

# MULTI V<sub>tm</sub> 5 PRO

## Total Air Solution Provider



## **OUTDOOR UNITS LINE-UP**

Appearance

Appearance

B 10 12 14 16 18 20 22 24 26 28 30 32

Appearance

Dual Sensing Control

Large capacity ODU (Up to 26HP)

Compact footprint & Light Weight

Black Fin heat exchanger

Heat pump function

For large space, high rise building and individual control building

Flexible combination of Outdoor Units

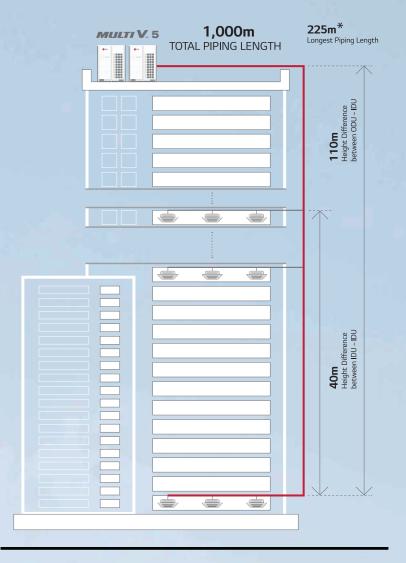
34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 ... 104

Unit : HP / ● 380V, 3Ø

# MULTI V<sub>m</sub> 5 PRO

- Air cooled VRF Heat Pump
- 22.4kW ~ 291.2kW (Cooling capacity based)
- 3Ø, 380 ~ 415V, 50Hz
- Top discharge outdoor unit







Energy savings



Reliabilit



Low nois



#### How does it work?

Dual Sensing



\* To aplly conditional application

## AS A TOTAL HVAC & ENERGY SOLUTION PROVIDER



## **HVAC TOOL & SUPPORT**

From planning to service & maintenance and then to de-construction, an architectural project goes along many stages from the beginning to the end of its lifecycle. Along those stages, various engineering tools are applied to solve the diverse issues happening in each stage, with the most optimal solution possible. Due to the usage of such tools, buildings are effectively designed, built, supervised, and maintained throughout the lifecycle.

Dedicated to provide the best HVAC engineering support, LG Electronics Air-Solution Business Unit offers several engineering tools and solutions focused on HVAC, during the overall lifecycle of a building, related to the three categories: I. Draft Energy Estimation & Energy Modeling, II. Model Selection & Design, and III. Installation Environment Simulation. Among them, the LATS\* Program series has been developed to offer the best and the most optimized tool for LG HVAC systems, providing our customers a faster, easier, and a more accurate way in everyday duties of Model-selection, Draft Energy Estimation & Designing, and many more.

\* LATS: LG Air-conditioner Technical Solution

# 

#### 01 Draft Energy Estimation

LATS Energy

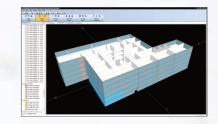
LATS Energy program is a draft energy estimation program, self-developed by LG. This program helps estimate the draft energy usage and analyzes the life cycle cost of LG VRF models during the early stage of a project.



#### 02 Building Energy Modeling

eQuest, EnergyPro, Trace700 and More

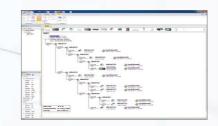
These are certified commercial programs which assess the HVAC system efficiency and building's annual energy saving for building standard or certification like LEED. LG HQ supports these programs for the project stages of Design Development and Construction Design wherein the overall designing is finished.



#### 03 Model Selection

LATS HVAC

LATS HVAC is an integrated model selection program of LG HVAC products, enabling an accurate and quick selection on the best model suitable to each sites. In addition to model selection, faster estimation on refrigerant piping diameter and additional refrigerant is possible, along with auto printing of reports.



#### 04 Design

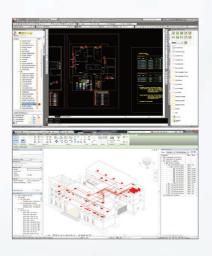
LATS CAD

LATS CAD enables faster and a more accurate design of LG HVAC products.

Moreover, it offers not only designing, but also quotation and installation review in order to minimize problems during installation processes.

#### LATS Revit

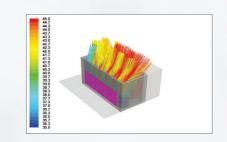
LATS REVIT is developed to make 3D designing of LG HVAC products easier than the previous program. It enables engineers to check 3D images from designing stage and prevents possible issues of the installation stage.



#### 05 Installation Environment Simulation

CFD Analysis

CFD Analysis is applied in areas of estimating: indoor airflow and temperature distribution while operating VRF products, outdoor airflow distribution, and noise level. By running a simulation before construction, engineers estimate possible issues and find optimal solutions of malfunction that could occur after construction.



## **LG CONTROL SOLUTION**

MULTI V 5 PRO offers diverse range of effective control solutions that satisfy specific needs of each building and its user scene. These controlling systems are equipped with user friendly interface, flexible interlocking environment, energy management and smart individual controller for optimized controlling conditions and smart building management.





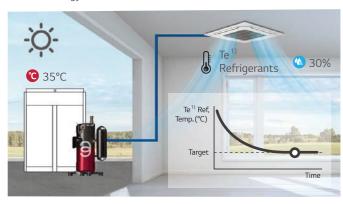
## **COMFORT**

#### **Dual Sensing Control** Dry Summer

Dual Sensing SLC is a function that changes evaporation temperature according to temperature & humidity.

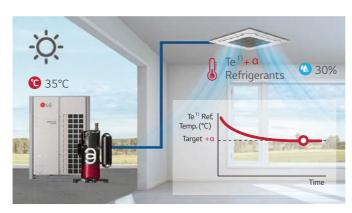
#### **MULTI V IV PRO**

- Single sensing Smart Load Control (Temperature only)
- Excessive latent heat elimination regardless of humidity
- Waste Energy to eliminate latent heat



#### **MULTI V 5 PRO**

- Comfortable environment by making the room less dry
- Increased Seasonal Efficiency



### **Dual Sensing Control** Wet Summer

In wet summer season, the system senses the high humidity level and increases operating ratio to decrease humidity level rapidly for making room condition in comfort zone.

#### **MULTI V IV PRO**

- High humidity condition is not considered by only sensing the room temperature.
- General latent heat elimination regardless of humidity



- \* Dual Sensing Control requires Standard III Wired Remote Controller (option).

#### **MULTI V 5 PRO**

- · Comfortable environment
- With quick latent heat elimination by sensing humidity
- At higher humidity, the compressor runs more powerfully



## Dual Sensing Control with Temperature & Humidity Sensor

MULTI V 5 PRO can provide better comfort environment and save energy by referring indoor humidity level. MULTI V 5 PRO can be operated by dual sensors for comfort and effective operation. (Temperature & Humidity)



## **Comfort Cooling**

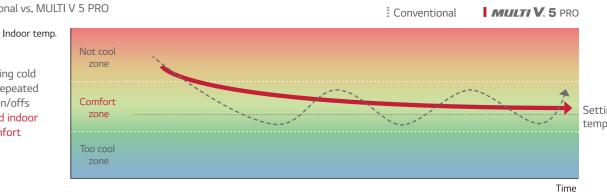
Without stopping in between operations, this function allows MULTI V 5 PRO to maintain operation at mild cooling mode around the set temperature by sensing both temperature and humidity with Dual Sensing Control. By preventing both cold draft and repeated turn on/offs previously required to match the set temperature, users can experience more comfortable indoor environment.



#### Cooling operation comparison

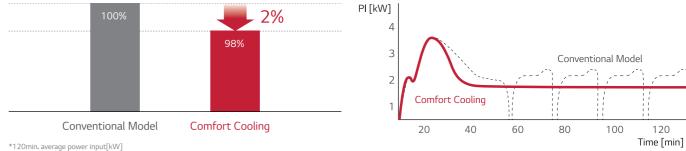
• Conventional vs. MULTI V 5 PRO

Preventing cold draft & repeated turn on/offs Improved indoor comfort



## **Energy Saving**

With comfort cooling feature, target superheat of indoor unit is increased while refrigerant flow rate is decreased. Moreover, thermo-on time has been increased from Conventional 47 minutes to 120 minutes or longer. Since there is no repeating of thermo on/off, average electric power is saved up to 2%.



<sup>\*</sup> Dual Sensing Control requires Standard III Wired Remote Controller (option).

