



SHAKING INCUBATORS

As the major product range, Labwit shaking incubators are renowned as innovative, intuitive and reliable equipment amongst its competition. All shaking incubators have the state-of-art microprocessor detection, setting and PID control of both temperature and shaking speed, together with the extra CO₂ and humidification active controlling options on Ultimate-cell range, Labwit is now able to offer complete solutions for all lab shaking incubation needs. These units can be categorized into 4 ranges, from benchtop, horizontal, double layer to stackable models. Each model allows for maximum:

Accuracy

The set temperature is accurately reflected in the actual temperature inside the incubator. If it deviates from the setpoint, the energy to the heater is precisely regulated to adjust the actual temperature back to the setpoint without overshoot.

Uniformity

The temperature uniformity is achieved by 3D forced air circulation. A fan continuously moves the air across the incubator in order to create homogeneous conditions.

Reliability

Shaking incubators are generally left on for long periods of time. The microprocessor ensures the actual temperature remains stable, even when ambient temperature varies. The brushless induction motor ensures stable shaking movement for the long-term operation, free of maintenance.

Features	Premium Range	Economic Range
Micro-processor with PID Temperature control	●	●
Self-diagnosed Alarming System	●	●
Display Panel	—LCD Screen with Keypad	●
	—TFT Touch Screen	●
Cooling System	—Basic Automatic Control	●
	—Advanced Non-frost Control	●
Temperature Control Mode	—Fixed Value Control	●
	—Programmable Control	●
Built-in Printer	●	○
Heating Only Models		●
Humidity Control	○	
Multigas Control	○	

● Standard

○ Optional



ZWYC-290A



ULTIMATE-CELL STACKABLE Shaking Incubator

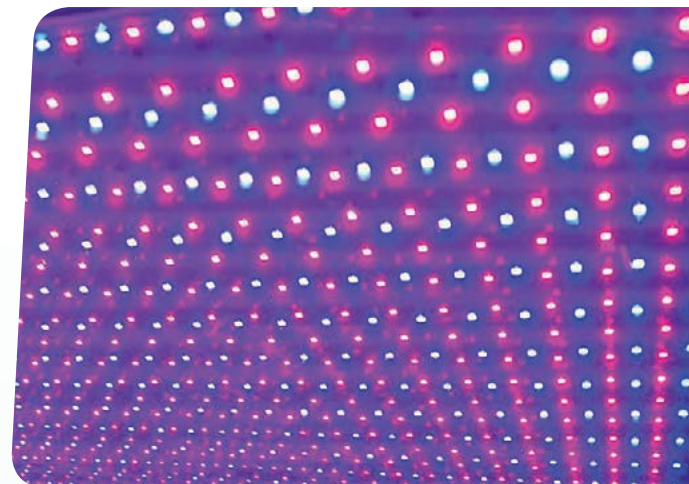
Thanks to the ongoing development of both technology and functionality requirements from our industry, Labwit has been thriving to innovate and is now able to offer our latest and comprehensive solution for microbial, mammalian and plant cell incubation needs, the inspiring ZWYC-290A Ultimate-cell Stackable Shaking Incubator.

The spaces in the labs are spacious and expensive, The ZWYC-290A can be stacked up to 2-3 units high to offer multiplied incubation capacity on a single unit footprint. Stacking also can be easily managed at a later time. Each compartment unit operates independently with cooling as standard, and can be upgraded with modular controlling options of, active humidity control, CO₂ concentration controls.

In addition, Ultimate-cell is also available for WiseKonec Plus™ system option for remote monitoring and controlling the unit via PC or Smartphones at any time anywhere.



The introduction of fingerprint encrypted system prevents unauthorized access to the working chamber, hence significantly enhancing the security of the precious samples inside.





Intuitive Touch Screen Panel

Integrated: Comprehensive information available at fingertips. The screen panel clearly indicates all basic operational parameters, such as temperature, speed and timer; as well as the optional parameters, for example, humidity level, and CO₂ concentration just in one page.

User friendly: Graphic user interface, easy to operate with icons and prompts, which makes it easy change the operating parameters settings, even those multi set points under programmable mode intuitively.

Intelligent: Self diagnostic alarm system monitors all functions and parameters and prompts in case of errors, which are clearly indicated in the touch screen panel.



