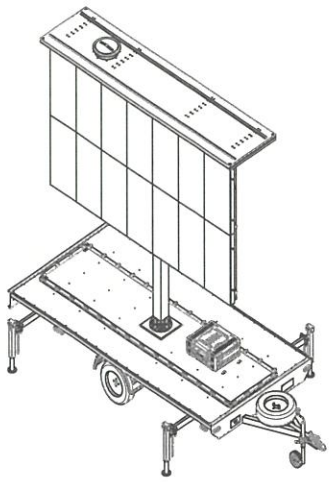
komplementariusz
screen-led Doberstajn spółka komandytowa

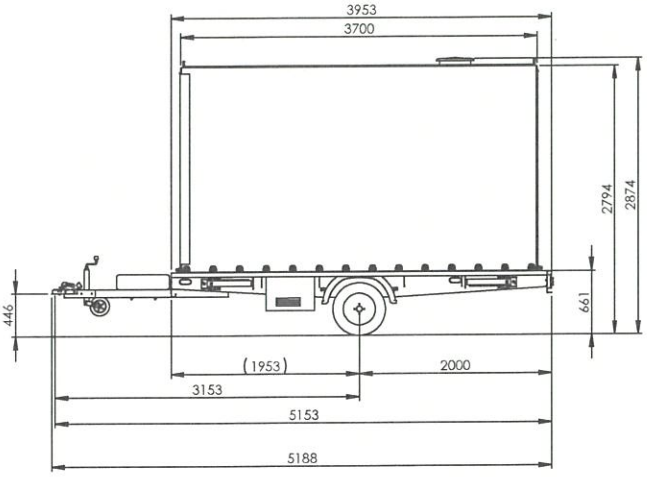
Inowrocław, _____

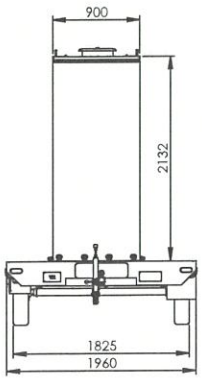
Radomir Doberstajn (date and signature)

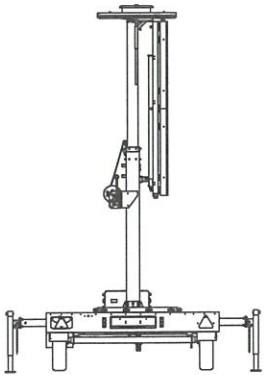
TRAILER SPECIFICATION

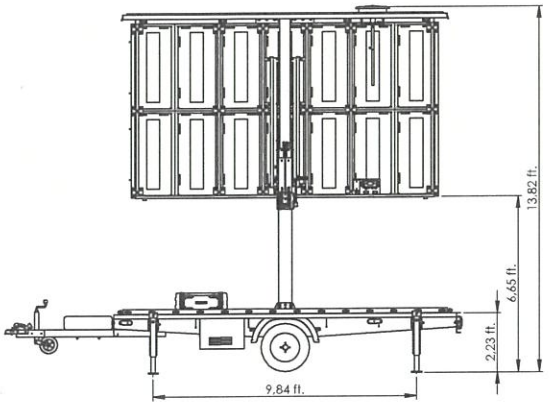
miniPlatformLED **SLMP7-lite**

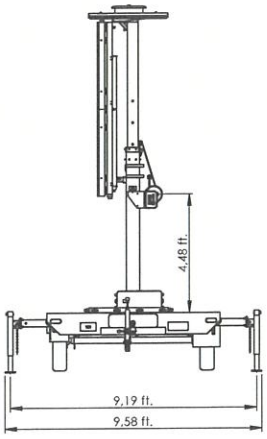












DIMENSIONS FOR TRANSPORT

Lenght with drawbar	3,95 m + 1,23 m drawbar
Lenght without drawbar	3,95 m
Width	1,96 m
Height	2,87 m

DIMENSIONS WITH UNFOLDED SCREEN

Width	2,92 m
Lenght	3,95 m + 1,23 m drawbar
Height to top of the screen	4,2 m
Height to bottom of the screen	2 m

WEIGHT

GVWR weight	750 kg
Real weight with the screen	≈ 750 kg
Real weight without the screen	≈ 550 kg

