Agnetix

Powerful.
Efficient.
Connected.

Agnetix is a highly-efficient, high powered, LED horticulture lighting system

that reduces facility operational costs by up to 70% over high pressure sodium (HPS) and provides real-time visibility to critical grow metrics for fast, smart decision-making.

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Agnetix A3

Agnetix A3 is a **high-performing** and extremely **energy-efficient LED horticulture light** delivering **up to 2.45 µmol/J**. Designed to be the connected backbone of the facility, the A3 has integrated USB and Power Over Ethernet ports for easy networking, light scheduling and crop visibility using advanced sensors and cameras.

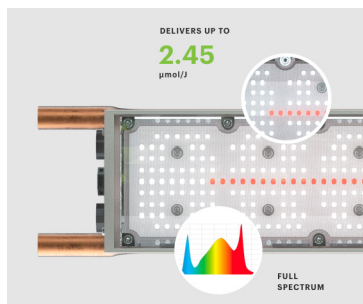| **2.45** µmol/J	**1200** WATTS	**2850** PPF		
Highly-Efficient	**High-Power**	**High Light Levels**	**Liquid-Cooled**	**Connected**

Super High Efficacy

A3 delivers full-spectrum light that is up to 2.45 PAR µmol/J, outperforming traditional lamps and other LED fixtures.

DELIVERS UP TO
2.45
µmol/J

FULL SPECTRUM

Liquid-cooled System

An integrated copper waterloop that efficiently eliminates 50% of the light's heat from the growth chamber, reducing energy use and operating costs.
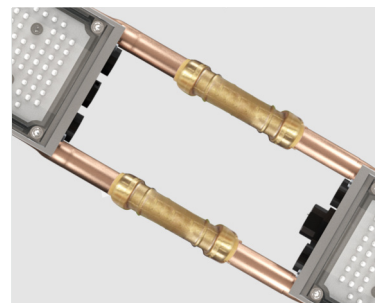

COOL   HOT
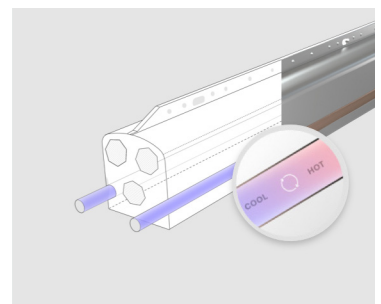
Advanced Sensors

The A3 is IoT enabled with USB and PoE ports integrated into the fixture, allowing for important data collection and crop visibility using the Agnetix HMI.
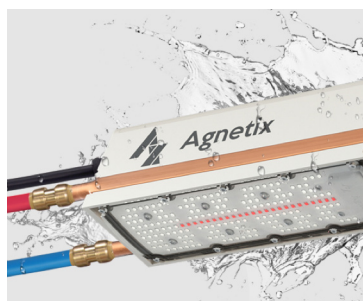

Camera + Sensor USB Ports

RJ-45 Ethernet Data port
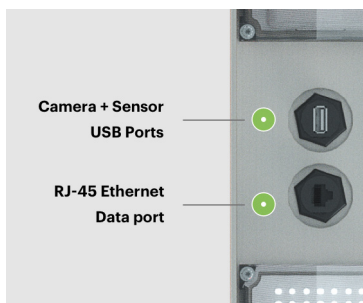
Simple Installation