Quin Drive Self Balance Driving System

Innovated Quin Drive system ensures smooth and reliable orbital shaking movement with a speed between 30-300rpm, even when there is imbalanced or maximum loading on the shaking platform. To achieve the maximized flexibility for all applications requiring optimized oxygen transfer rate, the shaking diameter can be steplessly adjusted from 1-50mm. Long life brushless motor provides consistent and no vibration shaking motion, maintenance free and low heat emissions.

Extended Chamber Capacity

The chamber is one of the biggest of its range and can take up to 32 pieces of 500ml Erlenmeyer flasks while the plain shaking tray (#P6023) and sticky mats are used.



Moreover, the traditional predrilled shaking tray (#P6022) with dedicated holes for fixing flask clamps are also available. With extended effective inner height as 425 mm, the unit chamber is always compatible with 5000ml flasks even when the photosynthetic LED lighting is equipped.

The maximum capacity for various Erlenmeyer flask clamps is shown in the table.

Excellent Temperature Controlling System

New solid polyurethane casing optimizes the insulation of the chamber, Together with the sound air circulation system and PID controller ensures evenly distributed air flow as well as accurate and uniformed temperature control across the chamber.

Sound cooling system with CFC free refrigerant and automatic defrosting system ensures long term stable operation at as low as 4°C, or 20°C lower than ambient.

Microprocessor controller provides unmatched versatility by enabling users to create personalized program (with up to 9 segment, with cycles) to automate changes to function parameters.



Direct Injection Humidification System

Humidity is important for long term cell cultivations with flasks as well as when micro plates are used. Active controlled humidification system can effectively reduce evaporations during cultivation, hence, preventing the samples from drying out.



The humidification system of Ultimate-cell features 140°C steam direct injection into the chamber and active PID control with world class humidity sensor for utmost accuracy of measurement.

Advanced CO₂ controlling with Infrared (IR) sensor

The effective controlling of CO₂ concentration is essential for cultivations of mammalian cells and algae. The CO₂ concentration is well maintained between 0-20% to keep the pH value of the solution media at healthy level.



Labwit incorporates a world class single beam, dual wavelength IR CO₂ sensor, which guarantees superior performance and accuracy to the situations where temperature and humidity fluctuate rapidly, such as when the door is opened frequently.

Flask (ml)	P8021 50ml	P8022 100ml	P8023 250ml	P8024 500ml	P8026 1000ml	P8027 2000ml	P8028 3000ml	P8029 5000ml	P8012 96 Well Plate	P8010 Tube Rack
P6023 Tray	98	72	50	32	18	11	8	6	24	8
P6022 Tray	91	70	40	26	15	11	8	5	15	8



Photosynthetic LED Lightings

Ultimate-cell can be equipped with LED lighting panel for the cultivation of those phototrophic organisms, such as plant culture, algae, etc. The combinations of light spectra are optional upon request, and the light intensity is programmable to simulate day/night cycles. Single white color and dual blue & red color lighting options available.

Contamination Control

UV Sterilization

The UV sterilization system is isolated from the samples, sterilizes chamber air in the back chamber wall to maintain contamination-free conditions within the chamber.



Easy Cleaning Chamber

The chamber bottom is designed to catch and drain excess water and liquid spills in case of flask breaks through an outlet on the side.

Password and Fingerprint Encryption Door System

Password screen and door locking system prevents unauthorized changes of operational parameters as well as access to the valuable samples during long terms cultivation, enhancing the safety and reliability of the applications.

Complete Protection For Cell Culture

This model has been designed to include many features for the comprehensive of the application and the sample safety, hence providing you with added peace of mind.

- Automatic stop shaking motion and heating when the door is opened.
- Sensor failure alarm.
- Over-current and leakage protection.
- Non-volatile memory guarantees data integrity in the event of power interruption.
- Audible and visual alarm when parameter deviates from the set point.
- Independent temperature limit protection against over temperature.