LED SCREEN DETAILS

Area	7 m
Width	3,5 m
Height	2 m
Screen	with pixel P3.9 or your LED screen
Resolution P3.9	896 x 512 px
Videoprocessor	Novastar VX4S

OTHER DETAILS

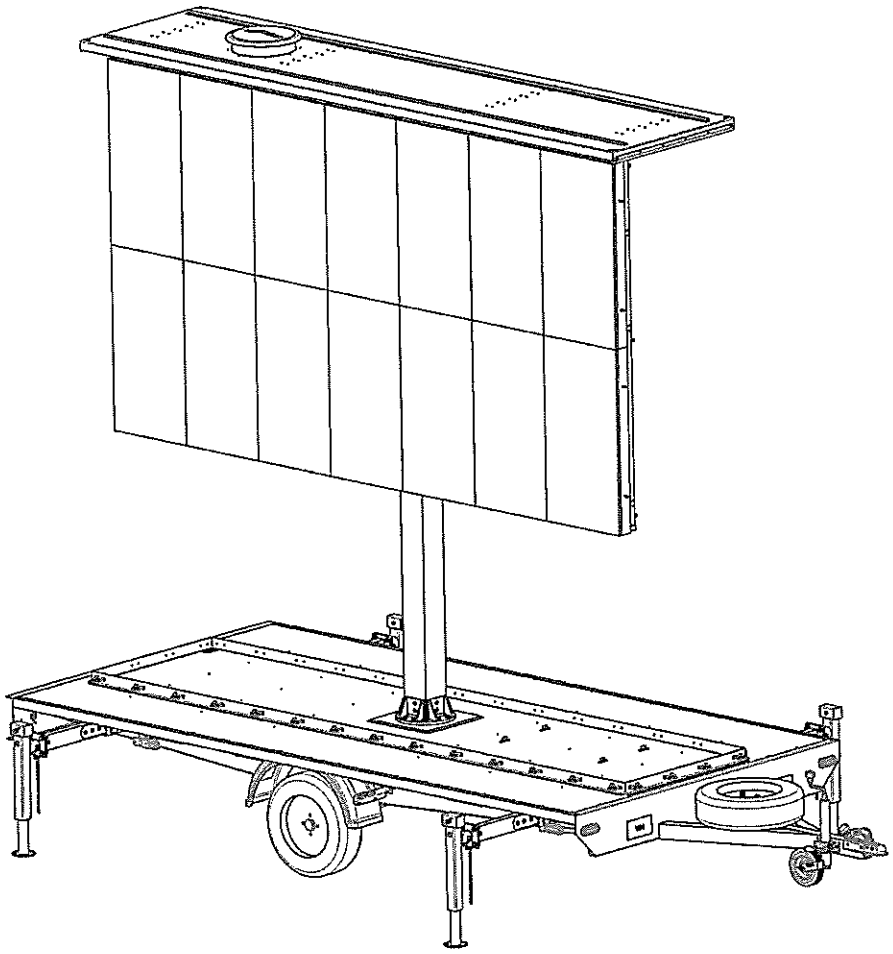
Wind rating	20 m/s (72 km/h) 15 m/s for TÜV norms
IP rating	IP65 (fully waterproof)
Road approval	EU road approval
Axles	single axle
Mast control	wired controller
Structure	aluminium
Warranty	3 years

POWER

Power socket	2 x 230V 16A
Screen turned on Max. power consumption	≈ 4,7 kW
Screen turned on Avg. power consumption	≈ 1,4 kW
Screen mast Power consumption (lifting, rotation)	1,3 kW
Other equipment Power consumption (wind sensor, video processor etc.)	max. 0,5 kW

Calculation of static

Trailer PlatformLED 7m^2



Inowrocław, P07

09.10.2025

1. Introduction

There is a description in this document of analysis performed to check operating limitations during use of this machine:

- Determination of critical and safe (stable) wind speed and reactions in supports.
- Determination of wind speed limits as a result of stress in construction

Calculations were performed based on the analytical method and FEM (Finite-element method) method.

2. Calculations

Two cases of load were considered due to screen setting, and wind direction (Fig. 2.1).

