1. Specifications

ARUN100LSS5

| | Category | Unit | Specification | | | | |
|---------------------------------------|--|--------------|---|--|--|--|--|
| Major | Minor | | opecification | | | | |
| | Chassis | - | U80A | | | | |
| | Combination Unit (1) | - | ARUN100LSS5 | | | | |
| Classification | Combination Unit (2) | - | - | | | | |
| | Combination Unit (3) | - | - | | | | |
| | Combination Unit (4) | - | - | | | | |
| | Case 1 | V, Phase, Hz | 380-400-415, 3, 50 | | | | |
| | Limit Range of Voltage(Case 1) | V | 342~456 | | | | |
| | Case 2 | V, Phase, Hz | 380, 3, 60 | | | | |
| Power Supply | Limit Range of Voltage(Case 2) | V | 342~418 | | | | |
| | Running Current by Voltage (Cooling,Rated) | A | 15.83 - 15.04 - 14.50 | | | | |
| | Running Current by Voltage (Heating,Rated) | A | 11.13 - 10.57 - 10.19 | | | | |
| | | kW | 28.0 | | | | |
| Cooling Capacity | Rated | Btu/h | 95,900 | | | | |
| | | kW | 28.0 | | | | |
| | Rated | Btu/h | 95,900 | | | | |
| Heating Capacity | | kW | 30.6 | | | | |
| | Max | Btu/h | 104,400 | | | | |
| Power Input(Cooling) | Rated | kW | 9.69 | | | | |
| Power Input(Heating) | Rated | kW | 6.81 | | | | |
| · · · · · · · · · · · · · · · · · · · | EER(Rated) | W/W | 2.89 | | | | |
| | COP(Rated) | W/W | 4.11 | | | | |
| Efficiency | SEER | Wh/Wh | 6.59 | | | | |
| | SCOP | Wh/Wh | 4.42 | | | | |
| | ns.c | % | 260.6 | | | | |
| | ns,h | % | 173.8 | | | | |
| Power Factor(Cooling/Heating) | Rated | - | 0.93 / 0.93 | | | | |
| | Туре | - | Propeller fan | | | | |
| | Air Flow Rate(High) | m³/min | 210 | | | | |
| Outdoor Fan | Max. External Static Pressure | Pa | - | | | | |
| | Discharge direction(Side / Top) | - | Side | | | | |
| | Туре | - | BLDC | | | | |
| Outdoor Fan Motor | Drive | - | DC INVERTER | | | | |
| | Output | W x No. | 250 x 2 | | | | |
| | Туре | - | Hermetically Sealed Scroll | | | | |
| | Piston Displacement | cm³/rev | 62.1 | | | | |
| Comprossor | Number of Revolution | rev./min | 3,600 | | | | |
| Compressor | Motor Output | W x No. | 5300 x 1 | | | | |
| | Starting Method | - | Inverter | | | | |
| | Oil Type | - | FW68L(PVE) | | | | |
| | Туре | - | Fin & Tube | | | | |
| Heat Exchanger | No. | - | 2 | | | | |
| | Fin Type | - | Wide Louver Plus | | | | |
| Dimonsions | Net(W x H x D) | mm | 1,090 x 1,625 x 380 | | | | |
| Dimensions | Shipping(W x H x D) | mm | 1,215 x 1,795 x 500 | | | | |
| Weight | Net | kg | 139 | | | | |
| | Shipping | kg | 154 | | | | |
| Exterior | Color | - | Warm Gray | | | | |
| | RAL (Classic) | - | RAL 7044 | | | | |
| | High Pressure Prevention | - | High pressure sensor / High pressure switch | | | | |
| Protection Device | Frost Prevention | - | O (Logical) | | | | |
| | Discharge Tempreature Control | - | O (Logical) | | | | |