## LARGE CAPACITY OUTDOOR UNIT



## **FLEXIBILITY**

## **Large Capacity Outdoor Unit**

Without cooling operation stopping, this function allows MULTI V 5 PRO to maintain operation at mild cooling mode.

#### **Biomimetic Fan**

The moire pattern from external texture of clam shells has been applied on fans to create the range difference which results in reduction of noise level. At the same time, unlike the fans installed in previous products that generate separation of flow due to absence of tubercles, the bumpy back design inspired by the bumps on the humpback whale's flipper is applied as the tubercles on the back side of the fans, increasing wind power by reducing flacking.



#### 4-sided Heat Exchanger

LG's exclusive Ocean Black Fin is applied on the heat exchanger of MULTI V 5 PRO in order to perform even in corrosive environments. The strong protection from various corrosive external environments such as seaside with high salt contamination and industrial cities with severe air pollution caused by fumes from factories keeps MULTI V 5 PRO operating without breakdown. This improvement in durability prolongs the product's lifespan and lowers both the operational and maintenance costs.

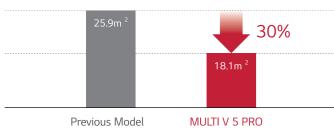


## Flexible Installation Space with Large Capacity Outdoor Units

Large capacity outdoor units of MULTI V 5 PRO minimizes installation space that spares valuable floor space and significantly decreases total installed weights. This allows users the flexible design potential and better use of the saved space.

#### Installation space area comparison

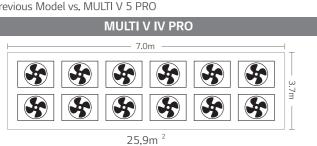
• Previous Model vs. MULTI V 5 PRO





• Previous Model vs. MULTI V 5 PRO

\* 156HP(26HP x 6sets) installation case





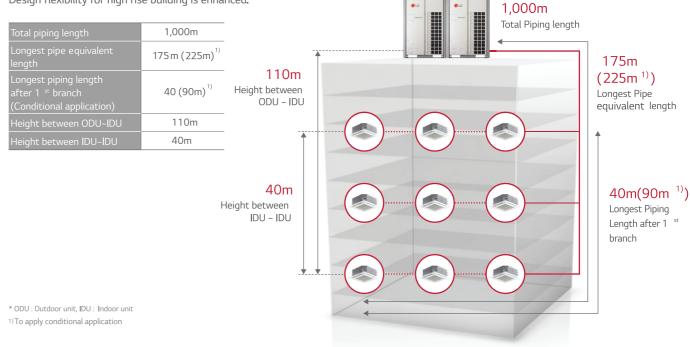
- · Flexible design potential
- · Better use of the saved space
- · Foot print area
- 30% reduction

\* Comparison basis: 26HP (MULTI V 5 PRO vs. MULTI V IV PRO)

# **MULTI V 5 PRO** 18.1m<sup>2</sup> (70%)

## **Piping Capabilities**

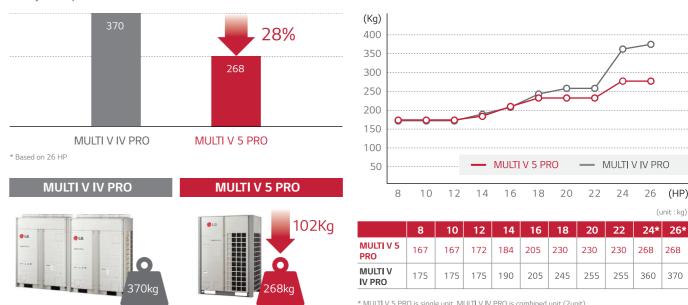
Design flexibility for high rise building is enhanced.



## **Light Weight**

Large capacity outdoor units of MULTI V 5 PRO significantly decreases total installed weights.

- The weight is 12% reduced than MULTI V IV PRO. (based on 8~26HP average)
- · Easy transportation and installation



<sup>\*</sup> MULTI V 5 PRO is single unit, MULTI V IV PRO is combined unit (2unit)

<sup>\* 156</sup>HP(26HP x 6sets) installation case

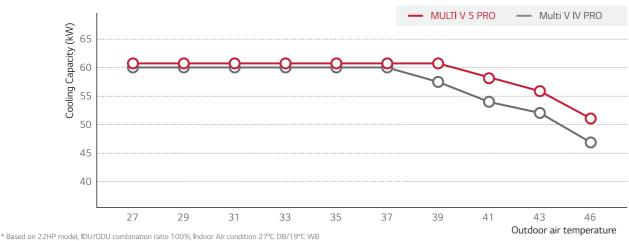
## **PERFORMANCE & EFFICIENCY**

## **Powerful Cooling Performance in High Ambient**

MULTI V 5 PRO can perform stable cooling operation even when the outdoor air temperature goes up to maximum of 48°C. The supplying cooling capacity is also increased from the previous model, specially when the ambient temperature is as high as 46°C. This powerful cooling capability enables reliable operation even under extremely high temperature conditions.

#### Increasing cooling capacity

• Previous Model vs. MULTI V 5 PRO

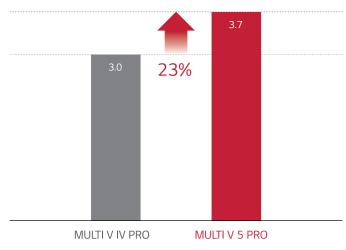


## **Cooling Efficiency**

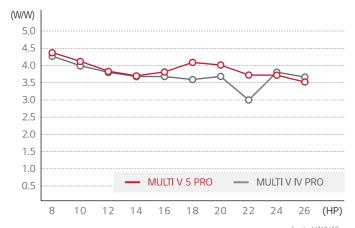
MULTI V 5 PRO cooling efficiency improved than MULTI V IV PRO specially in 18~22HP model ranges.

#### EER (Cooling)

• Cooling efficiency is improved 5% than MULTI V IV PRO. (based on 8~26HP average)



- \* Based on 22HP
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- Cooling : Indoor 27°C(80.6°F) DB / 19°C(66.2°F) WB, Outdoor 35°C(95°F) DB / 24°C(75.2°F) WB
- Heating : Indoor 20°C(68°F) DB / 15°C(59°F) WB, Outdoor 7°C(44.6°F) DB / 6°C(42.8°F) WB
- Piping Length : Interconnected Pipe Length = 7.5m
- Difference of Elevation (ODU ~ IDU) is Zero.

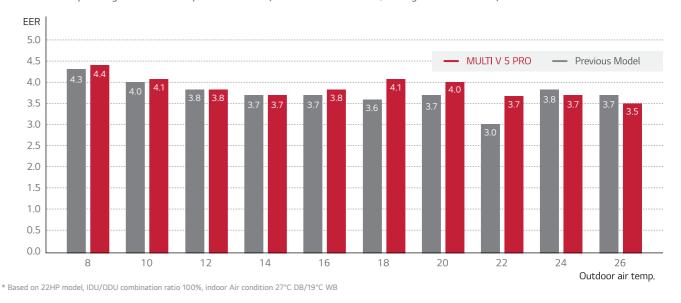


	8	10	12	14	16	18	20	22	24*	26*
IULTI V 5 RO	4.4	4.1	3.8	3.7	3.8	4.1	4.0	3.7	3.7	3.5
IULTI V / PRO	4.3	4.0	3.8	3.7	3.7	3.6	3.7	3.0	3.8	3.7

<sup>\*</sup> MULTI V 5 PRO is single unit, MULTI V IV PRO is combined unit (2unit)

## **Energy Saving from Improved Efficiency**

During the morning and night time, outdoor temp. is relatively low and partial load condition is occurred but in the day time, peak cooling load is occurred. MULTI V 5 PRO's cooling efficiency has been improved in every outdoor air temperature condition which is more actual operating condition than previous model (In case of 22HP model, average 24% increased)

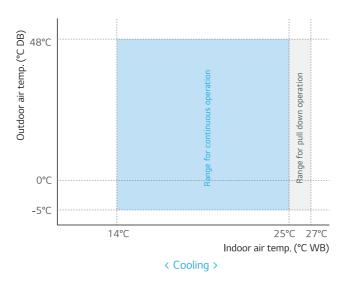


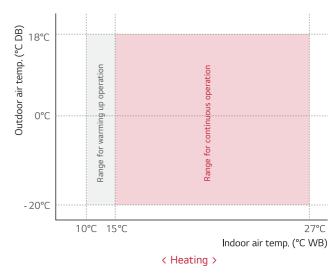
#### Reliable Performance in Extreme Environment

With enhanced inverter compressor and control technology coming from improved supercooling technology installation, MULTI V 5 PRO extended range of cooling operations. MULTI V 5 PRO's cycle technology with enhanced durability enables optimal cooling performance at high temperature that increases up to 48°C.

