



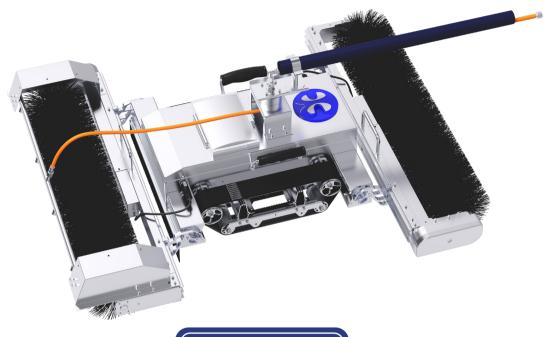
# MODEL SPECIFICATION & PRICE COMPREHENSIVE CHART MODEL ÖZELLİKLERİ & FİYAT KARŞILAŞTIRMA TABLOSU

Model	E22L (B20L2)	E22H (*)	E32L (B30L2)	E32H (*)	E33H (B30M2)
Efficiency Temizlik Kapasitesi	400m2/h	450m2/h	600m2/h	650r	m2/h
<b>Gradeability</b> <i>Tırmanabilirlik</i>		•	Wet) (Dry)		15° (Wet) 20° (Dry)
<b>Weight</b> Ağırlık	30.3kg	30.35kg	39.3kg	39.35kg	41.25kg
Brush Wide Fırça Genişliği	880mm	900mm		1285mm	
Battery Life Batarya Ömrü	4.	5h	4	h	3h
Water Consumption Su Tüketimi	370	L/h	400	L/h	410 L/h
Recommended Scale Plant Önerilen Kapasite Aralığı	upto 2MW		2-5MW		Over 5MW

<sup>\*&</sup>quot;Module compatible with adding remote control" are included in the same group of models. Aynı grup modeller içinde "Kumanda eklemeye uyumlu modul" dahildir.







E22H

## KWUNPHI —

Dry Brushing
0~15°
-20~80℃
-20~50℃
40mm
40mm
water Washing Angle
62~74 km/h Fresh Gale
IP 55

Project
PV panel Angle*
PV panel Surface Temp.
Environment Temp.★
PV panel Gap
PV Height Difference
Rainfall
Wind Power
IP Rating

Water Washing
0~10°
0~80℃
0~50℃
40mm
20mm
25~50 mm Light Rain
29~38 km/h Fresh Breeze
IP 55

<sup>\*</sup> PV panel angle data ultimately depends on the characteristics of the contaminant. ( $\Rightarrow$  Shenzhen Kwunphi reserves the right to interpret the data )

