iDOL 65 Camera

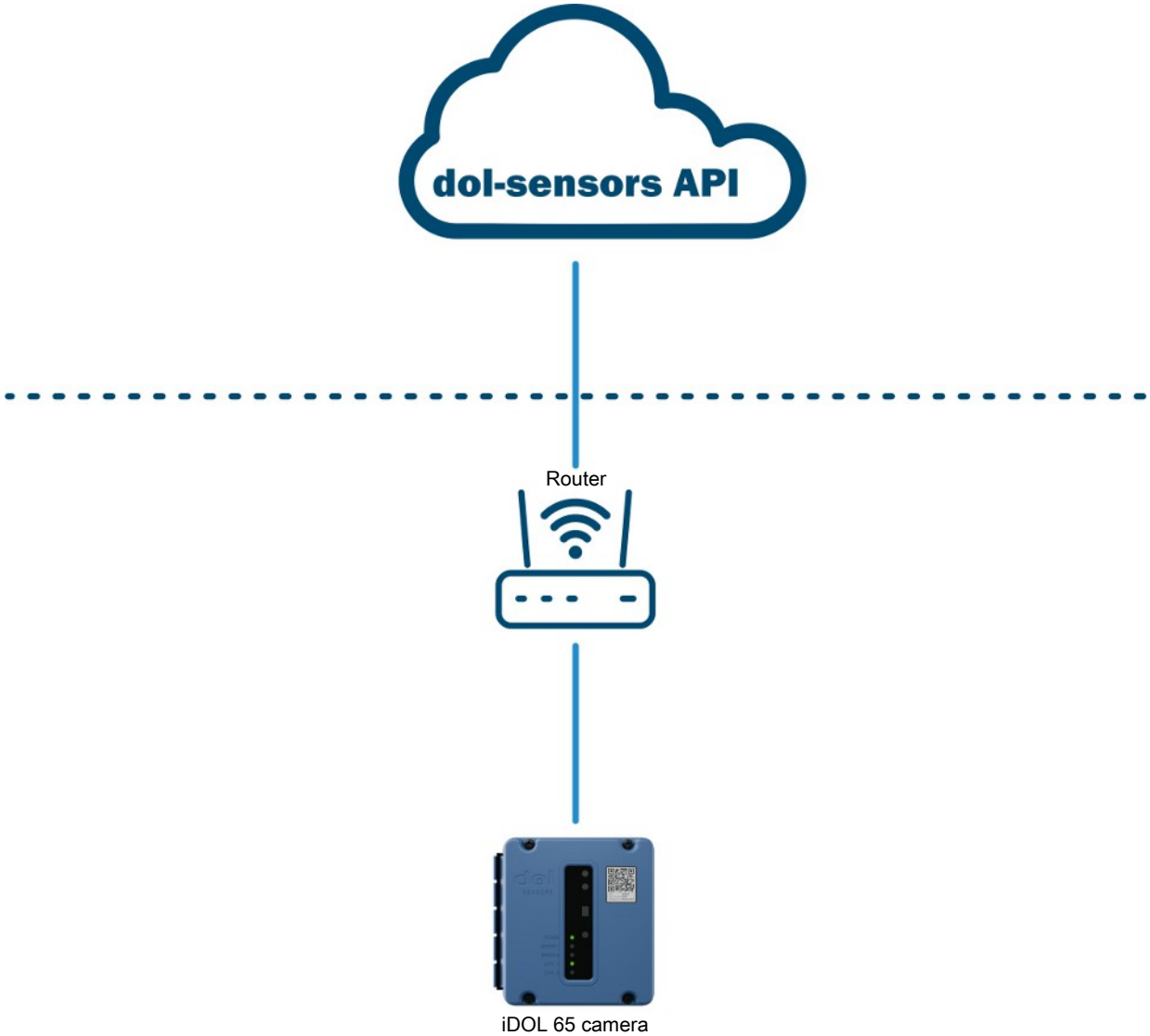


1 Product Description iDOL 65

iDOL 65 calculates the weight of the finishers. iDOL 65 uses a camera to calculate the weight based on the size of the pig, i.e. height, width, length.

iDOL 65 weighing precision has been tested and verified on piglets and pigs for slaughter in the weight range from 7-110 kg.