Machine	
Outside (WxDxH)	1320x870x590mm (Side Cooling)*
Inside (WxDxH)	940x570x480mm
Volume	257L
Net/Gross Weight (with Cooling)	200kg/275kg
Control Panel	TFT Touch Screen
Illumination	Halogen
Operation Menu in	English
Ambient Temperature	5-35°C
UV Light	≥400 mW/m ²
Noise Level	<70 dB (1m above floor)
Power	1150W
Electricity	AC 220-240 Volt, 50/60Hz
Fingerprint System	Option
CO ₂	
Principle of Sensor	Infrared, NDIR
CO₂ Range	0-20%
CO₂ Accuracy	±0.15 @ 5.0%
Temperature Range	25-55°C
CO₂ Supply Auto Switch	Option
CO₂ Recovery (@5%)	5 mins (30 Seconds Door Opening)
Humidity	
Humidity Range	40-80%RH, at 25-55°C
Humidity Accuracy	0.1%RH
Humidity Uniformity	±3%RH
Principle of Sensor	Capacitive
System	Direct Steam Injection
Water Heater	150W
Humidifier Power	400W
Recovery (@70%RH)	10 mins (30 Seconds Door Opening)

* Or without side cooling compartment, 1080*870*590mm

Min. Operating Temperature: 15°C when Photosynthetic Lighting option is applied.

Shaking Unit	
Drive Type	Quin Drive System
Tray Size	850x450mm
Maximum Load	25kg
Speed Range	30-300 rpm
Speed Accuracy	±1 rpm
Timer	0-9999 mins
Shaking Mode	Orbital
Shaking Diameter	1-50mm Stepless Adjustment
Temperature	
Control Mode	Fixed Value & Program
Temperature Range	Ambient-15 to 60°C (Min. 4°C) #
Temperature Accuracy	0.1°C
Temperature Uniformity	±0.5°C @37°C
Principle of Sensor	PT100
Air Circulation	360m ³ /Hour
Recovery (@37°C)	10 mins (30 Seconds Door Opening)
Photosynthetic Lighting	
Light Type	LED, 50% Red, 50% Blue
Spectrum	Red: 640-660nm, Blue: 430-450nm
Light Intensity	13,000 Lux (Red: 6500 Lux, Blue: 6500 Lux)
Control	Yes, Individually, from 0-100% output
Control Mode	Fixed Value & Programmable
Dimensions (WxDxH)	890x500x10mm
Power	300W

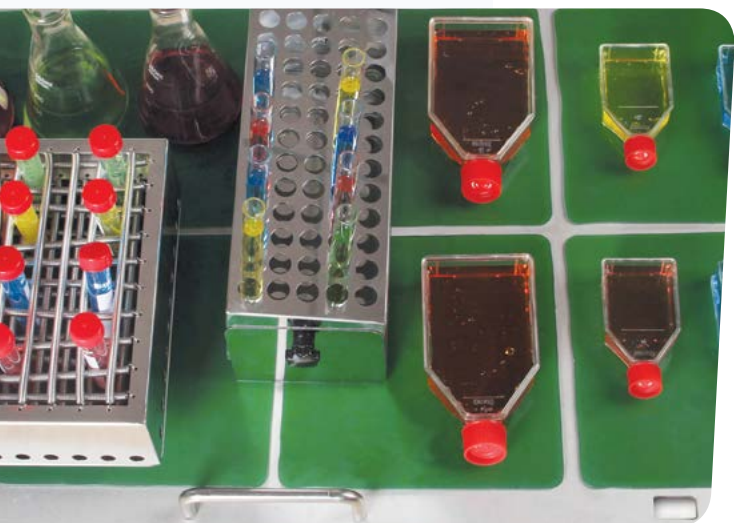




Order Information

ZWYC-290A	ZWYC-290A, 257Lx1, Ultimate-Cell Stackable Shaking Incubator, 4-60, 30-300rpm
P5011	LED Lighting Panel and Control Kit, For ZWYR-D2401/D2402/D2403, ZWYC-290A, 890x500mm
P5012	Base Stand for ZWYC-290A, 1080x720x500mm
P5013	Direct Steam Humidification Kit for ZWYC-290A
P5014	IR CO ₂ Kit for ZWYC-290A
P5015	WiseKonec™ Plus Data Connection Kit
P5016	Fingerprint Encryption System for ZWYC-290A
P6022	Tray for ZWYC-290A, Predrilled
P6023	Tray for ZWYC-290A, Plain
P8010	Tube Rack S/S
P8011	Tube Rack ABS Plastic
P8012	Clamp for 96 Well Plate, S/S
P8017	Sticky Mat, 20 x 20cm
P8021	O Clamp, S/S, for 50ml Flask, with Spring Retainer
P8022	O Clamp, S/S, for 100ml Flask, with Spring Retainer
P8023	O Clamp, S/S, for 250ml Flask, with Spring Retainer
P8024	O Clamp, S/S, for 500ml Flask, with Spring Retainer
P8025	O Clamp, S/S, for 750ml Flask, with Spring Retainer
P8026	O Clamp, S/S, for 1000ml Flask, with Spring Retainer
P8027	O Clamp, S/S, for 2000ml Flask, with Spring Retainer
P8028	O Clamp, S/S, for 3000ml Flask, with Spring Retainer
P8029	O Clamp, S/S, for 5000ml Flask, with Spring Retainer