#### Kwun E22H Technical Specification

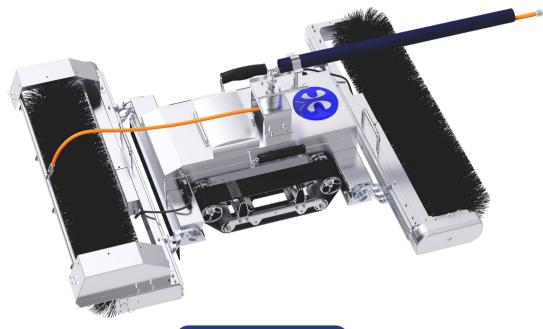
	<u>-</u>			
	Based on TianyunOS Operating Sys	stem		
	Based on Glass vSLAM Visual Navigation Technology			
Technology	Based on Goodzenn Path Planning Technology			
	Based on Ai-KWUN Operating Platform			
	Based on OTA-KWUN Operating Pla			
	Based on on the two to operating the	actioniii		
	Design Life:	6 years		
	Warranty(whichever comes first):	1 year or 2400 hours		
Life &	Battery Capacity:	15Ah		
Endurance	The Battery Life*:	4.5 hours		
	Charging Time:	3 hours		
	8 Hours Battery Life: Replace The			
	o modify battery bire. Replace in	24461 7 27 61 7 116 116 6116		
	Dust (adhesion ≤10 <sup>-6</sup> N) :	≥99%		
Ability	Dust Accumulation (adhesion ≤10	) <sup>-4</sup> N): ≥95%		
to Clean	Dried Guano (adhesion ≤10 <sup>-2</sup> N):	≥85%		
	Cleaning Efficiency:	≥450m²/h		
	<i>J</i>			
	Body Size* (without brushes):	585*560*250mm		
	Body Weight* (without brushes):	19.75kg		
Shape	Brush Length* (detachable):	936mm (D type)		
'	Brush Weight*:	5.7kg & 4.9kg (D type)		
	Number of Rolling Brushes:	2		
		24		
_	Maximum of Single Control:	24 sets		
_	Roof RECO Maximum Number Operate: 4 sets			
_	RECO Maximum Number Operate on Slopes: 4 sets			
_	Software Upgrade:	OTA		
_	Work at Night	Yes		
Mani-	View Logs in Real Time:	Yes		
pulation	UAV Retraction:	Yes		
palation	Unmanned on Approach Bridge:			
	APP Control Remotely:	Yes		
	Remote Control:	Yes		
	Breakpoint Continuation:			
	Adjust the Brush Speed:	Yes		
	Rated Brush Speed:	120r/min		
	•			
<b>—</b>		mous Work; Mobile APP		
Coourity	Positioning Mode: Al Semantic Visio			
	Positioning Accuracy: ≤10mm			
	Steering Mode: High Precision Adsorption Steering Mechanism			
Security		Intic Vision + Ultrasonic		
	Track Self-c Anti-skid : Deviati	cleaning + High Precision ion Correction Algorithm		
	Protection Rate :	IP65		
	Security: 10000 Cyc	cles without Microcrack		

 $<sup>\</sup>boldsymbol{\star}$  Battery life may vary due to different situation, loads, battery consumptions and other factors.

<sup>\*</sup> Weight and size of robots may vary slightly due to the change of suppliers.







E22L

## KWUNPHI —

Dry Brushing
0~15°
-20~80℃
-20~50°C
40mm
40mm
water Washing Angle
62~74 km/h Fresh Gale
IP 55

Project
PV panel Angle*
PV panel Surface Temp.
Environment Temp.★
PV panel Gap
PV Height Difference
Rainfall
Wind Power
IP Rating

Water Washing
0~10°
0~80℃
0~50℃
40mm
20mm
25~50 mm Light Rain
29~38 km/h Fresh Breeze
IP 55

<sup>\*</sup> PV panel angle data ultimately depends on the characteristics of the contaminant. ( $\Rightarrow$  Shenzhen Kwunphi reserves the right to interpret the data )

