Smartfarm
Product Information

FARMTOS

FARMTOS = FARM+KALATOS DK Ecofarm's eco-friendly smart farm solution brand.

DK EcoFarm

Company Profile & History

Company Name
DK Ecofarm co.,Ltd.

Establishment Date
June 21, 2016

Corporate Classification
Venture, KSM registration

Business Field
Smartfarm Design&Construction IoT Agricultureequipment manufacture

Website
www.dkecofarm.com (KR) en.dkecofarm.com (ENG)

Contact
Tel : +82 2 868 6811 E-mail : info@dk-ecofarm.co.kr

Address
Head Office Ballyong-ro 109, A-312, Deokjin-gu, Jeonju-si, Jeollabuk-do, Korea (54853)
Branch Office Ogeum-ro 171 ,5F, Sonpa-gu Seoul, Korea (05641)

2023
- Won Minister of Agrigulture Award
- Won Korea National Social Industry Contribution Awards (Smartfarm Solution)
- ISO Certified company 14001, 45001

2022
- Certification of excellent SW development company (NICE technology evaluation)
- Selected as Jeollabuk-do Boom enterprise

2021
- Won Minister of Science and ICT Award
- Won Korea Excellent Patent Award
- National standard intellectual sensor PoC
- Eco-friendly circulating fertilizer supply system PoC

2020
- Selected as Korea's Top 100 Start-up company
- IPET Indoor Grower Business

2019
- Registration of KSM

2018
- Won Korea Excellent Patent Award
- Won Korea's leading company Award twice
- Production certification of pesticide-free sprout ginseng

2017
- Won 2017 IoT Director of Information and Communications Award
- Won Korea's leading company Award

2016
- Company establish
- Certification of venture company
- K-global 300 Company Certification

Greenhouse Environment Complex Sensor

ECS-B10

ECS-S10

농업기계 성능시험 성적서

• 시험번호 : 22-FACTMP-010
• 신청자

상호	㈜디케이에코팜	대표자	홍의기
사업자등록번호	669-86-00477		
주소	전라북도 전주시 완산구 아중로 33, 2층 201호		

• 시험일자

시험일자	2022. 1. 25.

• 시험방법 : 센서 성능시험방법
• 시험대상

센서	형식명	THC-T(T) 2101
	형식	디지털식
	측정항목	온도
	측정범위	-20~80) ℃

표준적합성 결과

• 기계적 규격

	결선		
분류	2선식	3선식	4선식
해당			○

• 전기적 규격

	전원전압			
	직류(VDC)			교류(VAC)
분류	5	12	24	220
해당			○	

	출력신호 형태 및 범위		
	전류		디지털
분류	전압(1-5)VDC	접점신호	(RS485)
해당			○

• 측정범위 : 온수

Features

- Smart Farm National Standard Certified product

- Indoor temperature, relative humidity, CO2,
  lack of moisture, absolute humidity, VPD, dew point

- RS485/LoRa communication(optional)

- Monitoring via mobile (mobile)

- Check the numbers on site (ECS-B10 model)

Specifications

Feature	Ventilation: wet/dry method Optimized CO2 measurements (greenhouse settings)	
Accuracy	Temp.	± 0.3℃
	Humidity	± 3%
	CO2	± 400ppm + measurement 3%(SensAir S8)
	CO2	± 300ppm +measurement 3%(SensAir K30)
Sensitivity Range	Temp.	-55℃ ~125℃
	Humidity	0~100%
	CO2	0~10,000ppm
Server comm	WiFi	802.11 b/g/n 2.4Ghz
Internal comm	LoRa	920.9 to 923.3 MHz (옵션optional)
Body size		160mm*220*140mm
Main power		DC 5V (220V ACto DC adaptor)
Assurance	Free	1 year
	Compensation	2 year

Fertilizer Supply System

Features

- Smart Farm National Standard Certified product

- Choose capacity based on greenhouse size

- Applicable to oxygen dissolving machine and UV sterilizer

- Resistant to hot and humid environments and noise

- Basic 8 districts, maximum 15 districts

- 10.2-inch touch panel control and manual control

- Time control, sensor control, solar control

- AI Surge Optimization (optional)

- Circulating system(optional)