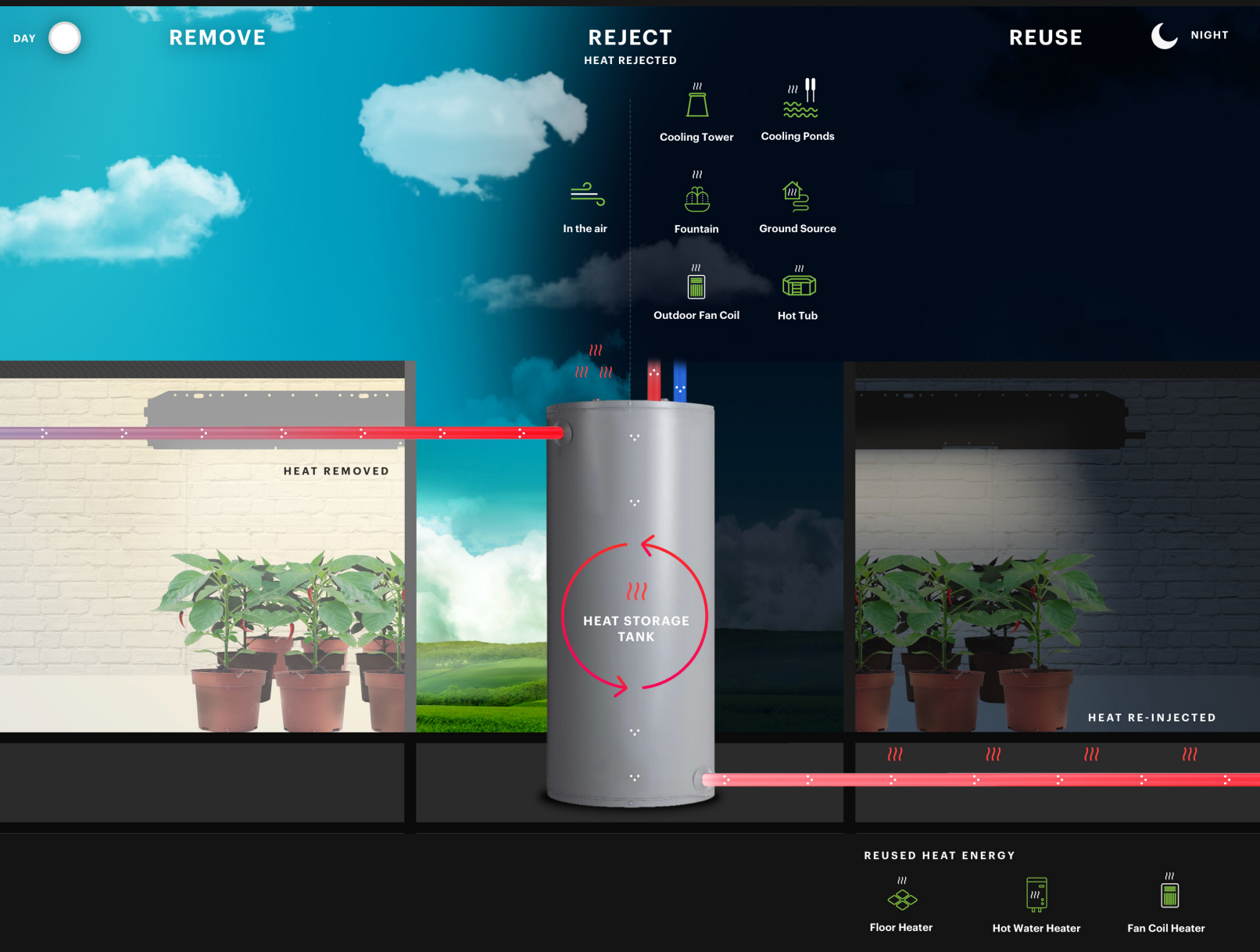Tool-less push-to-connect system is fast and simple to install

Waterproof Cable System

Plug-and play power cable and waterproof networking allows 10x faster and cheaper installation with no conduit and easy to wash down regularly.

Heat Recovery Technology

The Agnetix A3 platform significantly drives down operational costs with its **unique liquid-cooling and heat recovery system**. The system efficiently removes heat from the lights using a simple waterloop. Piped out of the room, the **heat can be rejected or easily reused** to warm the rest of the facility. This results in a more stable environment for **better plant comfort, reduced costs and better yields.**

DAY

REMOVE

REJECT
HEAT REJECTED

REUSE

NIGHT

In the air

Cooling Tower

Cooling Ponds

Fountain

Ground Source

Outdoor Fan Coil

Hot Tub

HEAT REMOVED

HEAT STORAGE TANK

HEAT RE-INJECTED

REUSED HEAT ENERGY

Floor Heater

Hot Water Heater

Fan Coil Heater

More stable & controllable environment

50% less heat from light than HPS

50% lower HVAC & Dehumidifier Loads

Save 20-100% on heating costs

Environmental Sensor Series

Agnetix all-in-one, environmental sensors connect very easily to the A3 and offer high-resolution, **horticulture readings of temperature, humidity, airflow, CO2, leaf temp** and more for precisely monitoring a grow cycle
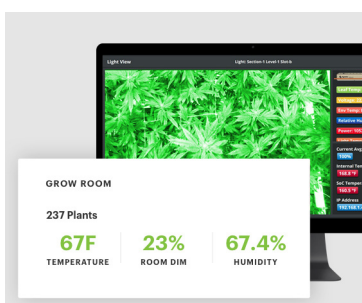
All-In-One

Connected

**Multi-point Visibility**

High-Value

Real-time & Historical Metrics

Clear and instant visibility to real-time data allow for immediate actions. Data is also stored for a historical analysis of the grow cycle.