#### Wider operational range for each performance

With enhanced inverter compressor and control technology coming from improved inverter





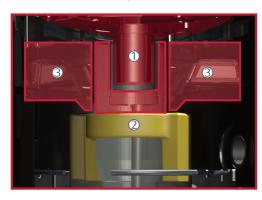
## **RELIABILITY**

## **Ultimate Inverter Compressor**

Motivated by the lubricative material of PEEK\* bearing used for aero engines, the newly invented scroll system with refined shape increases durability and reliability of compressor.

#### Enhanced Bearing with PEEK\* Material

- Improved Efficiency Up to 5% / 10% (Cooling / Heating)
- Noise Level 3dB reduction
- Enhanced low-load operation (min. 10Hz @ 6.8HP Comp)
- Min. 1.1HP(about 35%p⊠ vs. MULTI V IV PRO)



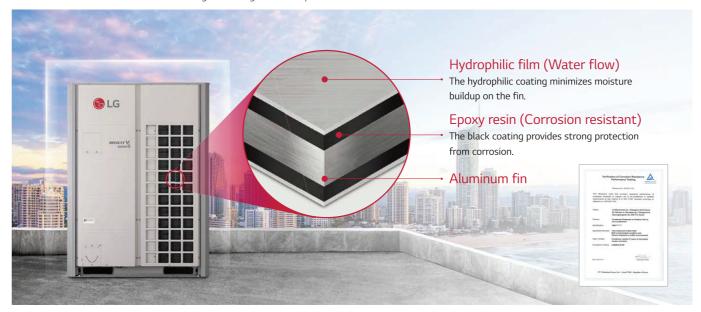




- 1 Material : PEEK (Polyetheretherketone)
- 1+2 Structure : New Outer Bearing
- ③ Supporter: High speed operation with reduction of bearing load and vibration
- \* PEEK is a semicrystalline thermoplastic with excellent mechanical and chemical resistance properties that are retained to high temperatures

## Black Fin II

LG's exclusive "Black Fin II" heat exchanger is designed for Improved Corrosion Resistance.



## **Back Up Function**

When an operating compressor is malfunctioning, automatic emergency back up function is activated in order to continue cooling or heating operation using another compressor or another outdoor unit for back up operation whilst waiting for service. This function is for emergency situation, so users should contact their authorized service dealer as soon as fault has occurred.



Malfunction Back up Operation

The 2 <sup>nd</sup> compressor continues to operate

\* Applied Model: 24HP / 26HP

Case 2

One outdoor unit fails in combined system

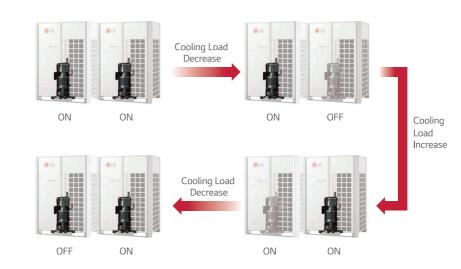


The other outdoor unit continues to operate

\* Applied Model: 28~104 HP

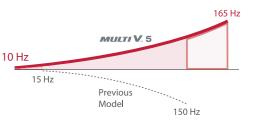
## **Extended Compressor Life Cycle by Alternative Operation**

The running sequence of compressors are monitored by a built-in micro computer to ensure accumulated operation hours of all compressors are balanced. This leads to the longer working life of the compressors and the system.



**Extended Compressor Speed** from 10 Hz to 165 Hz

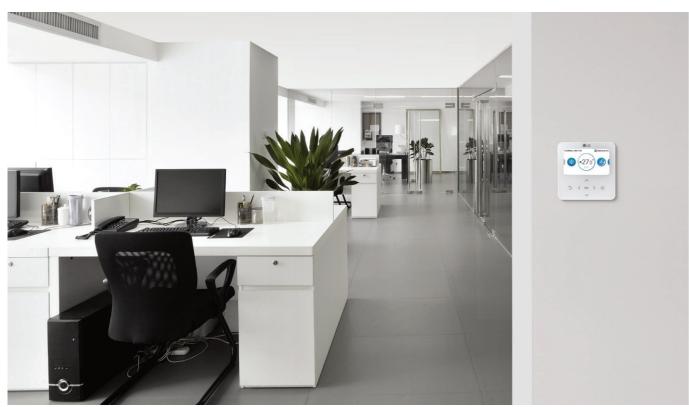
- Increased part load efficiency at all operation ranges
- Rapid operation response
- Capable of reaching required temperature quickly



## **CONVENIENCE**

#### **Smart Individual Controller**

Standard III Wired Remote Controller offers 4.3-inch large LCD screen with neat and premium design. This luxurious design wellmatches interior design through colored screen and simple button layout.



- Premium Design
- New Modern design 4.3 inch colored LCD & Simple touch button
- Intuitive Interface
- Emotional graphic design Simple & user friendly
- Energy Management
- Energy Monitoring
- Real time ~ Yearly, Target setting & Alarm pop-up
- Energy saving function (Time limit control, Setback)
- Variable Functions
- Environment Information (Temperature, Humidity)
- Integrated Schedule (Simple, Weekly)
- Programmable with Digital Output (Option)





Energy Management



Schedule











Emotional graphic design

#### Wi-Fi Control

Control your air conditioners via using the smart internet devices as Android or iOS based smartphones.

#### Wi-Fi Modem & Smart ThinQ

- It is possible to access LG air conditioner anytime and from anywhere with Wi-Fi equipped device.
- Simple operation for various functions
- On / Off
- Operation Mode
- Current / Set Temperature
- Fan Speed
- Vane Control
- Reservation (Sleep, Weekly On / Off)
- Energy Monitoring
- Filter Management
- Error check



#### Overview

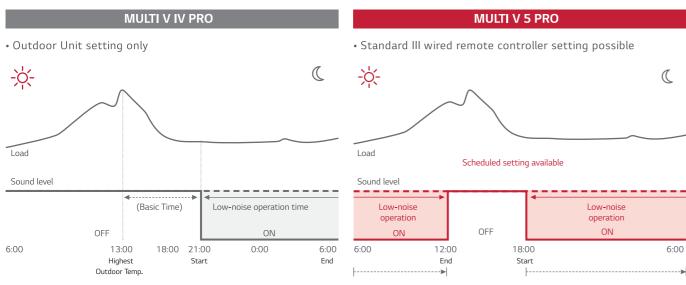


☐ Search "LG SmartThinQ" on Google market or Appstore then download the app. ☑ Internet service with Wi-Fi connection has to be available

## **CONVENIENCE**

### **Low-Noise Operation**

The Low-Noise Operation is possible regardless of the time where noise sensitive areas. This function can be set by users through remote controller



<sup>\*</sup> Low-Noise Operation requires Standard III Wired Remote Controller(option).

## **Refrigerant Leakage Detection**

Refrigerant leakage detector senses real time refrigerant leakage and can secure Customer's safety.

- This detector alarms refrigerant leakage when the refrigerant concentration exceeds 6,000ppm. (The green and red LED lights blink simultaneously.)
- · Alarm is "ON" over 6,000ppm has been maintained 5 seconds, and Alarm is "OFF" under 6,000ppm has been maintained 5 seconds.
- When the alarm of the refrigerant leak detector is switched on the user must ventilate the room until the alarm is disabled

CASE 1	CASE 2	CASE 3
Stop Operating	Main Pipe Closing	Branch Pipe Closing
(System Termination)	& Pump Down	& Continuous Operating







detector)







(Dry contact)





control room (Direct connection ~ DC 30V ~ 1A)





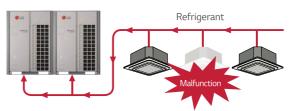
Buzzer alarm for room Central Control Devices

#### **Other Convenient functions**

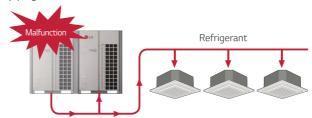
MULTI V 5 PRO has many useful functions.

#### **Pump Down, Pump Out**

- This function is very useful and convenient to repair the malfunction unit.
- Pump Down : When an indoor unit malfunctions, this function collects the refrigerant remaining in the piping line or indoor units to an outdoor unit.



• Pump Out : When an outdoor unit malfunctions, this function collects the refrigerant in other outdoor units, indoor unit, and piping line.