1. Specifications

| | Category | 11:5 | Specification | | | | |
|--|---|-------------------------|--|--|--|--|--|
| Major | Minor | Unit | Specification | | | | |
| Protection Device | Compressor/Fan Protection | - | Over-heat protection / Fan driver overload protector | | | | |
| | Inverter Protection | - | Over-heat protection / Over-current protection | | | | |
| | Туре | - | R410A | | | | |
| | Precharged Amount | kg | 4.5 | | | | |
| Refrigerant | GWP(Global Warming Potential) | - | 2,087.5 | | | | |
| | t-CO ₂ eq. | - | 9.394 | | | | |
| | Control Type | - | Electronic Expansion Valve | | | | |
| | Liquid | mm(inch) | Ф9.52 (3/8) | | | | |
| Connecting Bine | Gas | mm(inch) | Ф22.22 (7/8) | | | | |
| | Low Pressure Gas (Heat Recovery) | mm(inch) | - | | | | |
| | High Pressure Gas (Heat Recovery) | mm(inch) | - | | | | |
| | Liquid | - | Brazing | | | | |
| | Gas | - | Brazing | | | | |
| | Low Pressure Gas (Heat Recovery) | - | - | | | | |
| | High Pressure Gas (Heat Recovery) | - | - | | | | |
| Sound Pressure Level (Outdoor Unit) | Cooling / Heating | dB(A) | 58.0 / 58.0 | | | | |
| Measurement Standard (Pressure Leve I) | - | - | ISO 3745 | | | | |
| Sound Power Level (Outdoor Unit) | Cooling / Heating | dB(A) | 75.0 / 81.0 | | | | |
| Measurement Standard (Power Level) | - | - | ISO 9614 | | | | |
| Connecting Cable | Communication Cable(VCTF-SB) | mm ² × cores | 1.0~1.5 x 2 | | | | |
| | Minimium Circuit Amperes (MCA) | A | 25.5 | | | | |
| | Maximum Fuse Amperes (MFA) | A | 30.0 | | | | |
| | Total Over Current Amperes (TOCA) | A | 28.0 | | | | |
| Electrical Characteristic | Comp_Maximum Starting Current (MSC) | A | 5.9 | | | | |
| | Comp_Rated Load Amperes (Cooling) | A | 9.3 | | | | |
| | Comp_Rated Load Amperes (Heating) | A | 9.5 | | | | |
| | Outdoor Fan Motor_Full Load Amperes (FLA) | A | 2.4 | | | | |
| Connectable indoor units number | Max. (Conditional) | Units | 16 | | | | |

Note

Due to our policy of innovation some specifications may be changed without notification.

■Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

■Power factor could vary less than ±1% according to the operating conditions.

Sound level values are depend on the ambient conditions and values are normally higher in actual operation.

Sound values of combination model are calculated values based on sound results of independent models.

Sound values can be increased owing to ambient or installation conditions during operation.

Sound values of system [dB(A)] = 10*log [10^(A1/10)+ ... +10^(An/10)], A1~An means sound values of independent models.

■EUROVENT Test Condition :

-Performance values on the this PDB are based on Ceiling Mounted Cassette combination.

-Refer to EUROVENT web site (www.eurovent-certification.com) for other indoor unit combination and more detail test conditions.

■Use appropriate power source refer to national standard.

■Voltage supplied to the unit terminals should be within the minimum and maximum range.

■Maximum allowable voltage unbalance between phase is 2%.

■MSC means the Max. current during the starting of compressor.

MSC and RLA are measured as the compressor only test condition.

OFM are measured as the outdoor unit test condition.

TOCA means the total over current value of each outdoor unit.

Select the wire size based on the larger value among MCA or TOCA.

MFA is used to select the circuit breaker and ground fault circuit interrupter, and all installation site must require attachment of an earth leakage breaker. [circuit breaker type is ELCB(Earth Leakage Circuit Breaker)].

Performances are based on the following conditions :

- Cooling : Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB

- Heating : Indoor Ambient Temp. 20°CDB / 15°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB

- Interconnected Pipe Length is 7.5m and difference of Elevation (Outdoor ~ Indoor Unit) is 0m.

3. Accessory Compatibility List

ARUN080LSS5, ARUN100LSS5, ARUN120LSS5

| Category | Accessory Name | Model Name | Description | Compatibility |
|--------------------|------------------------|------------|--|---------------|
| | AC EZ | PQCSZ250S0 | - | 0 |
| | AC EZ touch | PACEZA000 | Touch type | 0 |
| Central Controller | AC Smart IV | PACS4B000 | Touch type | 0 |
| | AC Smart 5 | PACS5A000 | Touch type | 0 |
| | ACP IV | PACP4B000 | - | 0 |
| | ACP 5 | PACP5A000 | - | 0 |
| | AC Manager IV | PACM4B000 | For Integrated Control | 0 |
| | AC Manager 5 | PACM5A000 | For Integrated Control | 0 |
| | ACP BACnet | PQNFB17C0 | - | 0 |
| | ACP Lonwork | PLNWKB000 | - | 0 |
| Gateway | Cloud Gateway | PWFMDB200 | ThinQ, BECON cloud | 0 |
| | Modbus RTU Gateway | PMBUSB00A | To interwork with 3rd Party Controller or BMS for Multi V / ERV (DX) / AWHP / Hydrokit | 0 |
| | IO Module | PVDSMN000 | ODU Dry Contact | 0 |
| | Al Module | PACTLA000 | For application of AI function | х |
| | Cool/Heat Selector | PRDSBM | - | 0 |
| | | PAHCMR000 | For AHU Control (Multi V / Single ODU Communication) | 0 |
| | | PAHCMS000 | For AHU Control (Multi V / Single ODU Communication) | 0 |
| | AHLL Controllor Modulo | PAHCMC000 | For AHU Control (Communication Module) | 0 |
| | And Controller Module | PAHCMM000 | For AHU Control (Main Module) | 0 |
| Integration Device | AHU Control kit | PAHCNM000 | Maximum Connectable ODU is 3 Units | х |
| | | PRLK048A0 | Capacity Range(~ 28kW) | Х |
| | | PRLK096A0 | Capacity Range(~ 56kW) | х |
| | | PRLK396A0 | Capacity Range(~ 112kW) | х |
| | | PRLK594A0 | Capacity Range(~ 168kW) | Х |
| | Water comm. module | PAHCMW000 | Water Communication Module | Х |
| | PDI Standard | PPWRDB000 | Power distributor 2port | 0 |
| | PDI Premium | PQNUD1S40 | Power distributor 8port | 0 |
| ETC | DS(Data Saving) Module | PVDATN000 | Data Saving Module | 0 |