GROW ROOM

237 Plants

67F	23%	67.4%
TEMPERATURE	ROOM DIM	HUMIDITY

Targeted Visibility

Sensors capture environmental information and images at the individual fixture level.

TOMATO ROOM

198 Plants

| 78F	17 m3/h	249 PPM
LEAF TEMPERATURE	AIRFLOW	CO₂
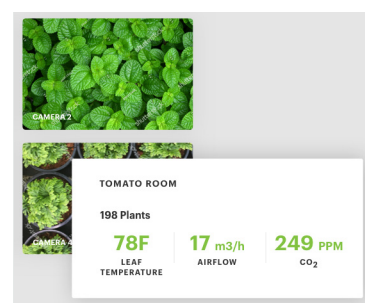
Indoor Grow Chambers

Environmental metrics such as Temperature, Humidity, Air Flow, CO2 and Leaf Temperature can be monitored remotely.

Greenhouse Environment

Unique all-in-one design captures critical data for monitoring and controlling a greenhouse.

160°
Light Sensor View Angle
19mm
IR Temperature View Angle
70°
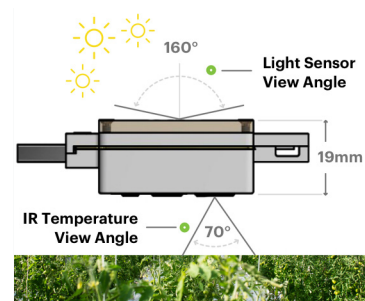
Human Machine Interface (HMI)

HMI is included with the A3 lighting system and delivers **visibility into a grow room's health**, providing growers with critical environmental and **plant data**. HMI provides an **intuitive dashboard** that enables secure and real-time visibility to environment and plant monitoring along with lighting control.

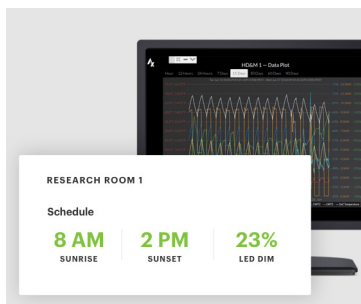**Room Management**

Light Control

Real-Time Data Monitoring
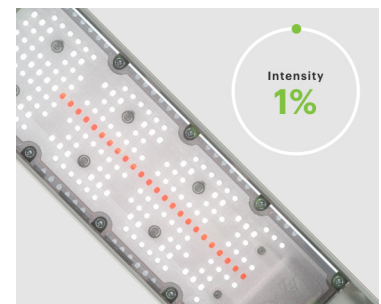

Bird's Eye View

Room Management

Clear and instant visibility to real-time data allow for immediate actions. Data is also stored for a historical analysis of the grow cycle.
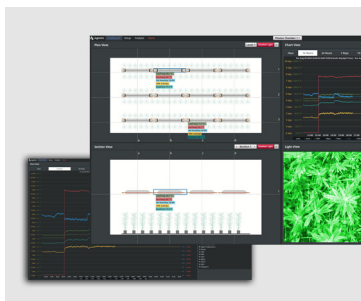

Light Control

Easily schedule and control light intensity of each fixture and monitor information such as temperature, and power consumption of the lights.
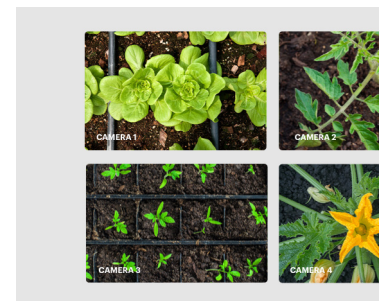