This manual covers the mounting and electrical installation of theiDOL 65 camera. The manual provides the user, installer and electrician with the basic knowledge of how to mount and connect the iDOL 65.



2 Product survey

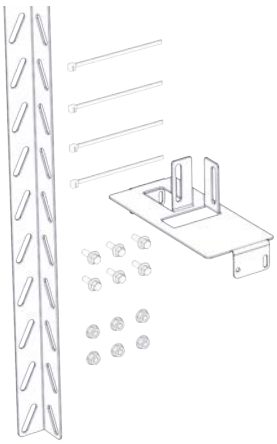


140324 iDOL 65 camera

iDOL 65 camera calculates the weight of slaughter pigs. iDOL 65 uses a 3d camera to calculate the weight based on the size of the pig.

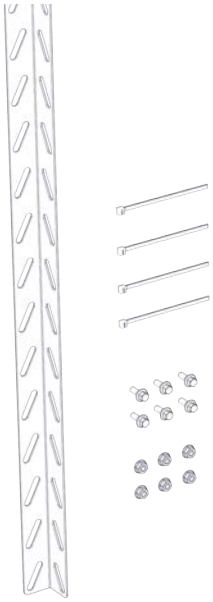
Supplied with plastic glands, sealing plugs, split seals, and mounting bracket screws.

2.1 Accessories



140322 iDOL 65 mounting kit base

Used when installing iDOL 65 camera in stables with ceiling height between 2400 mm and 2700 mm.
The kit consists of mounting brackets, mounting profile w/holes and iDOL 65 screw set.



140323 iDOL 65 camera mounting kit next

Used when mounting iDOL 65 camera with ceiling height above 2700 mm.

The kit consists of mounting profile w/holes and iDOL 65 screw set.

3 Mounting

iDOL 65 should be placed at an exact height and relative to the housing equipment in the pen. Mount the camera above a feed dispenser at dry feeding and above a nipple drinker at wet feeding.

The floor of the area covered by the camera (1700 x 3000 mm) must be horizontal.

The minimum ceiling height is 2390 mm. There must be no pipes, wires, or anything else that can block the field of view of iDOL 65.

The camera must be stable. Both during installation and operation, movements and vibrations must be minimized.

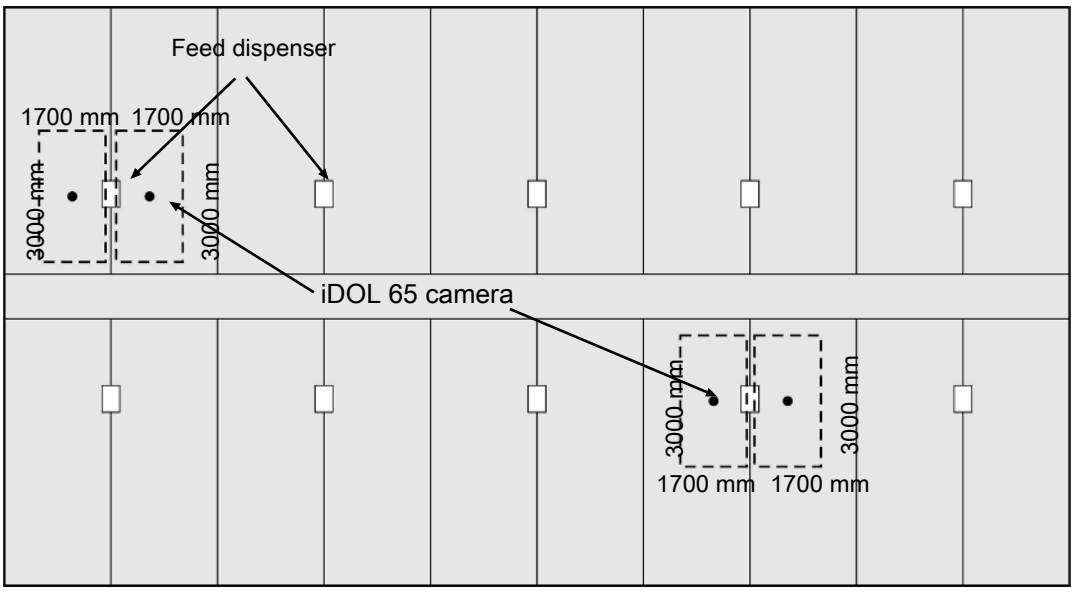


Figure 1: Example of placing 4 cameras in a dry feeding section.