Note

■ O: Possible, X: Impossible, - : Unconfirmed or irrelevant, Embedded : Included with product.

• * : Some advanced functions controlled by individual controller cannot be operated.

If there is a difference in development time between the product and the remote controller, some functions cannot be operated.

AC Manager requires ACP or AC Smart.

If you need more detail, please refer to the Control(BECON) PDB or the manual of product. (<u>http://partner.lge.com</u> > Select Your Region : Home> Doc.Library> Product > Control(BECON))

4. Dimensions

ARUN100LSS5, ARUN120LSS5



8. Capacity Correction Factor

8.1 Cooling Operation

ARUN080LSS5, ARUN100LSS5, ARUN120LSS5

| Level | Capacity correction factor (%) by equivalent pipe length (m) | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| (=IDU-ODU) (m) | 7.5 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 | 190 | 200 | 210 | 220 | 225 |
| -50 | - | - | - | - | - | - | 92.0 | 89.0 | 89.0 | 88.0 | 86.0 | 85.0 | 84.0 | - | - | - | - | - | - | - | - | - | - | - |
| -40 | - | - | - | - | 94.0 | 93.0 | 92.0 | 89.0 | 89.0 | 88.0 | 86.0 | 85.0 | 84.0 | - | - | - | - | - | - | - | - | - | - | - |
| -30 | - | - | - | - | 94.0 | 93.0 | 92.0 | 90.0 | 89.0 | 88.0 | 86.0 | 85.0 | 84.0 | - | - | - | - | - | - | - | - | - | - | - |
| -20 | - | - | - | 97.0 | 94.0 | 93.0 | 92.0 | 90.0 | 89.0 | 88.0 | 86.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| -10 | - | 99.0 | 98.0 | 97.0 | 94.0 | 93.0 | 92.0 | 90.0 | 89.0 | 88.0 | 86.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| -7.5 | 100.0 | 99.0 | 98.0 | 97.0 | 94.0 | 93.0 | 92.0 | 90.0 | 89.0 | 88.0 | 86.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 0 | 100.0 | 99.0 | 98.0 | 97.0 | 94.0 | 93.0 | 93.0 | 90.0 | 89.0 | 89.0 | 86.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 7.5 | 100.0 | 99.0 | 98.0 | 97.0 | 94.0 | 93.0 | 93.0 | 90.0 | 89.0 | 89.0 | 86.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 10 | - | 99.0 | 98.0 | 98.0 | 94.0 | 93.0 | 93.0 | 90.0 | 89.0 | 89.0 | 86.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 20 | - | - | - | 98.0 | 94.0 | 94.0 | 93.0 | 90.0 | 89.0 | 89.0 | 87.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 30 | - | - | - | - | 95.0 | 94.0 | 93.0 | 90.0 | 90.0 | 89.0 | 87.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 40 | - | - | - | - | 95.0 | 94.0 | 93.0 | 90.0 | 90.0 | 89.0 | 87.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |
| 50 | - | - | - | - | - | - | 93.0 | 91.0 | 90.0 | 89.0 | 87.0 | 86.0 | 85.0 | - | - | - | - | - | - | - | - | - | - | - |

Note

These figures indicate the rate of change in capacity of a standard indoor unit system at maximum load under standard conditions. (Moreover, under partial load conditions there is only a minor deviation from the rate of change in capacity shown in the above figures.)

With this outdoor(outside) unit, evaporating pressure constant control when cooling, and condensing pressure constant control when heating is carried out.