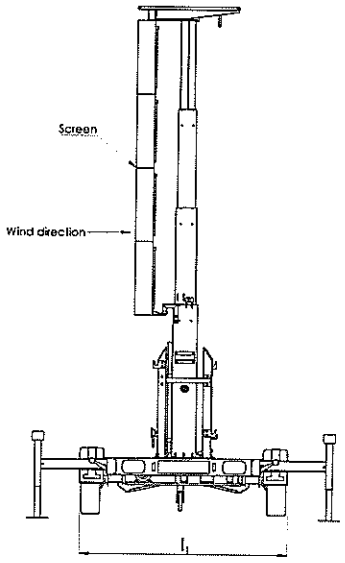


Fig. 2.1. Case of loads due to wind direction and screen setting.

2.1 The first load case - wind blowing from the side

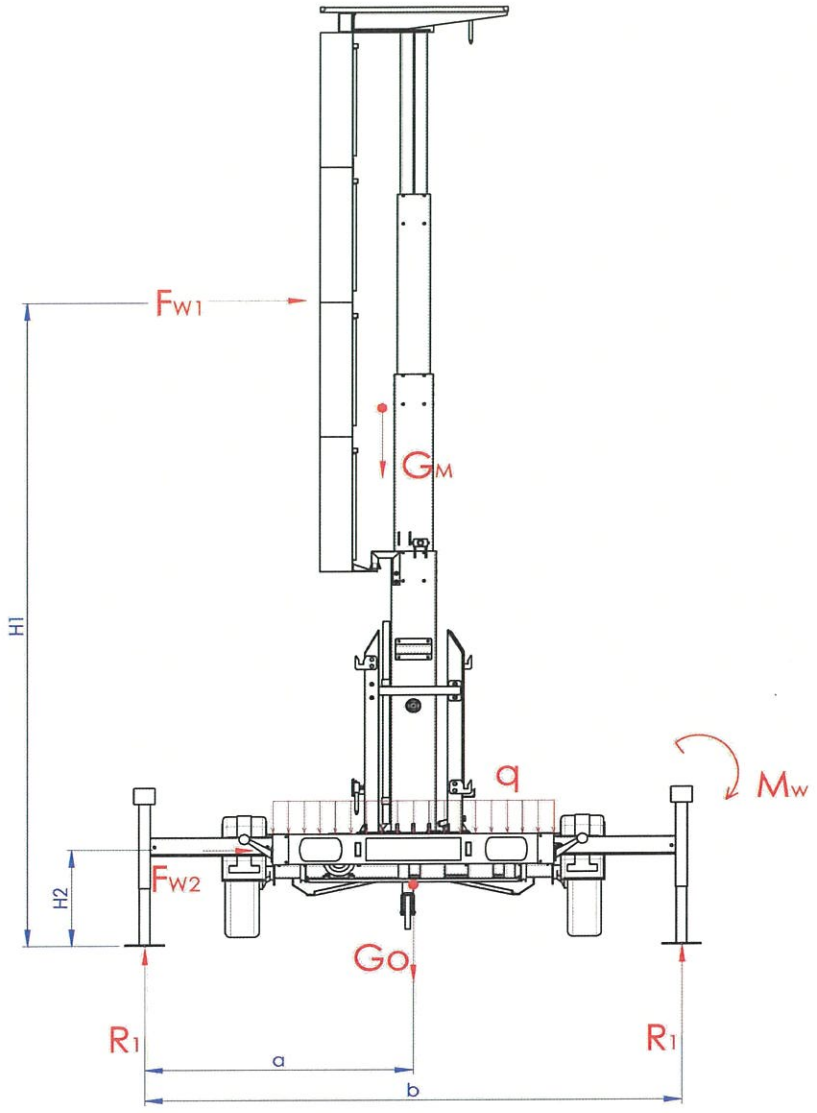


Fig. 2.2. The first load case-distribution of forces and torques.