Real-Time Data Monitoring

Customize your view of critical metrics including humidity, temperature, CO2, lighting intensity and power consumption.
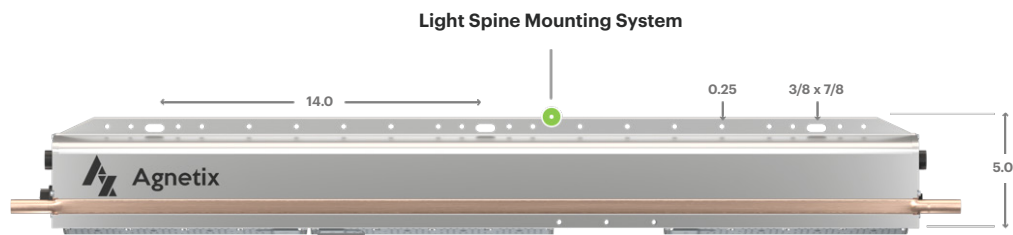

Bird's Eye View

Data ports on each fixture allow for downward-facing cameras allowing farmers to visually inspect and continuously monitor their crops in real time.

A3 Fixture

Front View

Light Spine Mounting System

14.0

0.25   3/8 x 7/8

5.0

Agnetix

Bottom View

RJ-45 Ethernet
Network Port w/ POE

1/2" Copper Tubing

LED Module   LED Module

USB
Port

LED Module

36.5

40 Nominal

Left View

0.25

RJ-45 Ethernet
Network Port
w/ POE

7/8 Power Cable
System Connection

Right View

RJ-45 Ethernet
Network Port w/ POE

USB
Port

3.33

3.7
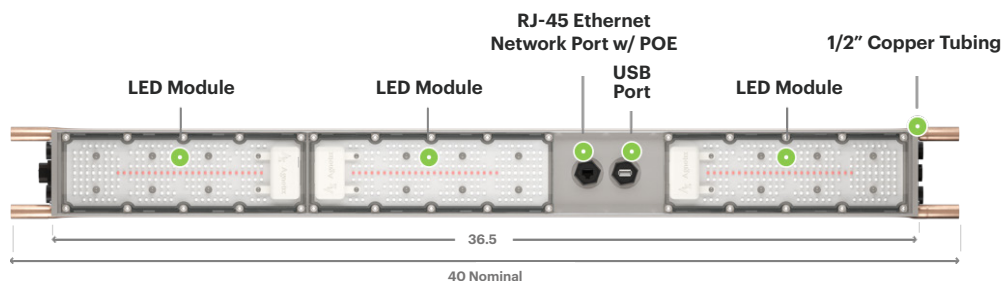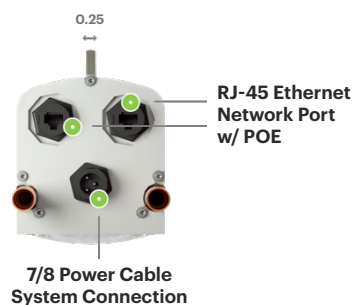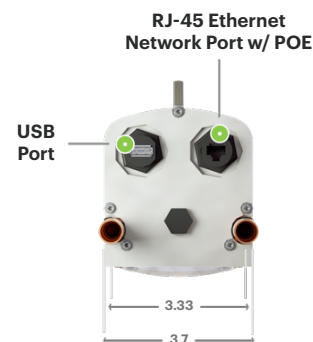
Spectral Distribution

White + 660nm Red

RELATIVE INTENSITY

1
0.8
0.6
0.4
0.2
0

300   400   500   600   700   800

WAVELENGTH (nm)

Beam Angle

120º
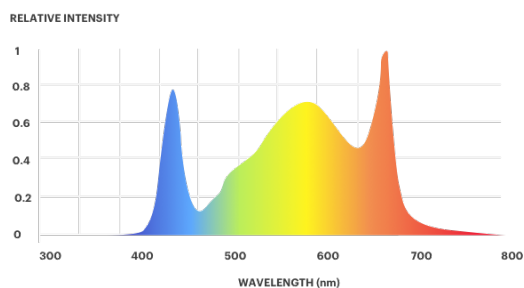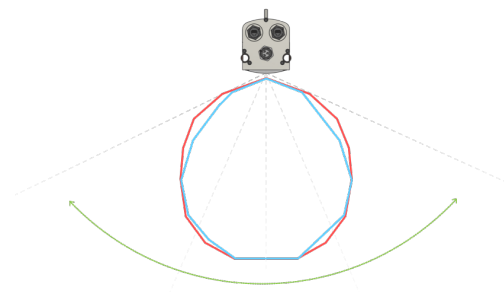
A3 Fixture