#### **Kwun E22L Technical Specification**

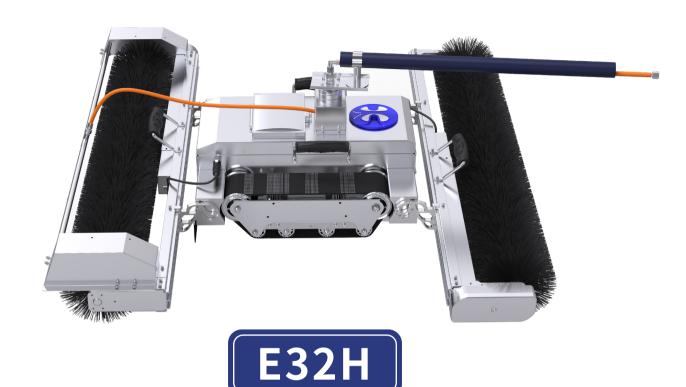
	Based on TignyunOS Operating Sys	stam		
	Based on TianyunOS Operating System  Based on Glass vSLAM Visual Navigation Technology			
Technology	Based on Goodzenn Path Planning			
	Based on Ai-KWUN Operating Platf			
_	Based on OTA-KWUN Operating Plate			
	Basea on OTA RWON Operating Fit	difform		
	Design Life:	6 years		
1:6-0	Warranty(whichever comes first):	1 year or 2400 hours		
Life &	Battery Capacity:	15Ah		
Endurance	The Battery Life*:	4.5 hours		
	Charging Time: 3 l			
	8 Hours Battery Life: Replace The	Battery Every 4.5 hours		
	Dust (adhesion ≤10 <sup>-6</sup> N) :	≥85%		
Ability	Dust Accumulation (adhesion ≤10	) <sup>-4</sup> N): ≥80%		
to Clean	Dried Guano (adhesion ≤10 <sup>-2</sup> N):	≥70%		
	Cleaning Efficiency:	≥400m²/h		
	Body Size* (without brushes):	585*560*250mm		
	Body Weight* (without brushes):	19.7kg		
Shape	Brush Length* (detachable):	936mm (D type)		
	Brush Weight*:	5.7kg & 4.9kg (D type)		
	Number of Rolling Brushes:	2		
	Maying up of Cinala Control.	12 sets		
	Maximum of Single Control:  Roof RECO Maximum Number Ope			
_	RECO Maximum Number Operate of			
_	Software Upgrade:	OTA		
_	Work at Night	No		
–	View Logs in Real Time:	Yes		
Mani-	UAV Retraction:	No		
pulation —		Yes		
_	Unmanned on Approach Bridge: APP Control Remotely:	Yes		
_	Remote Control:	No		
_	Breakpoint Continuation:	No No		
_	Adjust the Brush Speed:	Yes		
	Rated Brush Speed:	120r/min		
	Ratea Brasii Speea.	12017111111		
	Working Mode: Autonor	mous Work; Mobile APP		
	Positioning Mode:	Al Semantic Vision		
	Positioning Accuracy:	≤20mm		
C = ====:		dsorption Steering Mechanism		
Security		intic Vision + Ultrasonic		
	Track Self-c Anti-skid : Track Self-c	cleaning + High Precision ion Correction Algorithm		
	Protection Rate :	IP55		

 $<sup>\</sup>star$  Battery life may vary due to different situation, loads, battery consumptions and other factors.

<sup>\*</sup> Weight and size of robots may vary slightly due to the change of suppliers.







## KWUNPHI —

Dry Brushing
0~15°
-20~80℃
-20~50℃
40mm
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water Washing Angle
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IP 55

Project
PV panel Angle*
PV panel Surface Temp.
Environment Temp.★
PV panel Gap
PV Height Difference
Rainfall
Wind Power
IP Rating

Water Washing
0~10°
0~80℃
0~50℃
40mm
25mm
25~50 mm Light rain
29~38 km/h Fresh Breeze
IP 55

<sup>\*</sup> PV panel angle data ultimately depends on the characteristics of the contaminant. ( $\Rightarrow$  Shenzhen Kwunphi reserves the right to interpret the data )