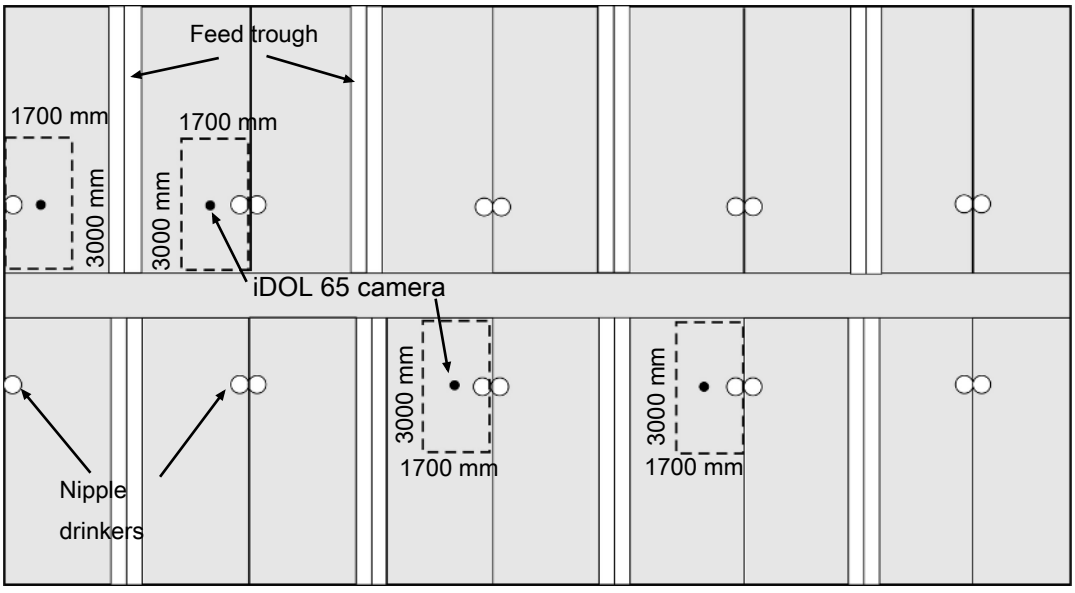


Figure 2: Example of placing 4 cameras in a wet feeding section.

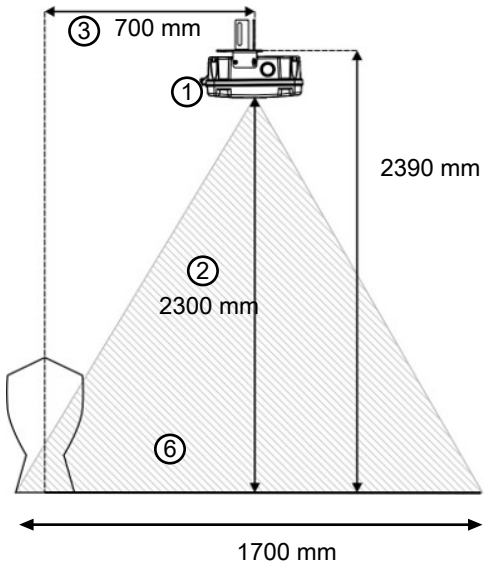
It is recommended to use a minimum of 4 cameras distributed over 4 pens.

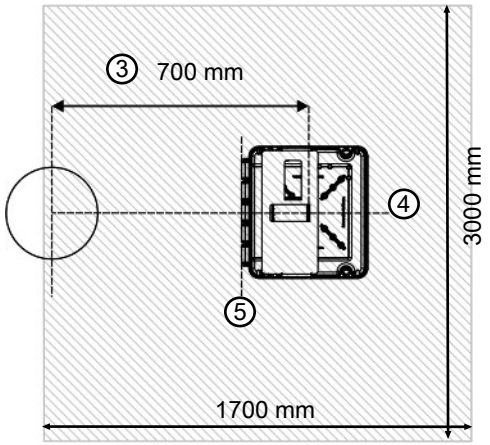
It is recommended that at least 10 % of the pigs in a section are covered by cameras to obtain a representative average for that section.