Product Specifications

Power	1200W
Efficacy	2.23 μmol/J A3 Standard Density 2.45 μmol/J A3 Double Density 3.2 μmol/J A3 HERO
Spectrum	A3 Standard/Double Density - White + 650nm Red (others by request) HERO - 660nm Red Only
Beam Angle	120º
Cooling	Twin 1/2" copper tubes
PPF	Standard 2,650 PPF Double Density 2,850 PPF HERO 4,000 PPF

Physical

Housing	Aluminum extrusion
Dimensions	36" x 4" x 5"
Tube Length	40"
Weight	15 lbs
Mounting	Through bolts on light spine (bolts not included)
Lens	Injection molded plastic

Power

Voltage	180-300 VAC
Current	5 Amps max
Power	1200W Wattage reduced under 240V
PF	>0.95
Frequency	50/60 Hz (Generator compatible)
Connector	Male 3-pin industrial type, UL2237

Optical

Modules	3
LEDs	Standard/Double Density - 5000K + 650nm HERO - 660nm Red only
Efficacy	2.23 μmol/J A3 Standard Density 2.45 μmol/J A3 Double Density 3.2 μmol/J A3 HERO
Beam Angle	120º

Control

Network	4 x 100Mb POE Ethernet
Connectors	4 x Waterproof 13/16 RJ45
Dimming	Down to 1%

Environment

Operating Conditions	-20°C (-4ºF) to 60°C (140ºF) / RH <95%
Storage Conditions (no liquid)	-20°C (-4ºF) to 80°C (176ºF) / RH <95%
IP Rating	IP66 - Wash down

Water Loop/Cooling

*Protect from freezing or use antifreeze

Fluid Temperature Limits	-20°C (-4ºF) to 75°C (167ºF)
Fluid Temperature Recommended	Dew point up to 40°C (104ºF)
Self Protection	65°C (149°F) - Full light to 75° C (167°F) - No light
Max Fluid Temp when using light for heat	75°C (167°F)
Fluid Connection	Twin exposed 1/2" copper tubing Push to connect Do not solder or crimp
Flow Rate	1 to 3 gpm per tube
Temp Rise	Depends on flow rate
Power Delivered to Water	~600W

Warranty and Lifetime

Product warranty (see terms and conditions)	5 years
LED Lifetime ISTMT TM-21 / LM-80	Q90 >60K hrs
Driver Lifetime (@85C internal temp, unit on)	MTTF >60K hrs

ETL
C LISTED US
Intertek

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Power Cabling

Power cables are ordered separately from fixtures. An unterminated cable of appropriate length may be ordered for retrofit applications.

The A3 utilizes a UL2237 Multi-point Interconnection Power Cable Assemblies for Industrial Machinery (PVVA listed power cable system) to reduce the time and expense of power wiring. The system parts are listed below. Up to 3 fixtures can be operated from one 15A cable.

For convenient connectivity, various lengths of waterproof network cables are available to connect fixtures. Long leader cables are used to run data to the network's central switch point.

Sample assemblies are displayed on Agnetix website. These show bills of materials for set lengths and PPFD at 6' and 12' row spacing.

Power Cables

**DROP TEES
(15A)**

**POWER CABLE
(15A AND 30A)**

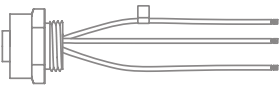**TEE-REDUCING
(30A TO 15A)**

Network Cables

**CAT-5 NETWORK CABLE
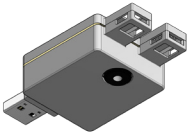(15A)**

**CAT-5 NETWORK CABLE
WATERPROOF (15A)**

Outlet

OUTLET (15A)
To be installed by your electrical contractor

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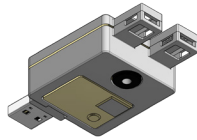
Sensors Collection

Full assortment of environmental sensors offers a variety of special tracking features specific to your application and needs.
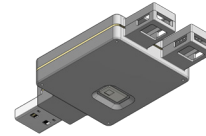
Indoor Applications