#### Kwun E32H Technical Specification

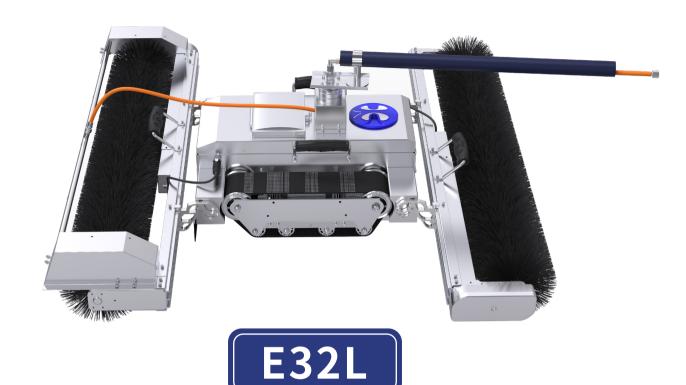
	•		
_	Based on TianyunOS Operating System		
	Based on Glass vSLAM Visual Navigation Technology		
Technology	Based on Goodzenn Path Planning	Technology	
	Based on Ai-KWUN Operating Platf	orm	
	Based on OTA-KWUN Operating Pla	ıtform	
Life & Endurance	Design Life:	6 years	
	Warranty(whichever comes first):	1 year or 2400 hours	
	Battery Capacity:	15Ah	
	The Battery Life*:	4 hours	
	Charging Time: 3 ho		
	8 Hours Battery Life: Replace The Battery Every 4 hours		
Ability to Clean	Dust (adhesion ≤10 <sup>-6</sup> N) :	≥99%	
	Dust Accumulation (adhesion ≤10	<sup>-4</sup> N): ≥95%	
	Dried Guano (adhesion ≤10 <sup>-2</sup> N):	≥85%	
	Cleaning Efficiency:	≥650m²/h	
	Body Size* (without brushes):	585*560*250mm	
	Body Weight* (without brushes):	23.85kg	
Shape	Brush*(detachable):	7.2kg (B type)	
	Brush and Water Branch*:	8.3kg (B type)	
	Brush length*:	1285mm (B type)	
	Maximum of Single Control:	24 sets	
	Roof RECO Maximum Number Oper	rate: 4 sets	
<b>—</b>	RECO Maximum Number Operate on Slopes: 4 sets		
	Software Upgrade:	ОТА	
	Work at Night	Yes	
Mani-	View Logs in Real Time:	Yes	
	UAV Retraction:	Yes	
pulation —	Unmanned on Approach Bridge:	Yes	
	APP Control Remotely:	Yes	
	Remote Control:	Yes	
	Breakpoint Continuation:	Yes	
	Adjust the Brush Speed:	Yes	
	Rated Brush Speed:	160r/min	
	Working Mode: Autonor	nous Work; Mobile APP	
	Positioning Mode:	Al Semantic Vision	
	Positioning Accuracy:	≤10mm	
Security	<u> </u>	sorption Steering Mechanism	
		ntic Vision + Ultrasonic	
		leaning + High Precision on Correction Algorithm	
	Protection Rate :	IP65	
		les without Microcrack	
	100000		

 $<sup>\</sup>star$  Battery life may vary due to different situation, loads, battery consumptions and other factors.

<sup>\*</sup> Weight and size of robots may vary slightly due to the change of suppliers.







## KWUNPHI —

Dry Brushing		
0~15°		
-20~80℃		
-20~50℃		
40mm		
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water Washing Angle		
62~74 km/h Fresh Gale		
IP 55		

Project		
PV panel Angle*		
PV panel Surface Temp.		
Environment Temp.★		
PV panel Gap		
PV Height Difference		
Rainfall		
Wind Power		
IP Rating		

Water Washing		
0~10°		
0~80℃		
0~50℃		
40mm		
25mm		
25~50 mm Light rain		
29~38 km/h Fresh Breeze		
IP 55		

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#### Kwun E32L Technical Specification

	Based on TianyunOS Operating System		
	Based on Flanyanos Operating Sys		
Technology	Based on Goodzenn Path Planning		
	Based on Ai-KWUN Operating Platform		
	Based on OTA-KWUN Operating Pla		
Life & Endurance	Design Life:	6 years	
	Warranty(whichever comes first):	1 year or 2400 hours	
	Battery Capacity:	15Ah	
	The Battery Life*:	4 hours	
	Charging Time: 3 hours		
	8 Hours Battery Life: Replace Th	ne Battery Every 4 hours	
Ability	Dust (adhesion ≤10 <sup>-6</sup> N) :	≥85%	
	Dust Accumulation (adhesion ≤10	0 <sup>-4</sup> N) : ≥80%	
to Clean	Dried Guano (adhesion ≤10 <sup>-2</sup> N):	≥70%	
	Cleaning Efficiency:	≥600m²/h	
	Body Size* (without brushes):	585*560*250mm	
	Body Weight* (without brushes):	23.8kg	
Shape	Brush*(detachable):	7.2kg (B type)	
	Brush and Water Branch*:	8.3kg (B type)	
	Brush length*:	1285mm (B type)	
	Maximum of Single Control:	12 sets	
	Roof RECO Maximum Number Ope	rate: 2 sets	
	RECO Maximum Number Operate o	on Slopes: 2 sets	
	Software Upgrade:	OTA	
	Work at Night	No	
Mani-	View Logs in Real Time:	Yes	
	UAV Retraction:	No	
pulation –	Unmanned on Approach Bridge:	Yes	
	APP Control Remotely:	Yes	
	Remote Control:	No	
	Breakpoint Continuation:	No	
	Adjust the Brush Speed:	Yes	
	Rated Brush Speed:	160r/min	
	Working Mode: Autonomous Work; Mobile APP		
	Positioning Mode:	•	
	Positioning Accuracy: \$20mm		
	Steering Mode: High Precision Adsorption Steering Mechanism		
Security	Anti-fall Protection: Al Semantic Vision + Ultrasonic		
		cleaning + High Precision ion Correction Algorithm	
	Protection Rate :	IP55	
	Security: 10000 Cyc	cles without Microcrack	