If heat insulation of piping is insufficient, heat loss will become larger and capacity will decrease.

Method of calculating cooling / heating capacity = maximum cooling / heating capacity of outdoor(outside)units = cooling / heating capacity of outdoor(outside) units obtained from capacity table x capacity correction factor due to piping length to the farthest indoor unit.

Equivalent piping length for Y Branch and other pipes can be calculated with following table.

| Piping Diameter [mm(inch)] | Ø6.35 (1/4) | Ø9.52 (3/8) | Ø12.7 (1/2) | Ø15.88 (5/8) | Ø19.05 (3/4) | Ø22.2 (7/8) | Ø25.4 (1) | Ø28.58 (1-1/8) | Ø31.8 (1-1/4) | Ø34.9 (1-3/8) | Ø38.1 (1-1/2) | Ø41.3 (1-5/8) | Ø44.5 (1-3/4) | Ø53.98 (2-1/8) |
|-------------------------------|----------------|----------------|----------------|-----------------|-----------------|----------------|--------------|-------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| Elbow(m) | 0.16 | 0.18 | 0.20 | 0.25 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.85 |
| Y Branch(m) | | 0.50 | | | | | | | | | | | | |
| Header(m) | | 1.00 | | | | | | | | | | | | |
| HR unit(m) | | 0.25 | | | | | | | | | | | | |

When the any one (or both) of below conditions are satisfied, the diameter of main pipe must be increased.

- The equivalent length between outdoor(outside) unit and the farthest indoor unit is 90m or more

(Liquid or Gas pipes are increased in accordance with below table)

- The level difference (outdoor(outside) unit <-> Indoor unit) is 50m or more (Only liquid pipe is increased)

Refer to the table (Refrigerant pipe diameter from outdoor(outside) unit to first branch.) in the 'installation of outdoor(outside) units' part.

Read cooling / heating capacity rate of change in the above figures based on the following equivalent length. Overall equivalent length = (equivalent length of main pipe) x correction factor + (equivalent length after first branching)

| Rate of Change (object piping) | Correction factor | | | | | | | | | | |
|-----------------------------------|-------------------|-----------------------|-----------------------|-----------------------|--|--|--|--|--|--|--|
| | standard size | size increase | | | | | | | | | |
| | Standard Size | Capacity Class ≤ 34HP | Capacity Class ≤ 60HP | Capacity Class ≥ 62HP | | | | | | | |
| Cooling(Gas pipe) | 1 | 0.5 | 0.5 | - | | | | | | | |
| Heating(Liquid pipe) | 1 | 0.2 | 0.4 | 0.4 | | | | | | | |

※ Accordance with product type(operation mode), target region, model line up could be different. Apply the correction factor after selecting that according to the unit capacity.

Calculation Example for overall equivalent length

* Installation condition : Model capacity = 8HP, Main pipe length = 30m, Branch pipe length = 30m, HU=0m

(Maximum pipe length and limit condition will be different by each model. Use this example only for reference.)

: Overall equivalent pipe length for Cooling = 30m x 0.5 + 30m = 45m

: Overall equivalent pipe length for Heating = 30m x 0.2 + 30m = 36m

* The rate of change in

Read the correction factor value condition on length = 45m and HU = 0 in Cooling correction factor table.

Read the correction factor value condition on length = 36m and HU = 0 in Heating correction factor table.

10. Sound Levels

ARUN100LSS5



Sound level [dB(A), @ Standard condition] Cooling / Heating 58.0 / 58.0

Note

- Data is valid at diffuse field condition.
- Data is valid at nominal operating condition.
- Reference accoustic pressure 0dB = 20µPa.
- Refer to the model specifications for nominal conditions. (Power source and Ambient temperature, etc)
- Sound levels can be increased in accordance with installation and operating conditions.
- (Operating conditions include some functional condition like Static pressure mode, air guide use, Room target temperature setting, etc and these functions are different in accordance with each model.)
- Sound level will vary depending on a range of factors such as the construction(acoustic absorption coefficient) of particular room in which the equipment in installed.
- Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Therefore, these values can be increased owing to ambient conditions during operation.



9. Operation Limits

9.1 Cooling Operation

ARUN080LSS5, ARUN100LSS5, ARUN120LSS5



Note

■ These figures assume the following operating conditions

: Equivalent piping length is standard condition, and level differenc is 0m.

Range of pull down operation: If the relative humidity is too high, cooling capacity can be decreased by the sensible heat reduction.

Warming up operation means that the outdoor(outside) unit operates to reach the range of continuous operating, however it may not operate continuously due to safety or protection logic.