#### **Auto Dust Removal**

- MULTI V 5 PRO can remove dust(sand, leaves, and etc.) on heat exchanger of outdoor unit. This function can prevent performance degradation of the ODU heat exchanger
- Dust is removed on heat exchanger by reverse rotation of fan with Dip switch setting, 5 min. operation in every 2 hours.



Long Time

## Simple Test Run via LGMV

In order to bring out performance to the 100% level, proper product test run is necessary. For previous product, professional engineer who is well-aware of more than 40 different functional settings and 200+ error codes had to check main parts in order to make sure that the test run had succeeded. With Mobile LGMV of MULTI V 5 PRO, however, fast and accurate auto test run can be executed and the professional installer running the test can receive test results via email, which shortens installation hours and increases overall efficiency in installation processes.

#### Test run comparison

• Previous Model vs. MULTI V 5 PRO





#### LGMV smartphone application setting pages



37% Reduction in Installation Hours

<sup>\*</sup> Field supply item: Please contact to subsidiary to get the recommended specification of Necessary accessory. (LG Electronic don't provide this accessory)

ARUN080LLS5 / ARUN100LLS5 ARUN120LLS5 / ARUN140LLS5



	HP		8	10	12	14
Model Name	Combination Unit		ARUN080LLS5	ARUN100LLS5	ARUN120LLS5	ARUN140LLS5
wodel wame	Independent Unit		ARUN080LLS5	ARUN100LLS5	ARUN120LLS5	ARUN140LLS5
	Caalina (Datad)	kW	22.4	28.0	33.6	39.2
Cit	Cooling (Rated)	Btu/h	76,400	95,500	114,600	133,800
Capacity	Hanking (Date 4)	kW	22.4	28.0	33.6	39.2
	Heating (Rated)	Btu/h	76,400	95,500	114,600	133,800
Input (Rated)	Cooling	kW	5.10	6.80	8.90	10.60
input (Rated)	Heating	kW	5.03	7.07	9.10	11.60
EER (Rated)			4.39	4.12	3.78	3.70
COP (Rated)			4.45	3.96	3.69	3.38
Power Factor	Rated	-	0.93	0.93	0.93	0.93
Exterior	Casing Color		Warm Gray / Dawn Gray			
Exterior	RAL code		RAL7038 / RAL 7037			
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	4,200	4,200	5,300	5,300
	Туре		Propeller fan	Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number	w	1,200	1,200	1,200	1,200
an	A. E. B. (11.1)	m³/min	240	240	240	240
	Air Flow Rate (High)	ft³/min	8,476	8,476	8,476	8,476
	Max, External Static Pressure	Pa	80	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	9.52 (3/8)	9.52 (3/8)	12.7 (1/2)	12.7 (1/2)
Connections For Heat Pump	Gas Pipe	mm (inch)	19.05 (3/4)	22.2 (7/8)	28.58 (1-1/8)	28.58 (1-1/8)
Dimensions (W	x H x D)	mm x No.	(930 x 1,690 x 760) x 1			
Net Weight		kg	167	167	172	184
Sound	Cooling	dB(A)	58.0	58.0	59.0	60.0
Pressure Level	Heating	dB(A)	59.0	59.0	60.0	61.0
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C			
	Refrigerant Name		R410A	R410A	R410A	R410A
	Precharged Amount in Factory	kg	4.7	4.7	4.7	7.5
Refrigerant	GWP		2,087.5	2,087.5	2,087.5	2,087.5
	t-CO₂eq		9.8	9.8	9.8	15.7
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Dower C		Ø V !!-	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60	3, 380, 60
Number of Max	imum Connectable Indoor	Units	13 (20)	16 (25)	20 (30)	23 (35)

## **MULTI V 5 PRO**

ARUN160LLS5 / ARUN180LLS5 ARUN200LLS5



	HP		16	18	20
	Combination Unit		ARUN160LLS5	ARUN180LLS5	ARUN200LLS5
Model Name	Independent Unit		ARUN160LLS5	ARUN180LLS5	ARUN200LLS5
	Cooling (Dotod)	kW	44.8	50.4	56.0
Capacity -	Cooling (Rated)	Btu/h	152,900	172,000	191,100
		kW	44.8	50.4	56.0
	Heating (Rated)	Btu/h	152,900	172,000	191,100
. (5 . 1)	Cooling	kW	11.90	12.30	14.10
Input (Rated)	Heating	kW	12.10	12.10	14.50
ER (Rated)			3.76	4.10	3.97
COP (Rated)			3.70	4.17	3.86
Power Factor	Rated	-	0.93	0.93	0.93
F 4 - 2	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
Exterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	5,300	7,500	7,500
Number	Туре		Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number	w	900 x 2	900 x 2	900 x 2
		m³/min	320	320	320
	Air Flow Rate (High)	ft³/min	11,301	11,301	11,301
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	12.7 (1/2)	15.88 (5/8)	15.88 (5/8)
Connections For Heat Pump	Gas Pipe	mm (inch)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1
Net Weight		kg	205	230	230
Sound	Cooling	dB(A)	60.5	62.0	63.0
Pressure Level	Heating	dB(A)	61.5	64.5	66.0
Communication	Cable	mm <sup>2</sup> x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	6.5	7.5	7.5
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		13.6	15.7	15.7
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
			3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz —	3, 380, 60	3, 380, 60	3, 380, 60
Number of Mavi	mum Connectable Indoor	Unite	26 (40)	29 (45)	32 (50)

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

<sup>2.</sup> Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

power cable and circuit breaker should be selected in accordance with that.

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

4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

<sup>2.</sup> Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

<sup>3.</sup> Power factor could vary less than ±1% according to the operating conditions.
4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms 4. Sound pressure level is measured on the rated condition in the anecnoic rooms by ISU 3/45 standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

ARUN220LLS5 / ARUN240LLS5 ARUN260LLS5



	HP		22	24	26
	Combination Unit		ARUN220LLS5	ARUN240LLS5	ARUN260LLS5
lodel Name	Independent Unit		ARUN220LLS5	ARUN240LLS5	ARUN260LLS5
odel Name    Combination Unit	C !: (D : 1)	kW	61.6	67.2	72.8
	Cooling (Rated)	Btu/h	210,200	229,300	248,400
apacity	Harrison (Date 4)	kW	61.6	67.2	72.8
	Heating (Kated)	Btu/h	210,200	229,300	248,400
. (D . 1)	Cooling	kW	16.80	18.20	20.80
put (Kated)	Heating	kW	17.80	17.90	20.50
R (Rated)			3.67	3.69	3.50
OP (Rated)			3.46	3.75	3.55
wer Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
terior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
eat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
ompressor		W x No.	7,500	5,300 x 2	5,300 x 2
	Туре		Propeller fan	Propeller fan	Propeller fan
Number		w	900 x 2	900 x 2	900 x 2
		m³/min	320	320	320
	Air Flow Rate (High)	ft³/min	11,301	11,301	11,301
	Air Flow Rate (High)  Max. External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
ре	Liquid Pipe	mm (inch)	15.88 (5/8)	15.88 (5/8)	19.05 (3/4)
onnections or Heat Pump	Gas Pipe	mm (inch)	28.58 (1-1/8)	34.9 (1-3/8)	34.9 (1-3/8)
mensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1
et Weight		kg	230	268	268
ound	Cooling	dB(A)	64.0	65.0	65.0
essure Level	Heating	dB(A)	67.0	67.0	67.0
ommunication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	7.5	11	11
efrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		15.7	23.0	23.0
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
- ·			3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
ower Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
	mum Connectable Indoor		35 (56)	39 (61)	42 (64)