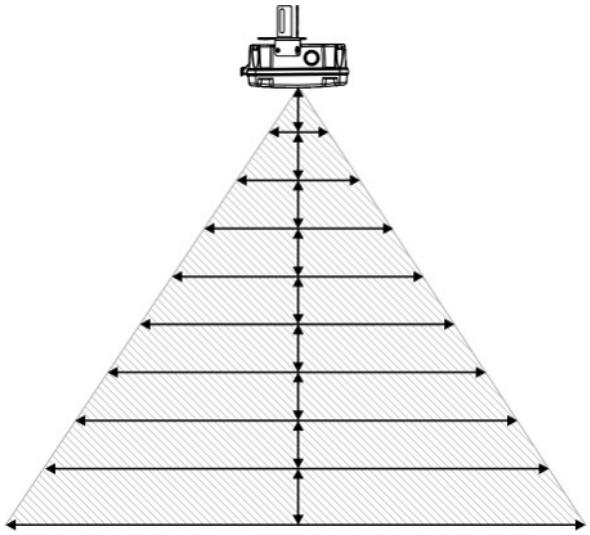
Criteria for correct iDOL 65 installation.

No.:	Description:	Value:	Tolerance
1	The box front must be facing the pen floor. The camera must be hung horizontally, parallel to the floor.	0°	+/- 4°
2	Height above the floor (measured from the front of the box)	2300 mm	+/- 150 mm
3	Distance from pen wall / center of the feed dispenser	700 mm*	-
4	The box must be centered in relation to the center of the feed dispenser	0 mm	+/- 300 mm
5	The hinge of the box must face the feed dispenser and must be parallel to the partition wall	0°	+/- 10°
6	The camera's field of view, the shaded area, must not be blocked by pipes, wires or anything else		

*Depends on installation height. Make sure that the camera's field of view covers the full pig when it is drinking or eating. See below table for field of view estimates.



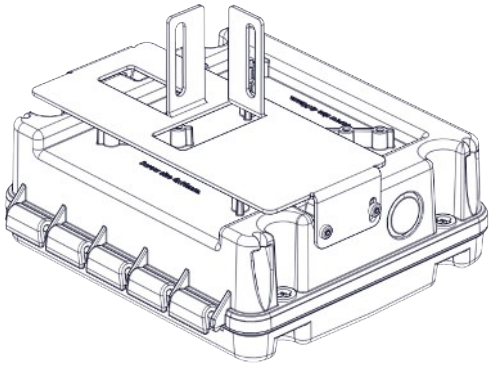




Check the camera's field of view in the table below if you need to position the camera close to objects hanging from the ceiling.

Distance under camera (mm)	Width X (mm)	Length Y (mm)
250	185	326
500	370	652
750	554	978
1000	739	1304
1250	924	1630
1500	1109	1956

1750	1293	2283
2000	1478	2609
2300	1700	3000



The iDOL 65 mounting bracket is mounted using the screws supplied.

Figure 3: iDOL 65 mounting brackets.

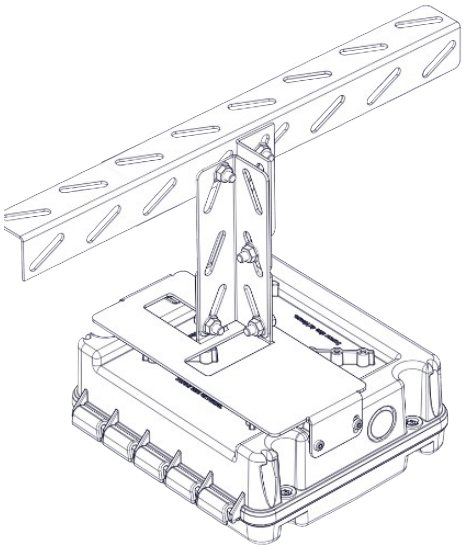


Figure 4: Mounting example



For correct mounting height and stability, mounting kit iDOL 65 can be used.