- Sensor value, drive history storage data logger (optional)
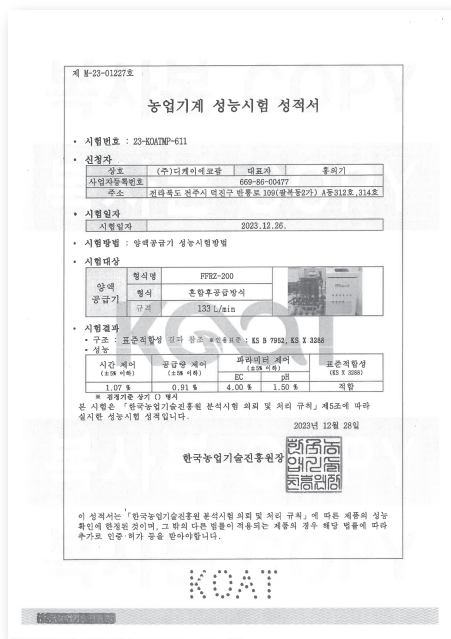
- EC and pH can be set by zone

Specifications

Hardware

Voltage, Motor capacity	1 phase 220v / 3 phase 380v, 2HP horizontal motor
Emmergency irrigation	1 additional irrigation possible(recieve signal from ecetrnal device)
Irrigation circle	Irrigation cycle can be set and supplied every 1~7 days Settings by month, period, or season
Fertilizer selection	Type: A, B, C, and D

Software

Operating hardware		Mitsubishi PLC network + WINDOWS CE 6.0
Software		FARMTOS FRZ exclusive software
Monitor/Operation method		10.2 inch touch screen, Manual operation function
Control method	Manual	zone supply, panel selection, operation supply
	Time	time by zone, time interval, automatic supply, reverse supply
	Irrigation	Independently set EC and pH for each zone
	EC, pH Adjustment	Auto(PID control), User designated time

UVSterilizer

Features

- Sterilization with UV-C lamp
- Sterilization of 8 common bacterias in crops
- Recycling system that can manage fertilizer before and after sterilization
- Automatic lamp cleaning function using motor and sensor
- Improve performance by installing one 105W UV lamp
- Easy discharge of fluid held through drain holes
- Can be controlled by linking FARMTOS FRZ

Specifications

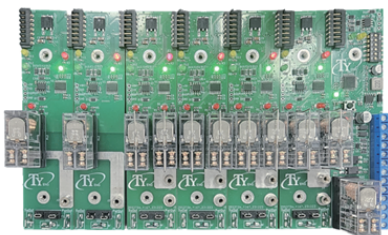| Model name	CUR-V10
Power(consumption)	AC 220V, one pahse (3.2K)
FRAME	SIZE: 450(W)* 1200(L)* 1200(H)
	WEIGHT: 80 kg
	STERILIZER: Stainless steel
	MATERIAL: STEEL / BLACK

Maximum flow	1 ton / h
STERILIZER	SIZE: 265* 570
	LAMP: 80 kgGPH1050T5L / HD
	OUTPUT: 105W * 1
	MATERIAL: STEEL / BLACK
	Wavelength: 253.7nm Lamp life span: 13,000 Hrs

Test Result

Category		Result		
		Initial concentration (CFU/ml)	concentration after (CFU/ml)	Decline rate(%)
E. coli	BLANK	2.0×10^5	2.0×10^5	-
	Recycle system (33.3 L/min)	2.0×10^5	< 10	99.9
Pseudo-monas aeruginosa	BLANK	2.5×10^5	2.5×10^5	-
	Recycle system (33.3 L/min)	2.5×10^5	< 10	99.9
Staphylo-coccus aureus	BLANK	2.2×10^5	2.2×10^5	-
	Recycle system (33.3 L/min)	2.2×10^5	< 10	99.9
Pneumo-coniosis	BLANK	1.6×10^5	1.6×10^5	-
	Recycle system (33.3 L/min)	1.6×10^5	< 10	99.9

Category		Result		
		Initial concentration (CFU/ml)	concentration after (CFU/ml)	Decline rate(%)
MRSA	BLANK	2.3×10^5	2.3×10^5	-
	Recycle system (33.3 L/min)	2.3×10^5	< 10	99.9
Candida bacteria	BLANK	2.5×10^5	2.5×10^5	-
	Recycle system (33.3 L/min)	2.5×10^5	< 10	99.9
Strepto-coccus	BLANK	2.3×10^5	2.3×10^5	-
	Recycle system (33.3 L/min)	2.3×10^5	< 10	99.9
Bacillus bacteria	BLANK	1.5×10^5	1.5×10^5	-
	Recycle system (33.3 L/min)	1.5×10^5	< 10	99.9