* S/S: Stainless Steel





SHAKING INCUBATORS

INTRODUCTION OF PREMIUM RANGE



Following the success of the economic shaking incubator range, the upgraded premium shaking incubator range are introduced to offer the excellent basic functions same as the economic range, but with a bunch of advanced upgraded features to enhance the user experience as well as the functionality of this one of the most common type of equipments in modern labs.

- ▶ An intuitive LCD TFT touch screen panel achieves easy operation and clear display.
- ▶ Sophisticated cooling system ensures long term non-frost operation at low temperature (4°C).
- ▶ Under the new programmable control mode, the unit can now be programmed to operate according to personalized “ramp and soak” cycles of both temperature and shaking speed.
- ▶ Built-in printer is included as standard to ensure continuous monitor over the operating parameters.





ZWYR-D2402



ZWYR-D2401



ZWYR-D2403

PREMIUM STACKABLE Shaking Incubators

This ZWYR-D series shaking incubators can be stacked up to three units high, providing laboratory professionals tripled culture capacity, while still only occupying the same “footprint” of a single shaker. All models feature an insulated, fold-down door with double-layer glass window for high visibility. On all refrigerating models, microprocessor controller provides unmatched versatility by enable users to create personalized program (with up to 9 segments, with cycling) to automate changes to function parameters.

- ▶ Stackable up to three units for maximum space savings.
- ▶ 5.6” LCD 640x480 touch screen panel clearly indicates all parameters in one page display and enables all complicated program settings intuitively just with finger tips.
- ▶ Wide-view fold-down door with door handle, and ergonomic sliding-out shaking platform provide convenient access to your experiment products.
- ▶ Direct beltless driving system is both durable and economical, maintenance free, allows extended speed ranges from 30 to 300 RPM, ± 1 RPM with minimized vibration, even when shakers are stacked of three high. The shaking diameter can be changed from 1-50mm for optimum oxygenation and nutrient mixing and agitation in from small to large flasks.
- ▶ The top of the casing can be further used as a work area for locating small items of lab equipment etc.
- ▶ The incubator casing is made of heavy-gauge cold-rolled steel; together with high graded #304 stainless steel inner chambers with coved corners make it easy to clean with mild detergent. Chamber is tall enough to hold 2L Erlenmeyer flasks.
- ▶ The ceiling of the unit can be upgraded and fitted with LED lighting kit for cultivation of phototrophic organisms. Mono/dual light colors are possible and the intensity of each color can be independently controlled and programmed to simulate day/night cycles, perfect for plant cell culture. (See next page for more information)
- ▶ Robust brushless DC motor enables shaking motion quiet and smooth, even when unit is operating at top speed with maximum workload.
- ▶ Non-volatile memory saves settings during a power outage and automatically restarts the unit after power is restored.
- ▶ For data recording, the units are equipped with a built-in thermo printer as standard, so that operators could check how the performance parameters vary according to specified process without having to be on site.
- ▶ Predrilled platform as standard configuration, flask clamps excluded.
- ▶ For a comfortable working height, the base stands are available in 500mm high.
- ▶ UV light reduces the air burden, keeping the chamber contamination free.