Figure 5: Example of mounting with iDOL 65 mounting kit

4 Electrical connection



Installation, servicing, and troubleshooting of all electrical equipment must be carried out by qualified personnel in compliance with the applicable national and international standard EN 60204-1 and any other EU standards that are applicable in Europe.

The installation of a power supply isolator is required for each motor and power supply to facilitate voltage-free work on the electrical equipment. The power supply isolator is not included.

4.1 Electrical Installation

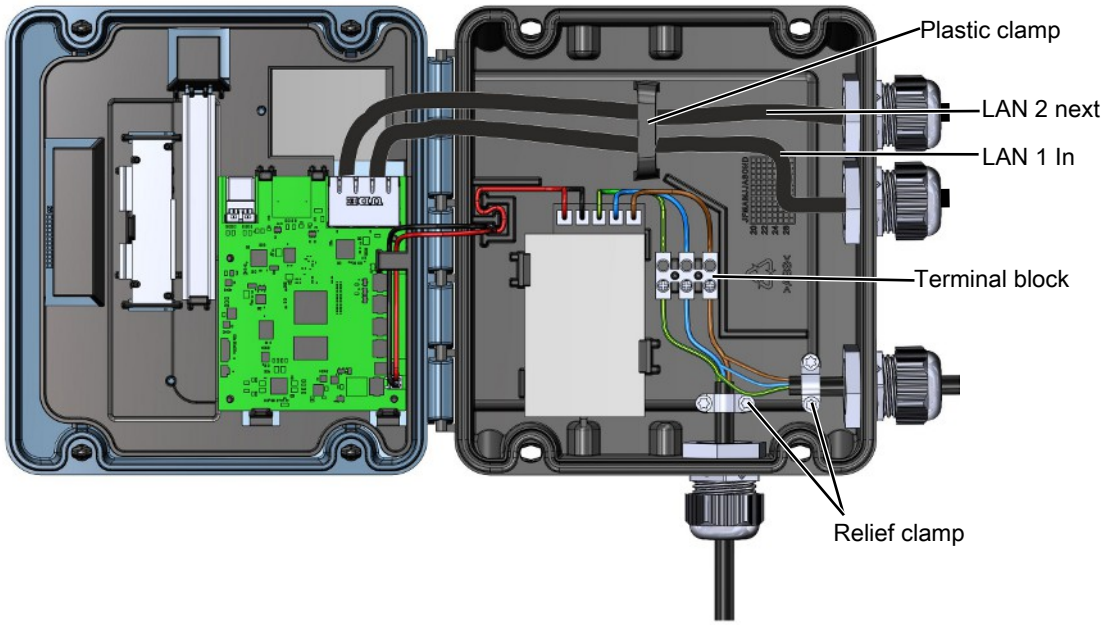


Figure 6: Connection in the iDOL 65 box

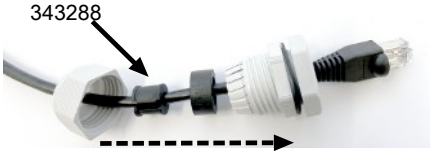
Mains supply

The box is prepared for forwarding the supply from one box to the next.

Secure the supply cable with the relief clamp and connect it to the terminal block as illustrated.

Color codes:

- Yellow/green (PE) for ground
- Blue (N) for neutral
- Brown (P) for phase



The enclosed cable glands can be used for cables with an outer diameter of 6 to 13 mm.

If thinner cables with an outer diameter of 4-6 mm are used, the enclosed split sealing ring (343288) must be mounted, see picture to the left.

Network

iDOL 65 can be connected serially. That is, the network from one iDOL 65 can be routed to the next.

Secure the network cable under the plastic clamp with the supplied cable ties and connect to LAN 1.

- LAN 1 is used in the direction of the router.
- LAN 2 is used for the subsequent iDOL 65 in the ”series”.

Minimum Internet connection required per device: 1 Mbps download / 0.5 Mbps upload.