## **MULTI V 5 PRO**

ARUN280LLS5 / ARUN300LLS5 ARUN320LLS5



	HP		28	30	32
	Combination Unit		ARUN280LLS5	ARUN300LLS5	ARUN320LLS5
Model Name	Independent Unit		ARUN160LLS5 ARUN120LLS5	ARUN180LLS5 ARUN120LLS5	ARUN200LLS5 ARUN120LLS5
Committee		kW	78.4	84.0	89.6
_	Cooling (Rated)	Btu/h	267,500	286,600	305,700
Capacity		kW	78.4	84.0	89.6
	Heating (Rated)	Btu/h	267,500	286,600	305,700
	Cooling	kW	20.8	21.2	23.0
nput (Rated)	Heating	kW	21.2	21.2	23.6
ER (Rated)			3.77	3.96	3.90
COP (Rated)			3.70	3.96	3.80
Power Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	5,300 x 2	(7,500 x 1) + (5,300 x 1)	(7,500 x 1) + (5,300 x 1)
	Туре		Propeller fan	Propeller fan	Propeller fan
Numbe	Motor Output x Number	w	(900 x 2) + (1,200 x 1)	(900 x 2) + (1,200 x 1)	(900 x 2) + (1,200 x 1)
	Air Flow Pato (High)	m³/min	(320 x 1) + (240 x 1)	(320 x 1) + (240 x 1)	(320 x 1) + (240 x 1)
	Air Flow Rate (High)	ft³/min	(11,301 x 1) + (8,476 x 1)	(11,301 x 1) + (8,476 x 1)	(11,301 x 1) + (8,476 x 1)
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
Connections For Heat Pump	Gas Pipe	mm (inch)	34.9 (1-3/8)	34.9 (1-3/8)	34.9 (1-3/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1
Net Weight		kg	(205) + (172)	(230) + (172)	(230) + (172)
Sound	Cooling	dB(A)	62.8	63.8	64.5
Pressure Level	Heating	dB(A)	63.8	65.8	67.0
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name	_	R410A	R410A	R410A
	Precharged Amount in Factory	kg	11,2	12.2	12.2
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		23.4	25.5	25.5
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Dannau C		Ø V II-	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz —	3, 380, 60	3, 380, 60	3, 380, 60
Number of Mavi	mum Connectable Indoor	Unite	45 (56)	49 (60)	52 (64)

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power cable and circuit breaker should be selected in accordance with that.

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

4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

ARUN340LLS5 / ARUN360LLS5 ARUN380LLS5



	HP		34	36	38
	Combination Unit		ARUN340LLS5	ARUN360LLS5	ARUN380LLS5
Model Name	Independent Unit		ARUN220LLS5 ARUN120LLS5	ARUN240LLS5 ARUN120LLS5	ARUN260LLS5 ARUN120LLS5
		kW	95.2	100.8	106.4
	Cooling (Rated)	Btu/h	324,800	343,900	363,000
Capacity		kW	95.2	100.8	106.4
	Heating (Rated)	Btu/h	324.800	343.900	363.000
	Cooling	kW	25.7	27.1	29.7
nput (Rated)	Heating	kW	26.9	27.0	29.6
ER (Rated)			3.70	3.72	3.58
OP (Rated)			3.54	3.73	3.59
ower Factor	Rated		0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	(7,500 x 1) + (5,300 x 1)	5,300 x 3	5,300 x 3
	Туре		Propeller fan	Propeller fan	Propeller fan
_ <u> </u> 	Motor Output x Number	w	(900 x 2) + (1,200 x 1)	(900 x 2) + (1,200 x 1)	(900 x 2) + (1,200 x 1)
		m³/min	(320 x 1) + (240 x 1)	(320 x 1) + (240 x 1)	(320 x 1) + (240 x 1)
	Air Flow Rate (High)	ft³/min	(11,301 x 1) + (8,476 x 1)	(11,301 x 1) + (8,476 x 1)	(11,301 x 1) + (8,476 x 1)
	Number Air Flow Rate (High) Max. External Static Pressure Drive Discharge	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
Connections For Heat Pump	Gas Pipe	mm (inch)	34.9 (1-3/8)	41.3 (1-5/8)	41.3 (1-5/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1
Net Weight		kg	(230) + (172)	(268) + (172)	(268) + (172)
ound	Cooling	dB(A)	65.2	66.0	66.0
ressure Level	Heating	dB(A)	67.8	67.8	67.8
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name	_	R410A	R410A	R410A
	Precharged Amount in Factory	kg	12.2	15.7	15.7
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		25.5	32.8	32.8
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
D			3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
Number of Maxi	imum Connectable Indoor	Units	55 (64)	58 (64)	61 (64)

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

## **MULTI V 5 PRO**

ARUN400LLS5 / ARUN420LLS5 ARUN440LLS5



	HP		40	42	44
	Combination Unit		ARUN400LLS5	ARUN420LLS5	ARUN440LLS5
Model Name	Independent Unit		ARUN260LLS5	ARUN260LLS5	ARUN260LLS5
	independent onit		ARUN140LLS5	ARUN160LLS5	ARUN180LLS5
	Cooling (Rated)	kW	112.0	117.6	123.2
Capacity		Btu/h	382,200	401,300	420,400
-upucity	Heating (Rated)	kW	112.0	117.6	123.2
nput (Rated) Co	ricating (nated)	Btu/h	382,200	401,300	420,400
nnut (Rated)	Cooling	kW	31.4	32.7	33.1
iput (Nateu)	Heating	kW	32.1	32.6	32.6
ER (Rated)			3.57	3.60	3.72
OP (Rated)			3.49	3.61	3.78
Power Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
Exterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor Compressor	Motor Output x Number	W x No.	5,300 x 3	5,300 x 3	(5,300 x 2) + (7,500 x 1)
Type  Motor Output x  Number		Propeller fan	Propeller fan	Propeller fan	
	•	w	(900 x 2) + (1,200 x 1)	900 x 4	900 x 4
		m³/min	(320 x 1) + (240 x 1)	320 x 2	320 x 2
un	Air Flow Rate (High)	ft <sup>3</sup> /min	(11,301 x 1) + (8,476 x 1)	11,301 x 2	11,301 x 2
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
Connections For Heat Pump	Gas Pipe	mm (inch)	41.3 (1-5/8)	41.3 (1-5/8)	41.3 (1-5/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 1 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 2	(1,240 x 1,690 x 760) x 2
Net Weight		kg	(268) + (184)	(268) + (205)	(268) + (230)
Sound	Cooling	dB(A)	66.2	66.3	66.8
Pressure Level	Heating	dB(A)	68.0	68.1	68.9
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	18.5	17.5	18.5
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		38.6	36.5	38.6
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
			3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
			5, 555, 66		5, 300, 00

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

ARUN460LLS5 / ARUN480LLS5 ARUN500LLS5



	HP		46	48	50
	Combination Unit		ARUN460LLS5	ARUN480LLS5	ARUN500LLS5
Model Name	Independent Unit		ARUN260LLS5 ARUN200LLS5	ARUN260LLS5 ARUN220LLS5	ARUN260LLS5 ARUN240LLS5
		kW	128.8	134.4	140.0
	Cooling (Rated)	Btu/h	439,500	458,600	477,700
Capacity		kW	128.8	134.4	140.0
	Heating (Rated)	Btu/h	439,500	458,600	477,700
	Cooling	kW	34.9	37.6	39.0
Input (Rated)	Heating	kW	35.0	38.3	38.4
EER (Rated)	rieating	KVV	3,69	3.57	3,59
COP (Rated)			3.68	3.51	3.65
Power Factor	Rated		0.93	0.93	0.93
1 Owel 1 decoi	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
Exterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	(5,300 x 2) + (7,500 x 1)	(5,300 x 2) + (7,500 x 1)	5,300 x 4
	Туре		Propeller fan	Propeller fan	Propeller fan
Moto Numl	Motor Output x	W	900 x 4	900 x 4	900 x 4
	rumber	m³/min	320 x 2	320 x 2	320 x 2
raii	Number  Air Flow Rate (High)  Max. External Static Pressure	ft³/min	11.301 x 2	11.301 x 2	11.301 x 2
	Max. External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
Connections For Heat Pump	Gas Pipe	mm (inch)	41.3 (1-5/8)	41.3 (1-5/8)	41.3 (1-5/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 2	(1,240 x 1,690 x 760) x 2	(1,240 x 1,690 x 760) x 2
Net Weight		kg	(268) + (230)	(268) + (230)	(268) + (268)
Sound	Cooling	dB(A)	67.1	67.5	68.0
Pressure Level	Heating	dB(A)	69.5	70.0	70.0
Communication	Cable	mm <sup>2</sup> x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	18.5	18.5	22.0
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		38.6	38.6	45.9
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
D		<i>a</i> v u-	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
Number of Maxi	mum Connectable Indoor	Units	64	64	64