Model	ZWYR-D2401	ZWYR-D2402	ZWYR-D2403
Control	P.I.D Microprocessor		
Control Mode	Fix Value or Program (up to 9 Segments)		
Control Panel	LCD Touch Screen		
Air Convection	Forced		
Shaking Mode	Orbit		
Volume/ Compartment (L)	190		
Ambient Temperature(°C)	10-35		
Shaking Speed (rpm)	30-300		
Stroke (mm)	Ø1-50 Stepless Adjustable		
Temperature Range (°C)	4-60#		
Temperature Accuracy (°C)	0.1		
Temperature Uniformity (°C)	±1°C@37°C		
Timer	1 to 9999 mins		
Tray (mm) (WxD)	800x430		
Tray Included	1	2	3
Inner Dimensions (mm) (WxDxH)	920x532x395		
Exterior Dimensions (mm) (WxDxH)	1300x930x735	1300x930x1315	1300x930x1895
Packing Dimensions (mm) (WxDxH)	1420x1050x905	1420x1050x1480	1420x1050x2060
Net/Gross Weight (kg)	250/290	450/540	650/750
Power (W)	1200	2400 (1200*2)	3600 (1200*3)
Electricity	220-240V 50/60 Hz		
Approval	CE, ISO		
Security	Over-temperature Protection, Compressor Overload Protection, Electrical Leakage Protection		
Additional	UV light, Built-in Printer, RS485 COM Kit (Option), LED Lighting Control Kit (Option), Base Stand(Optional)		

Min. Operating Temperature: 15°C when Photosynthetic Lighting option is applied.

Capacity	50ml	100ml	250ml	500ml	750ml	1000ml	2000ml	Tube Rack S/S	96 Well Plate
ZWYR-D2401	91	50	38	26	15	15	8	8	19
ZWYR-D2402	182	100	76	52	30	30	16	16	38
ZWYR-D2403	273	150	114	78	45	45	24	24	57

Photosynthetic Lighting

Light Type	LED, 50% Red, 50% Blue
Spectrums	Red: 640-660nm, Blue: 430-450nm
Light Intensity	13,000 Lux (Red: 6500 Lux, Blue: 6500 Lux)
Control	Yes, Individually, from 0-100% output
Control Mode	Fixed Value & Programmable
Dimensions	890x500x10mm
Power	300W



Order Information

ZWYR-D2401	ZWYR-D2401, 190Lx1, Premium Stackable Shaking Incubator, Single, 4-60, 30-300rpm
ZWYR-D2402	ZWYR-D2402, 190Lx2, Premium Stackable Shaking Incubator, Double, 4-60, 30-300rpm
ZWYR-D2403	ZWYR-D2403, 190Lx3, Premium Stackable Shaking Incubator, Triple, 4-60, 30-300rpm
P5010	Base Stand for ZWYR-D2401, 1300*800*500mm
P5011	LED Lighting Panel and Control Kit, For ZWYR-D2401/D2402/D2403, ZWYC-290A, 890x500mm
P8010	Tube Rack S/S
P8011	Tube Rack ABS Plastic
P8012	Clamp for 96 Well Plate, S/S
P8017	Sticky Mat, 20 x 20cm
P8021	O Clamp, S/S, for 50ml Flask, with Spring Retainer
P8022	O Clamp, S/S, for 100ml Flask, with Spring Retainer
P8023	O Clamp, S/S, for 250ml Flask, with Spring Retainer
P8024	O Clamp, S/S, for 500ml Flask, with Spring Retainer
P8025	O Clamp, S/S, for 750ml Flask, with Spring Retainer
P8026	O Clamp, S/S, for 1000ml Flask, with Spring Retainer
P8027	O Clamp, S/S, for 2000ml Flask, with Spring Retainer

* S/S: Stainless Steel





ZWYR-240

ZWYR-200D

ZWFR-200



PREMIUM BENCHTOP Shaking Incubators

This new premium benchtop shaking incubators provided by LABWIT offer conditions of time, broad temperature and orbital or reciprocal agitation capabilities for meeting comprehensive requirement of the growth of biological organisms. This P.I.D microprocessor controlled shakers have a number of advanced features that are really unique in bench top models. This unique benchtop model with shaking diameter stepless adjustable from 1-50mm provides unmatched flexibility for meeting comprehensive application requirements. The sophisticated PID controller provides these units with choices of not only constant controlling one fixed temperature and speed, but also programmed controlling with a series of "ramps and soaks" segments on time basis. For data recording, the units are equipped with a built-in thermo printer as standard, so that operators could check how the performance parameters vary according to specified process without having to be on site.