Drawing reference:

R_1- reaction in the first support(windward)
R_2- reaction in the second support(leeward)
G_O - axle weight
q - construction weight (frame, container, instrumentation)
G_M - mast weight
F_{W1} - wind force on the screen
F_{W2} - wind force on the side surface of the container
M_W - resultant torque of wind

Calculation constants	
Acceleration due to gravity [m/s^2]	9,81
Partial safety factor	1,35
Wind safety factor	1,2
Aerodynamic coefficient	1,8
Friction μ (sand,gravel-wood)	0,65
Friction μ (wood-concrete)	0,6
Field point for steel 355 fy [MPa]	355
Safety factor (yield) γ	1,1

Weight of components and generated loads			
	Weight [kg]	Load [N]	Shown in Fig. 2.2.
Mast+screen	310	3041,1	G_M
Frame+container+instrumentation	380	3727,8	p
Axle	55	539,55	$2G_O$
Catch	5	49,05	G_c
The total weight of the trailer N_k	750	7357,5	

Dimensions [mm] (Fig. 2.2)	
a	1400
b	2800
l2	3700
H1	3027
H2	380
H3	1600

Surfaces	
Screen A_{ref1} [m^2]	7
Side surface of the container A_{ref2} [m^2]	0,2
Screen retracted	7

Wind loads according to EN 13814:

$$F_w = q_{eq} \times c_f \times A_{ref}$$

$$v_{ref} = 15 \frac{m}{s} \rightarrow q_{eq} = q_{req} \times ce(ze) \times c_d = 0{,}2 \frac{kN}{m^2}$$

$$v_{ref} = 28 \frac{m}{s} \rightarrow q_{eq} = q_{req} \times ce(ze) \times c_d = 0{,}35 \frac{kN}{m^2}$$

Verification of stability:

The safety against overturning according to EN 13814:

$$\Sigma\gamma M_{St,k} \geq \Sigma\gamma M_{K,k}$$

$$\Sigma\gamma M_{St,k} = a \cdot (G_M + 2G_0 + G_c + q)$$

= 1400 · (3041,1 + 3728 + 540 + 49,1) / 1000000

= **10,3** *kNm*

LED screen ON

$$\Sigma\gamma M_{K,k} = \gamma\Sigma F_W \cdot H_i$$

= 1,2 · (0,2 · 1,8 · 7 · 3027 / 1000 + 0,2 · 1,8 · 0,2 · 380 / 1000)

= **9,2** *kNm*

LED screen OFF

$$\Sigma\gamma M_{K,k} = \gamma\Sigma F_W \cdot H_i$$

= 1,2 · (0,35 · 1,8 · 7 · 1600 / 1000)

= **8,5** *kNm*

Condition of stability			
LED screen ON, Vref=15m/s	10,3	≥	9,2
LED screen OFF, Vref=28m/s	10,3	≥	8,5

The safety against sliding according to EN 13814:

$$\Sigma\gamma\mu N_k \geq \Sigma\gamma H_k$$

$$\mu = 0{,}65$$

$\Sigma\gamma\mu N_k =$ 0,65 · 7358 = **4,8** *kN*

$$\mu = 0{,}6$$

$\Sigma\gamma\mu N_k =$ 0,6 · 7358 = **4,4** *kN*

LED screen ON

$\Sigma\gamma H_k =$ 1,2 · 0,2 · 1,8 · (7 + 0,2)
= **3,11** *kN*

LED screen OFF

$\Sigma\gamma H_k =$ 1,2 · 0,35 · 1,8 · 7
= **5,3** *kN*

Condition safety against sliding				
LED screen ON, Vref=15m/s, μ=0,65	4,8	≥	3,1	
LED screen OFF, Vref=28m/s, μ=0,65	4,8	~~≥~~	5,3	Additional ballast of 150 kg required
LED screen ON, Vref=15m/s, μ=0,6	4,4	≥	3,1	
LED screen OFF, Vref=28m/s, μ=0,6	4,4	~~≥~~	5,3	Additional ballast of 150 kg required

The structural strength was calculated against load case from wind vref=15m/s and LED screen ON (like in Fig 2.2) using FEM.
Load combinations and allowable stress was determined according to EN 13814.

3. Conclusion

In this study there has been performed an analysis of the trailer with the screen against various operating conditions in order to validate the stability of the construction. Calculations, both analytical and finite-element method (FEM), have been implemented for that purpose.

- The trailer can be operated safely at the wind speed up to 15m/s;
- The trailer must be additionally ballasted with 150 kg when the LED screen is switched off (screen lowered), for wind speeds of 28 m/s.