## **MULTI V 5 PRO**

ARUN520LLS5 / ARUN540LLS5 ARUN560LLS5





	HP		52	54	56
	Combination Unit		ARUN520LLS5	ARUN540LLS5	ARUN560LLS5
Model Name			ARUN260LLS5	ARUN260LLS5	ARUN260LLS5
	Independent Unit		ARUN260LLS5	ARUN160LLS5	ARUN180LLS5
		kW	145,6	ARUN120LLS5 151,2	ARUN120LLS5 156,8
	Cooling (Rated)	Btu/h	496,800	515,900	535,000
Capacity		kW	145.6	151.2	156.8
	Heating (Rated)				
	C 1:	Btu/h kW	496,800	515,900	535,000
nput (Rated)	Cooling		41.6	41.6	42.0
	Heating	kW	41.0	41.7	41.7
ER (Rated)			3.50	3.63	3.73
COP (Rated)			3.55	3.63	3.76
Power Factor	Rated	-	0.93	0.93	0.93
xterior	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	5,300 x 4	5,300 x 4	(5,300 x 3) + (7,500 x 1)
_	Туре		Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number	W	900 x 4	(900 x 4) + (1,200 x 1)	(900 x 4) + (1,200 x 1)
an	A: EL D. (II: I.)	m³/min	320 x 2	(320 x 2) + (240 x 1)	(320 x 2) + (240 x 1)
	Air Flow Rate (High)	ft³/min	11,301 x 2	(11,301 x 2) + (8,476 x 1)	(11,301 x 2) + (8,476 x 1)
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	19.05 (3/4)	19.05 (3/4)	19.05 (3/4)
Connections For Heat Pump	Gas Pipe	mm (inch)	41.3 (1-5/8)	41.3 (1-5/8)	41.3 (1-5/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 2	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1
Net Weight		kg	(268) + (268)	(268) + (205) + (172)	(268) + (230) + (172)
Sound	Cooling	dB(A)	68.0	67.1	67.4
ressure Level	Heating	dB(A)	70.0	68.7	69.5
Communication	Cable	mm <sup>2</sup> x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	22.0	22.2	23.2
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		45.9	46.3	48.4
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
			3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
	imum Connectable Indoor		64	64	64

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

<sup>2.</sup> Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

power cable and circuit breaker should be selected in accordance with that,
3. Power factor could vary less than ±1% according to the operating conditions.
4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.
5. 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 Zero.
6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.
7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

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

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

4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms

<sup>4.</sup> Sound pressure level is measured on the rated condition in the alection (rooms by ISO 3745 Standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 / 19°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB

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

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

ARUN580LLS5 / ARUN600LLS5 ARUN620LLS5



	HP		58	60	62
	Combination Unit		ARUN580LLS5	ARUN600LLS5	ARUN620LLS5
Iodel Name	Independent Unit		ARUN260LLS5 ARUN200LLS5 ARUN120LLS5	ARUN260LLS5 ARUN220LLS5 ARUN120LLS5	ARUN260LLS5 ARUN240LLS5 ARUN120LLS5
		kW	162,4	168.0	173.6
Model Name   Combination Unit	Cooling (Rated)	Btu/h	554.100	573.200	592.300
		kW	162.4	168.0	173.6
	Heating (Rated)	Btu/h	554,100	573,200	592,300
	Cooling	kW	43.8	46.5	47.9
iput (Rated)	Heating	kW	44.1	47.4	47.5
ER (Rated)	-		3.71	3.61	3.62
OP (Rated)			3.68	3.54	3.65
ower Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
ompressor	,	W x No.	(5,300 x 3) + (7,500 x 1)	(5,300 x 3) + (7,500 x 1)	5,300 x 5
Motor C	Туре		Propeller fan	Propeller fan	Propeller fan
	,	w	(900 x 4) + (1,200 x 1)	(900 x 4) + (1,200 x 1)	(900 x 4) + (1,200 x 1)
an	Air Flore Data (High)	m³/min	(320 x 2) + (240 x 1)	(320 x 2) + (240 x 1)	(320 x 2) + (240 x 1)
	Air Flow Rate (High)	ft³/min	(11,301 x 2) + (8,476 x 1)	(11,301 x 2) + (8,476 x 1)	(11,301 x 2) + (8,476 x 1)
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
•	Liquid Pipe	mm (inch)	19.05 (3/4)	19.05 (3/4)	22.2 (7/8)
	Gas Pipe	mm (inch)	41.3 (1-5/8)	41.3 (1-5/8)	41.3 (1-5/8)
imensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1
let Weight		kg	(268) + (230) + (172)	(268) + (230) + (172)	(268) + (268) + (172)
	Cooling	dB(A)	67.7	68.1	68.5
ressure Level	Heating	dB(A)	70.0	70.4	70.4
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	23.2	23.2	26.7
efrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		48.4	48.4	55.7
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Januar Cumple		Ø V U-	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
lumber of Mavi	mum Connectable Indoor	Units	64	64	64

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

## **MULTI V 5 PRO**

ARUN640LLS5 / ARUN660LLS5 ARUN680LLS5



	HP		64	66	68
	Combination Unit		ARUN640LLS5	ARUN660LLS5	ARUN680LLS5
Model Name  (Capacity  Input (Rated)  EER (Rated)  COP (Rated)  Power Factor  Exterior  Heat Exchanger	<u> </u>		ARUN260LLS5	ARUN260LLS5	ARUN260LLS5
	Independent Unit		ARUN260LLS5	ARUN260LLS5	ARUN260LLS5
			ARUN120LLS5	ARUN140LLS5	ARUN160LLS5
Capacity —	Cooling (Rated)	kW	179.2	184.8	190.4
		Btu/h	611,400	630,600	649,700
	Heating (Rated)	kW	179.2	184.8	190.4
		Btu/h	611,400	630,600	649,700
nut (Rated)	Cooling	kW	50.5	52.2	53.5
iput (Nateu)	Heating	kW	50.1	52.6	53.1
ER (Rated)			3.55	3.54	3.56
OP (Rated)			3.58	3.51	3.59
ower Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	5,300 x 5	5,300 x 5	5,300 x 5
	Туре		Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number	w	(900 x 4) + (1,200 x 1)	(900 x 4) + (1,200 x 1)	900 x 6
an		m³/min	(320 x 2) + (240 x 1)	(320 x 2) + (240 x 1)	320 x 3
	Air Flow Rate (High)	ft³/min	(11,301 x 2) + (8,476 x 1)	(11,301 x 2) + (8,476 x 1)	11,301 x 3
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
Connections For Heat Pump	Gas Pipe	mm (inch)	41.3 (1-5/8)	53.98 (2-1/8)	53.98 (2-1/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 2 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 3
Net Weight		kg	(268) + (268) + (172)	(268) + (268) + (184)	(268) + (268) + (205)
Sound	Cooling	dB(A)	68.5	68.6	68.7
Pressure Level	Heating	dB(A)	70.4	70.5	70.6
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
	Precharged Amount in Factory	kg	26.7	29.5	28.5
Refrigerant	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq	-	55.7	61.6	59.5
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
			3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
			0,000,00		

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Power factor could vary less than ±1% according to the operating conditions.
4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms 4. Sound pressure level is measured on the fated condition in the alection from by ISO 9614 standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 / 19°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB

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

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notinication.

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

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

4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms

<sup>4.</sup> Sound pressure level is measured on the rated condition in the antecnoic rooms by ISO 3745 standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

ARUN700LLS5 / ARUN720LLS5 ARUN740LLS5



	HP		70	72	74
	Combination Unit		ARUN700LLS5	ARUN720LLS5	ARUN740LLS5
Model Name			ARUN260LLS5	ARUN260LLS5	ARUN260LLS5
	Independent Unit		ARUN260LLS5	ARUN260LLS5	ARUN260LLS5
		kW	ARUN180LLS5 196,0	ARUN200LLS5 201,6	ARUN220LLS5 207,2
	Cooling (Rated) Btu/h		668,800	687,900	707,000
Capacity		kW	196.0	201.6	207.2
	Heating (Rated)	Btu/h	668,800	687,900	707,000
	Cooling	kW	53.9	55.7	58.4
nput (Rated)	Heating	kW	53,1	55.5	58.8
ER (Rated)			3.64	3.62	3.55
OP (Rated)			3.69	3.63	3.52
Power Factor	Rated		0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	(5,300 × 4) + (7,500 × 1)	(5,300 x 4) + (7,500 x 1)	(5,300 x 4) + (7,500 x 1)
	Туре		Propeller fan	Propeller fan	Propeller fan
an	Motor Output x Number	w	900 x 6	900 x 6	900 x 6
	A: EL D. (U. 1)	m³/min	320 x 3	320 x 3	320 x 3
	Air Flow Rate (High)	ft³/min	11,301 x 3	11,301 x 3	11,301 x 3
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
Connections For Heat Pump	Gas Pipe	mm (inch)	53.98 (2-1/8)	53.98 (2-1/8)	53.98 (2-1/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 3	(1,240 x 1,690 x 760) x 3	(1,240 x 1,690 x 760) x 3
Net Weight		kg	(268) + (268) + (230)	(268) + (268) + (230)	(268) + (268) + (230)
Sound	Cooling	dB(A)	69.0	69.2	69.5
ressure Level	Heating	dB(A)	71.1	71.5	71.8
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
Refrigerant	Precharged Amount in Factory	kg	29.5	29.5	29.5
	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		61.6	61.6	61.6
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Dower Supply		Ø, V, Hz	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply Ø, V, Hz		Ю, V, ПZ	3, 380, 60	3, 380, 60	3, 380, 60
Number of Maxi	imum Connectable Indoor	Units	64	64	64