Complex Environment controller/ Switch

Features

- Smart Farm Korea National Standard Sensor

- Compatible with actuator

- Adjustable swithgear number due to greenhouse type

- No risk of electric shock on panel door part

- Simplified internal structure using dedicated boards

- Reduced run-off compared to previous nord

- Easy automatic and manual management conversion

- Check operation with front LED for individual channels

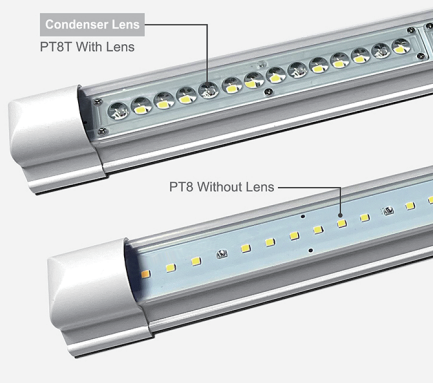- Remote automatic switching is possible through mobile

Specifications

Power	Standard 24V
Server comm	Standard modbus RTU
Board size	125 x 30mm
Connection	Direct to board output (via terminal)
Switch connection	Contact signal connection using 24v relay or magnet
Interlocking devices	All kinds of driver interlocking control are possible - Side and ceiling window - Curtain - Fan - Air conditioner - 3phase motor

FARMTOS
Glow Light

Condenser Lens
Improve PPFD

Condenser Lens
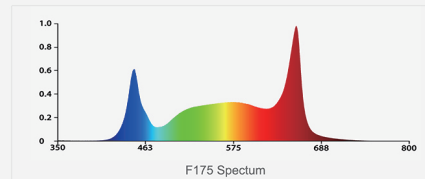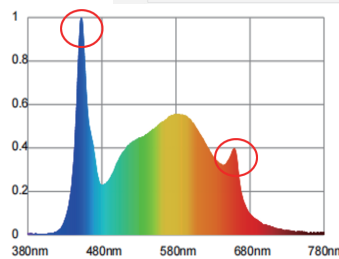PT8T With Lens

PT8 Without Lens

Features

LED type: Leaf vegetable, Strawberry, Special crops(marijuana)

- KC certified product

- High frequency test: suitable

- AC 220V, 30W, 1.2m

- Energy efficiency A ++

- Waterproff level : IP65

- PPFD : 300 ʮmol/m2/s (center)

- Life span: minimum 25,000 hrs

- minimize light deviation, Flicker free

- Overvoltage prevention filter application

- Optimal wavelegth for leaf vegetablecultibvtion

- 450 nm, 660 nm peak

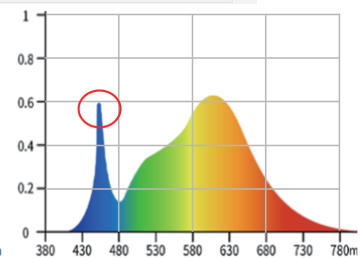- dial dimming(option), remote dimming(option)

방송통신기자재등의 적합등록 필증
Registration of Broadcasting and Communication Equipments

상호 또는 성명 Trade Name or Registrant	(주)디케이에코팜
기자재명칭(제품명칭) Equipment Name	LED grow tube light
기기부호/추가 기기부호 Equipment code Additional Equipment code	LIT11
기본모델명 Basic Model Number	FARMTOS_LED_VGT65
파생모델명 Series Model Number	
등록번호 Registration No.	R-R-xol-DKECO_LED_V65
제조자/제조국가 Manufacturer/Country of Origin	(주)디케이에코팜/한국
등록연월일 Date of Registration	2023-06-02
기타 Others	

위 기자재는 「전파법」 제58조의2 제3항에 따라 등록되었음을 증명합니다.
It is verified that foregoing equipment has been registered under the Clause 3, Article 58-2 of Radio Waves Act.

2023년 (Year) 06월 (Month) 02일 (Day)

국립전파연구원장
Director General of National Radio Research Agency

※ 적합등록 방송통신기자재는 반드시 **"적합성평가표시"** 를 부착하여 유통하여야 합니다.
위반시 과태료 처분 및 등록이 취소될 수 있습니다.

Optional Spectrum
F175 is suitable for Vegetable farming

F175 Spectum

DK Ecofarm's LED

Other company's LED

Major construction cases

Vertical Farm   Client: LOTTE data&communication, CJ, Boeun-gun AgriTech center, Dongkwang Tech etc.

Container Farm   Client: LOTTE data&communication, KT, SAFE, National Uni of Agriculture and Fisheries etc.

Greenhouse   Client: Wanju and Boen-gun AgriTech center, National Academy of Horticulture and Sciences etc.

Indoor cultivator   Client: Jungnang-gu Eco center, High-1 Resort etc.

Address

Head Office
Ballyong-ro 109, A-312, Deokjin-gu
Jeonju-si, Jeollabuk-do, Korea (54853)

Branch Office
Ogeun-ro 171, 5F,
Songpa-gu, Seoul, Korea (05641)

Tel : +82 2 868 6811
E-mail : info@dk-ecofarm.com

WWW.DKECOFARM.COM