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Dry Brushing		
0~20°		
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40mm		
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water Washing Angle		
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IP 55		

Project		
PV panel Angle*		
PV panel Surface Temp.		
Environment Temp.★		
PV panel Gap		
PV Height Difference		
Rainfall		
Wind Power		
IP Rating		

Water Washing		
0~15°		
0~80℃		
0~50℃		
40mm		
25mm		
25~50 mm Light rain		
29~38 km/h Fresh Breeze		
IP 55		

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#### Kwun E33H Technical Specification

	<u>'</u>		
	Based on TianyunOS Operating Sy	stem	
	Based on Glass vSLAM Visual Navigation Technology		
Technology	Based on Goodzenn Path Planning	Technology	
	Based on Ai-KWUN Operating Plat	form	
	Based on OTA-KWUN Operating Platform		
	Design Life:	6 years	
	Warranty(whichever comes first):	2 years or 4800 hours	
Life &	Battery Capacity:	15Ah	
Endurance	The Battery Life*:	3 hours	
	Charging Time:	3 hours	
	8 Hours Battery Life: Replace The Battery Every 3 hours		
Ability to Clean	Dust (adhesion ≤10 <sup>-6</sup> N) :	≥99%	
	Dust Accumulation (adhesion ≤10 <sup>-4</sup> N) : ≥95		
	Dried Guano (adhesion ≤10 <sup>-2</sup> N):	≥85%	
	Cleaning Efficiency:	≥650m²/h	
	Body Size* (without brushes):	650*560*250mm	
	Body Weight* (without brushes):	25.75kg	
Shape	Brush* (detachable):	7.2kg (B type)	
	Brush and Water Branch*:	8.3kg (B type)	
	Brush Length*:	1285mm (B type)	
	Maximum of Single Control:	24 sets	
	Roof RECO Maximum Number Ope	erate: 4 sets	
	RECO Maximum Number Operate on Slopes: 4 sets		
	Software Upgrade:	OTA	
	Work at Night	Yes	
Mani-	View Logs in Real Time:	Yes	
	UAV Retraction:	Yes	
pulation —	Unmanned on Approach Bridge:	Yes	
	APP Control Remotely:	Yes	
	Remote Control:	Yes	
	Breakpoint Continuation:	Yes	
	Adjust the Brush Speed:	Yes	
	Rated Brush Speed:	160r/min	
	Working Mode: Autono	mous Work; Mobile APP	
	Positioning Mode:	Al Semantic Vision	
Security	Positioning Accuracy:	≤10mm	
	Steering Mode: High Precision Adsorption Steering Mechanism		
		antic Vision + Ultrasonic	
	Anti-skid : Track Self-a Deviat	cleaning + High Precision ion Correction Algorithm	
	Protection Rate :	IP65	
	Security: 10000 Cycles without Microcrack		

 $<sup>\</sup>star$  Battery life may vary due to different situation, loads, battery consumptions and other factors.

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