## **MULTI V 5 PRO**

ARUN760LLS5 / ARUN780LLS5 ARUN800LLS5





	HP		76	78	80
	Combination Unit		ARUN760LLS5	ARUN780LLS5	ARUN800LLS5
Model Name	Independent Unit		ARUN260LLS5 ARUN260LLS5 ARUN240LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5	ARUN260LLS5 ARUN260LLS5 ARUN160LLS5 ARUN120LLS5
	kW		212.8	218.4	224.0
	Cooling (Rated)	Btu/h	726,100	745,200	764,300
Capacity		kW	212.8	218.4	224.0
	Heating (Rated)	Btu/h	726,100	745,200	764,300
- (5 - 1)	Cooling	kW	59.8	62.4	62.4
nput (Rated)	Heating	kW	58.9	61.5	62.2
ER (Rated)			3.56	3.50	3.59
COP (Rated)			3.61	3.55	3.60
Power Factor	Rated	-	0.93	0.93	0.93
Eutorion	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
Heat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	5,300 x 6	5,300 x 6	5,300 x 6
	Туре		Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number	w	900 x 6	900 x 6	(900 x 6) + (1,200 x 1)
Fan	Air Flow Rate (High)	m³/min	320 x 3	320 x 3	(320 x 3) + (240 x 1)
	Air Flow Rate (High)	ft³/min	11,301 x 3	11,301 x 3	(11,301 x 3) + (8,476 x 1)
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
Connections For Heat Pump	Gas Pipe	mm (inch)	53.98 (2-1/8)	53.98 (2-1/8)	53.98 (2-1/8)
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 3	(1,240 x 1,690 x 760) x 3	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1
Net Weight		kg	(268) + (268) + (268)	(268) + (268) + (268)	(268) + (268) + (205) + (172)
Sound	Cooling	dB(A)	69.8	69.8	69.2
Pressure Level	Heating	dB(A)	71.8	71.8	70.9
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
Refrigerant	Precharged Amount in Factory	kg	33.0	33.0	33.2
	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		68.9	68.9	69.3
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
D'		<i>a</i> v.u.	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
	mum Connectable Indoor		64	64	64

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

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2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Power factor could vary less than ±1% according to the operating conditions.
4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms

<sup>4.</sup> Sound pressure level is measured on the fated condition in the allection rooms by ISO 3745 standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

#### ARUN820LLS5 / ARUN840LLS5 ARUN860LLS5



	HP		82	84	86
	Combination Unit		ARUN820LLS5	ARUN840LLS5	ARUN860LLS5
Model Name	Independent Unit		ARUN260LLS5 ARUN260LLS5 ARUN180LLS5 ARUN180LLS5 ARUN120LLS5	ARUN260LLS5 ARUN260LLS5 ARUN200LLS5 ARUN120LLS5	ARUN260LLS5 ARUN260LLS5 ARUN220LLS5 ARUN120LLS5
	kW		229.6	235.2	240.8
	Cooling (Rated)  Btu/h  kW		783,400	802,500	821,600
apacity			229.6	235.2	240.8
	Heating (Rated)	Btu/h	783,400	802,500	821,600
"	t (Rated) Cooling kW		62.8	64.6	67.3
nput (Rated)	Heating	kW	62.2	64.6	67.9
ER (Rated)			3.66	3.64	3.58
OP (Rated)			3.69	3.64	3.55
ower Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
<u> </u>	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
compressor	Motor Output x Number	W x No.	(5,300 × 5) + (7,500 × 1)	(5,300 x 5) + (7,500 x 1)	(5,300 x 5) + (7,500 x 1)
	Туре		Propeller fan	Propeller fan	Propeller fan
•	Motor Output x Number		(900 x 6) + (1,200 x 1)	(900 x 6) + (1,200 x 1)	(900 x 6) + (1,200 x 1)
an	Air Flow Dote (III als)	m³/min	(320 x 3) + (240 x 1)	(320 x 3) + (240 x 1)	(320 x 3) + (240 x 1)
	Air Flow Rate (High)	ft³/min	(11,301 x 3) + (8,476 x 1)	(11,301 x 3) + (8,476 x 1)	(11,301 x 3) + (8,476 x 1)
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
Connections For Heat Pump	Gas Pipe	mm (inch)	53.98 (2-1/8)	53.98 (2-1/8)	53.98 (2-1/8)
Dimensions (W	(H x D)	mm x No.	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1
Net Weight		kg	(268) + (268) + (230) + (172)	(268) + (268) + (230) + (172)	(268) + (268) + (230) + (172)
ound	Cooling	dB(A)	69.4	69.6	69.8
ressure Level	Heating	dB(A)	71.4	71.8	72.1
Communication	Cable	mm <sup>2</sup> x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
Refrigerant	Precharged Amount in Factory	kg	34.2	34.2	34.2
	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		71.4	71.4	71.4
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Dower Supply		Ø, V, Hz	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		₽, V, 17Z	3, 380, 60	3, 380, 60	3, 380, 60
Number of Maxi	mum Connectable Indoor	Units	64	64	64

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

## **MULTI V 5 PRO**

ARUN880LLS5 / ARUN900LLS5 ARUN920LLS5



	HP		88	90	92	
	Combination Unit		ARUN880LLS5	ARUN900LLS5	ARUN920LLS5	
Model Name	Independent Unit		ARUN260LLS5 ARUN260LLS5 ARUN240LLS5 ARUN120LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN120LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN140LLS5	
	Carlina (Dari I)	kW	246.4	252.0	257.6	
Capacity	Cooling (Rated) Btu/h		840,700	859,800	879,000	
	Heating (Rated) kW Btu/h		246.4	252.0	257.6	
			840,700	859,800	879,000	
(D-t d)	Cooling	kW	68.7	71.3	73.0	
nput (Rated)	Heating	kW	68.0	70.6	73.1	
ER (Rated)			3.59	3.53	3.53	
COP (Rated)			3.62	3.57	3.52	
Power Factor	Rated	-	0.93	0.93	0.93	
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037	
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus	
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll	
Compressor	Motor Output x Number	W x No.	5,300 x 7	5,300 x 7	5,300 x 7	
	Туре		Propeller fan	Propeller fan	Propeller fan	
	Motor Output x Number W		(900 x 6) + (1,200 x 1)	(900 x 6) + (1,200 x 1)	(900 x 6) + (1,200 x 1)	
an	Air Flow Rate (High)		(320 x 3) + (240 x 1)	(320 x 3) + (240 x 1)	(320 x 3) + (240 x 1)	
	Air Flow Rate (High)	ft³/min	(11,301 x 3) + (8,476 x 1)	(11,301 x 3) + (8,476 x 1)	(11,301 x 3) + (8,476 x 1)	
	Max, External Static Pressure	Pa	80	80	80	
	Drive		DC INVERTER	DC INVERTER	DC INVERTER	
	Discharge	Side / Top	TOP	TOP	TOP	
ipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)	
Connections For Heat Pump	Gas Pipe	mm (inch)	53.98 (2-1/8)	53.98 (2-1/8)	53.98 (2-1/8)	
Dimensions (W	x H x D)	mm x No.	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1	(1,240 x 1,690 x 760) x 3 + (930 x 1,690 x 760) x 1	
Vet Weight		kg	(268) + (268) + (268) + (172)	(268) + (268) + (268) + (172)	(268) + (268) + (268) + (184)	
Sound	Cooling	dB(A)	70.1	70.1	70.2	
ressure Level	Heating	dB(A)	72.1	72.1	72.1	
Communication	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	
	Refrigerant Name		R410A	R410A	R410A	
Refrigerant	Precharged Amount in Factory	kg	37.7	37.7	40.5	
	GWP		2,087.5	2,087.5	2,087.5	
	t-CO <sub>2</sub> eq		78.7	78.7	84.5	
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve	
Danner C		6 V II-	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50	
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60	
NI	mum Connectable Indoor		64	64	64	

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

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

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

4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms

<sup>4.</sup> Source pressure level is measured on the nated condition in the anectoric rooms by ISO 3745 standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