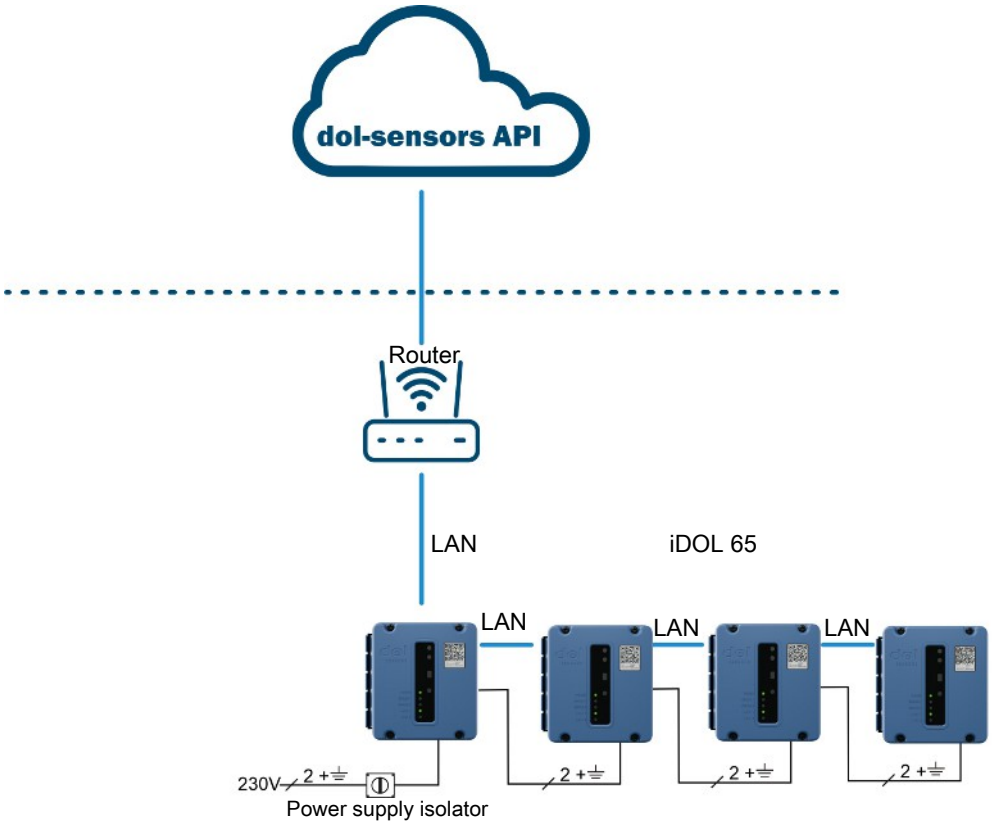
Note: If one iDOL 65 is offline for a while, data will be sent to the cloud when the iDOL 65 is back online.

iDOL 65 must be able to communicate with the following endpoints (outgoing communication) for the camera to function properly.

Description	DNS / IP	Port	Protocol
IOT Hub	dol-DigitalServices-Omni-Production-Io-THub.azure-devices.net/*	8883	TCP
DSP	global.azure-devices-provisioning.net/*	443	TCP
Google DNS	8.8.4.4 and 8.8.8.8	53	UDP
Device Registration	https://dol-provisioning-prod.azurewebsites.net/api/provisioning/*	443	TCP
Blob Storage	https://dolfirmware.blob.core.windows.net/*	443	TCP
Blob Storage	https://blobomniprod.blob.core.windows.net/*	443	TCP
Blob Storage	https://certomniblob.blob.core.windows.net/*	443	TCP
NTP	*.pool.ntp.org	123	UDP
NTP	time*.google.com	123	UDP
Device provisioning service	global.azure-devices-provisioning.net	8883	TCP
Certificate verification	ocsp.digicert.com	80	TCP
Certificate verification	crl3.digicert.com	80	TCP

*URLs are wildcards

4.1.1 Cable plan



5 Camera status and troubleshooting



LED	POWER	ERROR 1	ERROR 2
Start-up			
Self-test (60 sec.)	ON	ON	ON
Starting up	Flashes		
Troubleshooting			
No Internet connection	Flashes		
Calibration required			Flashes
Calibration activated			ON
Camera dirty		ON	
Operation status			
Started / connected to cloud	ON		
Firmware update ongoing	Flashing quickly		

LAN 1 / LAN 2 LED is ON/flashes when there is an active connection through the network to another unit, for example, an iDOL 65 or a router.

