SKYLARK

ALL IN ONE

CEA **HVAC** UNITS

For Hydroponic & Controlled Environment Agriculture

40 – 265 kW
COOLING CAPACITY

30 – 180 kg/h
DEHUMIDIFICATION

3100 – 20000 m³/h
AIR FLOW RATE



SKYLARK CEA HVAC UNITS

Areca

SKYLARK ALL IN ONE CEA HVAC UNIT

- **All-in-one design:** Cooling, dehumidification and reheat in a single packaged unit, complete with its own compressors, condensing section and EC fans.
- **Developed for CEA:** Designed for hydroponic farms and other controlled environment agriculture (CEA) applications.
- **Wide capacity range:** Six models in three casing sizes cover 40 – 265 kW of cooling and 30 – 180 kg/h of dehumidification.
- **Defined operating window:** Each model is rated at a minimum and a maximum operating point, making it easy to match the unit to the actual load.



Technical Highlights of the Skylark Range

- Supply air at 19.3 – 20 °C and 33.9 – 51.8 % relative humidity at the rated operating points.
- Integrated reheat of 16 – 107.2 kW, depending on model and operating point.
- Airflow rate of 3100 – 20000 m^3/h
- All models use EC radial fans on the evaporator side and EC axial fans on the condenser side.
- All performance data are rated at 35 °C outdoor air temperature and 40.3 % outdoor relative humidity.

SKYLARK PRODUCT RANGE

The Skylark range comprises six models in three casing sizes, with two models per casing. Each model is rated at a minimum and a maximum operating point; the figures below show the resulting range for each model.

40 – 265 kW
COOLING CAPACITY

30 – 180 kg/h
DEHUMIDIFICATION

3100 – 20000 m³/h
AIR FLOW RATE

OPERATING PRINCIPLE

1
COOL & DRY
Return air is cooled below its dew point on the evaporator coil, so moisture condenses out.
30 – 180 kg/h

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2
REHEAT
The cold, dry air is reheated to the required supply temperature.
16 – 107.2 kW

›

3
SUPPLY
Conditioned air is delivered to the growing area.
19.3 – 20 °C
33.9 – 51.8 % RH

4
REJECT HEAT
EC axial fans on the condensing section reject the heat to outdoor air.
6000 – 18000 m³/h

PRODUCT RANGE OVERVIEW

Casing	Model	Cooling Capacity	Dehumidification Capacity	Reheat Capacity	Air Flow Rate	Total Power Consumption
		kW	kg/h	kW	m³/h	kW
Case 1	Skylark 40	40 – 58	30 – 40	16 – 22	3100 – 5500	12.1 – 18.9
	Skylark 60	70 – 85	50 – 60	28.5 – 33.5	5500 – 10000	23.2 – 25.8
Case 2	Skylark 80	100 – 116	70 – 80	38.8 – 41.8	8000 – 11000	29.5 – 33.7
	Skylark 110	120 – 143	95 – 110	49.9 – 50.7	11000 – 15000	37.5 – 41.4
Case 3	Skylark 140	170 – 198	120 – 140	73.8 – 79.5	14000 – 16000	50.5 – 63.3
	Skylark 180	210 – 265	150 – 180	85.9 – 107.2	16000 – 20000	65.6 – 99.8

CASE 1

SKYLARK 40 & 60

ALL IN ONE CEA HVAC UNITS

TECHNICAL DATA

RATED PERFORMANCE

Case 1 · Skylark 40 and Skylark 60 · Minimum and Maximum Rated Operating Points

		Skylark 40		Skylark 60	
Parameter	**Unit**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Performance					
Cooling Capacity	kW	40	58	70	85
Total Power Consumption	kW	12.1	18.9	23.2	25.8
Dehumidification Capacity	kg/h	30	40	50	60
Reheat Capacity	kW	16	22	28.5	33.5
Air Side					
Air Flow Rate	m^3/h	3100	5500	5500	10000
Supply Air Conditions					
Supply Air Temperature	°C	19.6	19.6	19.8	20
Supply Air Relative Humidity	%	45.3	34.7	35.2	51.8
Rating Conditions – Outdoor Air					
Outdoor Air Temperature	°C	35			
Outdoor Relative Humidity	%	40.3			

40 – 85 kW
COOLING CAPACITY

30 – 60 kg/h
DEHUMIDIFICATION

3100 – 10000 m^3/h
AIR FLOW RATE

SKYLARK CEA HVAC UNITS

CASE 2

SKYLARK 80 & 110

ALL IN ONE CEA HVAC UNITS

TECHNICAL DATA

RATED PERFORMANCE

Case 2 · Skylark 80 and Skylark 110 · Minimum and Maximum Rated Operating Points

		Skylark 80		Skylark 110	
Parameter	**Unit**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Performance					
Cooling Capacity	kW	100	116	120	143
Total Power Consumption	kW	29.5	33.7	37.5	41.4
Dehumidification Capacity	kg/h	70	80	95	110
Reheat Capacity	kW	38.8	41.8	49.9	50.7
Air Side					
Air Flow Rate	m^3/h	8000	11000	11000	15000
Supply Air Conditions					
Supply Air Temperature	°C	19.3	19.3	19.6	19.3
Supply Air Relative Humidity	%	37.7	47	40.4	51.3
Rating Conditions – Outdoor Air					
Outdoor Air Temperature	°C	35			
Outdoor Relative Humidity	%	40.3			

100 – 143 kW
COOLING CAPACITY

70 – 110 kg/h
DEHUMIDIFICATION

8000 – 15000 m^3/h
AIR FLOW RATE

SKYLARK CEA HVAC UNITS

CASE 3

SKYLARK 140 & 180

ALL IN ONE CEA HVAC UNITS

TECHNICAL DATA

RATED PERFORMANCE

Case 3 · Skylark 140 and Skylark 180 · Minimum and Maximum Rated Operating Points

		Skylark 140		Skylark 180	
Parameter	**Unit**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Performance					
Cooling Capacity	kW	170	198	210	265
Total Power Consumption	kW	50.5	63.3	65.6	99.8
Dehumidification Capacity	kg/h	120	140	150	180
Reheat Capacity	kW	73.8	79.5	85.9	107.2
Air Side					
Air Flow Rate	m^3/h	14000	16000	16000	20000
Supply Air Conditions					
Supply Air Temperature	°C	19.8	19.8	19.9	19.8
Supply Air Relative Humidity	%	34.8	36.9	33.9	33.9
Rating Conditions – Outdoor Air					
Outdoor Air Temperature	°C	35			
Outdoor Relative Humidity	%	40.3			

170 – 265 kW
COOLING CAPACITY

120 – 180 kg/h
DEHUMIDIFICATION

14000 – 20000 m^3/h
AIR FLOW RATE

SKYLARK CEA HVAC UNITS

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CEA **HVAC** UNITS



SKYLARK UNITS CEA HVAC

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