- ▶ 4.3" LCD 480x272 touch screen panel clearly indicates all parameters in one page display and makes it easy to change the operating parameters settings, even those multi set points under programmable mode intuitively.
- ▶ P.I.D microprocessor controller provides unmatched versatility by enable users to create personalized program (with up to 9 segments, with cycling) to automate changes to function parameters.
- ▶ Inner chamber & tray from high graded #304 electro polished stainless steel.
- ▶ Robust single eccentric counterbalanced drive in cast iron housing provides vibration and trouble free operation with high shaking speed up to 600rpm.
- ▶ The versatility of the driving system allows stroke continuous adjustment from 1 to 50 mm for optimum oxygenation and nutrient mixing and agitation in from small to large flasks.
- ▶ Quality brushless AC inductive motor supports reliable, quiet and smooth shaking movements up to top speed.
- ▶ Non-volatile memory saves settings during a power outage and automatically restarts the unit after power is restored.
- ▶ Audible and visual alarms on over temperature and motor overheating, and automatically cut off the power.
- ▶ Soft start and smooth acceleration when lid is closed after short opens.
- ▶ For data recording, the units are equipped with a built-in thermo printer as standard, so that operators could check how the performance parameters vary according to specified process without having to be on site.
- ▶ Timer up to 9999 mins under fixed value control mode.
- ▶ Pre-drilled standard tray included, without clamps.



Model	ZWYR-200D	ZWYR-240	ZWFR-200
Control	P.I.D Microprocessor		
Control Mode	Fix Value or Program (up to 9 Segments)		
Control Panel	4.3" LCD Touch Screen		
Volume (L)	69		
Shaking Speed (rpm)	30-600	30-400	30-240
Stroke (mm)	1-50 Stepless Adjustment		
Shaking Mode	Orbital		Reciprocal
Tray (mm) (WxD)	400x370		435x420
Ambient Temperature(°C)	5-25		
Temperature Range (°C)	4-60		
Temperature Accuracy (°C)	0.1		
Temperature Uniformity (°C)	±1°C@37°C		
Timer	1 to 9999 mins		
Inner Dimensions (mm) (WxDxH)	490x470x320	490x470x335	490x470x320
Exterior Dimensions (mm) (WxDxH)	774x740x610		
Packing Dimensions (mm) (WxDxH)	860x850x760		
Net/Gross Weight (kg)	100/132		
Power (W)	700		
Electricity	220-240V 50/60 Hz		
Approval	CE, ISO		
Security	Over-temperature Protection, Compressor Overload Protection, Electrical Leakage Protection		
Additional	Built-in Printer, RS485 COM Kit (Option)		



Capacity	50ml	100ml	250ml	500ml	750ml	1000ml	2000ml	Tube Rack S/S	96 Well Plate
ZWYR-200D	23	23	12	9	7	5	-	3	8
ZWYR-240	23	23	12	9	7	5	4	3	8
ZWFR-200	23	23	12	9	7	5	-	3	8

Order Information

ZWYR-200D	ZWYR-200D,69L, Premium Orbital Shaking Incubator 4-60, 30-600rpm
ZWYR-240	ZWYR-240, 69L, Premium Orbital Shaking Incubator 4-60, 30-400rpm
ZWFR-200	ZWFR-200,69L, Premium Reciprocal Shaking Incubator 4-60, 30-240rpm

P6004	Tray for ZWYR-240/200D, ZWY-240/200D, S/S *
P6005	Tray for ZWFR-200, ZWF-200, S/S
P7003	Universal Tray for ZWYR-240/200D, ZWY-240/200D
P7005	Universal Tray for ZWFR-200, ZWF-200
P8001	T Clamp, S/S, for 50ml Flask, with Spring Retainer
P8002	T Clamp, S/S, for 100ml Flask, with Spring Retainer
P8013	T Clamp, S/S, for 150ml Flask, with Spring Retainer
P8003	T Clamp, S/S, for 250ml Flask, with Spring Retainer
P8014	T Clamp, S/S, for 300ml Flask, with Spring Retainer

P8004	T Clamp, S/S, for 500ml Flask, with Spring Retainer
P8005	T Clamp, S/S, for 750ml Flask, with Spring Retainer
P8006	T Clamp, S/S, for 1000ml Flask, with Spring Retainer
P8010	Tube Rack S/S
P8011	Tube Rack ABS Plastic
P8012	Clamp for 96 Well Plate, S/S
P8017	Sticky Mat, 20 x 20cm

* S/S: Stainless Steel