6 Maintenance

iDOL 65 must be cleaned at a minimum after each batch or as needed, as dust and flies, etc. can block the camera's field of view (resulting in blurred images and thus fewer weighing). LED **error 1** lights up solid red when the camera cannot make weighing and cleaning is required. Max. 20 minutes after the cleaning of the camera lens has been completed, LED **ERROR** 1 will turn off.

Make sure not to move the camera during cleaning. If iDOL 65's position is changed, the camera must be recalibrated.

6.1 Cleaning

Clean iDOL 65 with:
- Water with a small amount of dishwashing liquid
- Soft brush or a cloth

Do not use:
- High-pressure cleaner
- Highly compressed air
- Window cleaning spray
- Solvents such as acetone, benzene, Carbon Tetrachloride and the like
- Corrosive/caustic agents
- Alcohol-based disinfectants

Wipe the front dry after cleaning.

6.2 Recycling/Disposal



The label indicates that the product must not be disposed of as general refuse disposal and must be treated as electronic waste.



The label indicates that the product is suitable for recycling.

It must be possible for customers to deliver the products to local collection sites/recycling stations in accordance with local instructions. The recycling station will then arrange for further transport to a certified plant for reuse, recovery and recycling.

7 Technical data

Electrical		
Supply voltage	VAC	100 - 240
Frequency range	Hz	50/60
Max. power consumption	W	13
Cable	mm^2	3 x 0.75
Mechanical		
Cable gland M25	Pcs.	4
Network		
Network interface		2 x 10/100 BASE+TX RJ 45
Minimum download/upload connection per device	Mbps	1 / 0.5
Minimum data speed	Mbps	100 (full-duplex)
LAN cable		Minimum CAT5e
Max. LAN cable length	m	100
Environment		
Ambient temperature, operation	°C	-10 - +40
Ambient temperature, storage	°C	-25 - +60
Ambient humidity, operation	%RH	10 - 90
Degree of protection	IP	65
Weighing		
Breeding species (DanBred)		Large white x Yorkshire
		Duroc
Calculation area	kg	7 - 110
Weighing accuracy 7-30 kg (weaners)	%	+/- 5 (MAPE* after 24 hours)
Weighing accuracy 30-110 kg (finishing pigs)	%	+/- 3 (MAPE* after 24 hours)
Calculations sent to Cloud		Every hour
Shipment		
Weight	g	1100
Dimensions LxWxD	mm	200x190x80
Dimensions when packaged LxWxD	mm	315x250x180

Electrical		
Approvals		EN IEC 63000:2018 EN IEC 61000-6-2:2019 EN IEC 61000-6-4:2019

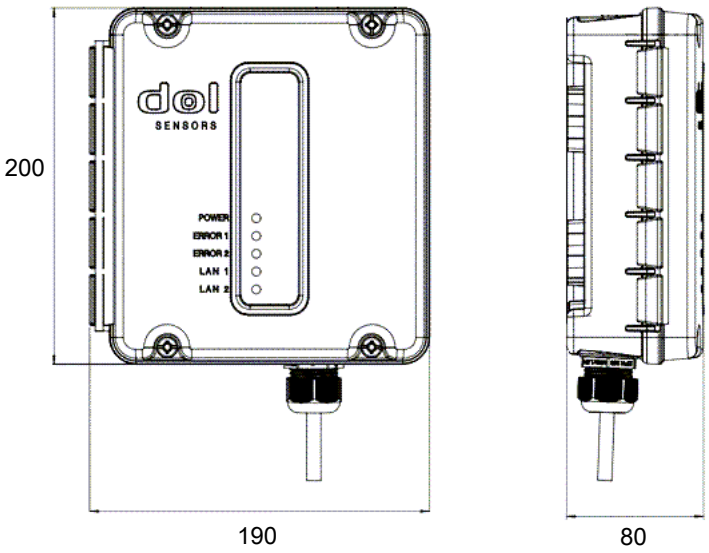
*Mean absolute percentage error

This product contains a Class 1 Laser unit under the EN/IEC 60825-1, Edition 3 (2014) internationally.

The laser unit complies with FDA performance standards for laser products except for conformance with IEC 60825-1 Ed. 3 as described in Laser Notice No. 56, dated May 8, 2019. 9.1.2.

8 Dimensions

Dimensions in mm.



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