MKT S7-IN-L-00

- Air Temperature
- Humidity
- Air Flow
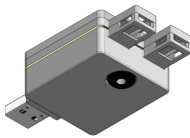- Leaf Temp

MKT S7-IN-C-L-00

- Air Temperature
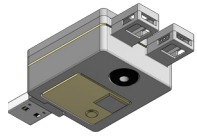- Humidity
- Air Flow
- Leaf Temp
- CO2

MKT S7-IN-IR-00

- Air Temperature
- Humidity
- Air Flow
- IR (Infrared) View

Greenhouse Applications

MKT S7-GH-L-00
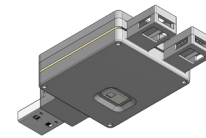
- Incoming/Ambient Light
- Air Temperature
- Humidity
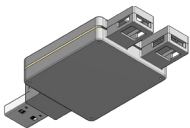- Air Flow
- Leaf Temp

MKT S7-GH-C-L-00

- Incoming/Ambient Light
- Air Temperature
- Humidity
- Air Flow
- Leaf Temp
- CO2

MKT S7-GH-IR-00

- Incoming/Ambient Light
- Air Temperature
- Humidity
- Air Flow
- IR (Infrared) View

Basic Environmental Sensor

MKT S7-ENV-00

- Air Temperature
- Humidity
- Air Flow

Ordering Information

A3 Fixture

A3-1200-Standard 2.23 µmol/J	**A3-1200-0000**
A3-1200-DD (Double Density) 2.45 µmol/J	**A3-1200-DD00**
A3-1200-HERO 3.2 µmol/J	**A3-1200-HERO**

Sensors

Indoor Sensors	**S7-IN-L-00**
	S7-IN-C-L-00
	S7-IN-IR-00
Greenhouse Sensors	**S7-GH-L-00**
	S7-GH-C-L-00
	S7-GH-IR-00
Basic Environmental Sensor	**S7-ENV-00**

Power Cables

7/8 Power Cable 1.6'	**CBL-3M22-0050-MF**
7/8 Drop Tee 1.6'	**CBL-3M22-0050-T**
7/8 Power Cable 4'	**CBL-3M22-0122-MF**
7/8 Power Cable 5'	**CBL-3M22-0152-MF**
7/8 Power Cable 6'	**CBL-3M22-0183-MF**
7/8 Power Cable 9'	**CBL-3M22-0275-MF**
7/8 Power Cable 11'	**CBL-3M22-0335-MF**
7/8 Power Cable 13'	**CBL-3M22-0395-MF**
7/8 Power Cable 20'	**CBL-3M22-0610-MF**
7/8 Power Cable 25'	**CBL-3M22-0762-MF**
7/8 Tee	**CON-3M22-0000-T**
7/8 Receptacle	**CON-3M22-0100-FP**

Network Cables

Cat-5 Waterproof 1.2'	**CBL-CAT5-0037-WW**
Cat-5 Waterproof 2.2'	**CBL-CAT5-0067-WW**
Cat-5 Waterproof 3.2'	**CBL-CAT5-0098-WW**
Cat-5 Waterproof 4.2'	**CBL-CAT5-0128-WW**
Cat-5 Waterproof 5.2'	**CBL-CAT5-0158-WW**
Cat-5 Waterproof 9.2'	**CBL-CAT5-0280-WW**
Cat-5 Waterproof 10.2'	**CBL-CAT5-0311-WW**
Cat-5 Leader 18'	**CBL-CAT5-0550-WS**
Cat-5 Leader 24'	**CBL-CAT5-0730-WS**
Cat-5 Leader 30'	**CBL-CAT5-0910-WS**
Cat-5 Leader 36'	**CBL-CAT5-1100-WS**
Cat-5 Leader 42'	**CBL-CAT5-1280-WS**
Cat-5 Leader 48'	**CBL-CAT5-1460-WS**
Cat-5 Leader 54'	**CBL-CAT5-1650-WS**
Cat-5 Leader 54'	**CBL-CAT5-1100-WS**
Cat-5 Leader 60'	**CBL-CAT5-1830-WS**

Controller

Human Machine Interface (HMI) Software	**HMI 2018** (4K Monitor not included)

Notes

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