ARUN940LLS5 / ARUN960LLS5 ARUN980LLS5



	HP		94	96	98
	Combination Unit		ARUN940LLS5	ARUN960LLS5	ARUN980LLS5
Model Name	Independent Unit		ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN160LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN180LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN200LLS5
	Cooling (Botod) kW		263.2	268.8	274.4
	Cooling (Rated) Btu/h		898,100	917,200	936,300
Capacity	Harris - (Danad)	kW	263.2	268.8	274.4
	Heating (Rated)	Btu/h	898,100	917,200	936,300
nput (Rated)	Cooling	kW	74.3	74.7	76.5
nput (Rated)	Heating	kW	73.6	73.6	76.0
ER (Rated)			3.54	3.60	3.59
COP (Rated)			3.58	3.65	3.61
Power Factor	Rated	-	0.93	0.93	0.93
Exterior	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
:xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
compressor	Motor Output x Number	W x No.	5,300 x 7	(5,300 x 6) + (7,500 x 1)	(5,300 x 6) + (7,500 x 1)
	Туре		Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number		900 x 8	900 x 8	900 x 8
an	A: EL B : (II: I)	m³/min	320 x 4	320 x 4	320 x 4
	Air Flow Rate (High) ft³/min		11,301 x 4	11,301 x 4	11,301 x 4
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
ipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
onnections or Heat Pump	Gas Pipe	mm (inch)	53.98 (2-1/8)	53.98 (2-1/8)	53.98 (2-1/8)
Dimensions (W x	H x D)	mm x No.	(1,240 x 1,690 x 760) x 4	(1,240 x 1,690 x 760) x 4	(1,240 x 1,690 x 760) x 4
let Weight		kg	(268) + (268) + (268) + (205)	(268) + (268) + (268) + (230)	(268) + (268) + (268) + (230)
ound	Cooling	dB(A)	70.3	70.4	70.6
ressure Level	Heating	dB(A)	72.2	72.5	72.8
Communication (	Cable	mm² x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
Refrigerant	Precharged Amount in Factory	kg	39.5	40.5	40.5
	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		82.5	84.5	84.5
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Dawes Committee		Ø, V, Hz	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		ø, v, riz	3, 380, 60	3, 380, 60	3, 380, 60
Number of Mavi	num Connectable Indoor	Units	64	64	64

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

## **MULTI V 5 PRO**

ARUN1000LLS5 / ARUN1020LLS5 ARUN1040LLS5



	HP		100	102	104
	Combination Unit		ARUN1000LLS5	ARUN1020LLS5	ARUN1040LLS5
Model Name	Independent Unit		ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN220LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN240LLS5	ARUN260LLS5 ARUN260LLS5 ARUN260LLS5 ARUN260LLS5
	kW		280.0	285.6	291.2
Capacity	Cooling (Rated)	Btu/h	955,400	974,500	993,600
		kW	280.0	285.6	291.2
	Heating (Rated) Btu/h		955,400	974,500	993,600
. (D . I)	ted) Cooling kW		79.2	80.6	83.2
nput (Rated)	Heating	kW	79.3	79.4	82.0
ER (Rated)			3.54	3.54	3.50
OP (Rated)			3.53	3.60	3.55
ower Factor	Rated	-	0.93	0.93	0.93
	Casing Color		Warm Gray / Dawn Gray	Warm Gray / Dawn Gray	Warm Gray / Dawn Gray
xterior	RAL code		RAL7038 / RAL 7037	RAL7038 / RAL 7037	RAL7038 / RAL 7037
leat Exchanger			Wide Louver Plus	Wide Louver Plus	Wide Louver Plus
	Туре		Hermetically Sealed Scroll	Hermetically Sealed Scroll	Hermetically Sealed Scroll
Compressor	Motor Output x Number	W x No.	(5,300 x 6) + (7,500 x 1)	5,300 x 8	5,300 x 8
	Туре		Propeller fan	Propeller fan	Propeller fan
	Motor Output x Number W		900 x 8	900 x 8	900 x 8
an	Air Flow Rate (High)		320 x 4	320 x 4	320 x 4
	Air Flow Rate (High)	ft³/min	11,301 x 4	11,301 x 4	11,301 x 4
	Max, External Static Pressure	Pa	80	80	80
	Drive		DC INVERTER	DC INVERTER	DC INVERTER
	Discharge	Side / Top	TOP	TOP	TOP
Pipe	Liquid Pipe	mm (inch)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
Connections For Heat Pump	Gas Pipe	mm (inch)	53.98 (2-1/8)	53.98 (2-1/8)	53.98 (2-1/8)
Dimensions (W	κΗxD)	mm x No.	(1,240 x 1,690 x 760) x 4	(1,240 x 1,690 x 760) x 4	(1,240 x 1,690 x 760) x 4
Net Weight		kg	(268) + (268) + (268) + (230)	(268) + (268) + (268) + (268)	(268) + (268) + (268) + (268
Sound	Cooling	dB(A)	70.8	71.0	71.0
ressure Level	Heating	dB(A)	73.0	73.0	73.0
Communication	Cable	mm <sup>2</sup> x No. (VCTF-SB)	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C	1.0 ~ 1.5 x 2C
	Refrigerant Name		R410A	R410A	R410A
Refrigerant	Precharged Amount in Factory	kg	40.5	44.0	44.0
	GWP		2,087.5	2,087.5	2,087.5
	t-CO <sub>2</sub> eq		84.5	91.9	91.9
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
		a v v	3, 380-415, 50	3, 380-415, 50	3, 380-415, 50
Power Supply		Ø, V, Hz	3, 380, 60	3, 380, 60	3, 380, 60
Number of Maxi	mum Connectable Indoor	Units	64	64	64

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notification.

<sup>2.</sup> Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.

power cable and circuit breaker should be selected in accordance with that.

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

4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. 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 Zero.

6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

<sup>1.</sup> Due to our policy of innovation some specifications may be changed without notinication.
2. Wiring cable size must comply with the applicable local and national codes. And "Electric characteristics" chapter should be considered for electrical work and design. Especially the power cable and circuit breaker should be selected in accordance with that.
3. Power factor could vary less than ±1% according to the operating conditions.
4. Sound pressure level is measured on the rated condition in the anechoic rooms by ISO 3745 standard. Sound power level is measured on the rated condition in the reverberation rooms

<sup>4.</sup> Sound pressure level is measured on the rated condition in the anterior rooms by ISO 3745 standard. Sound power level is measured on the by ISO 9614 standard. Therefore, these values can be increased owing to ambient conditions during operation.

5. Performances are based on the following conditions - Cooling: Indoor Ambient Temp. 27°CDB / 19°CWB, Outdoor Ambient Temp. 35°CDB / 24°CWB

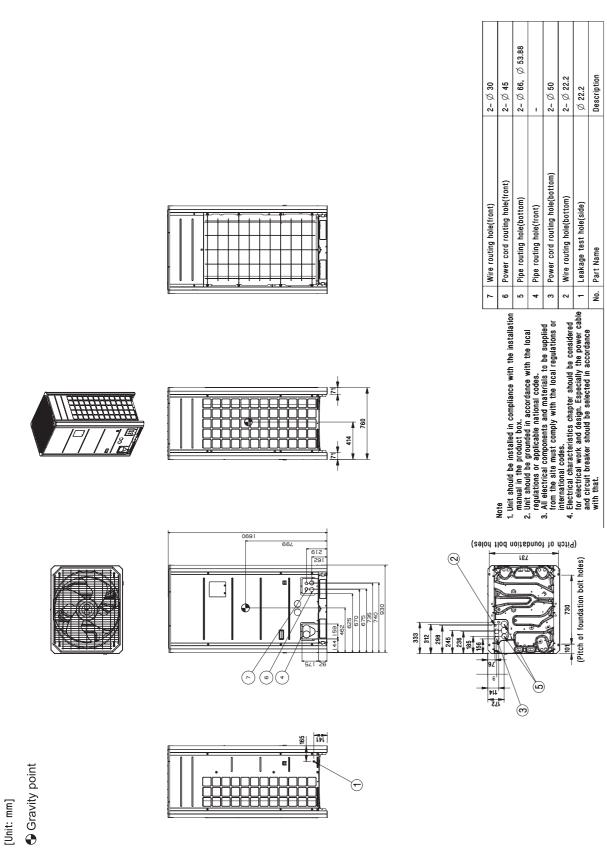
— Heating: Indoor Ambient Temp. 20°CDB / 19°CWB, Outdoor Ambient Temp. 7°CDB / 6°CWB

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

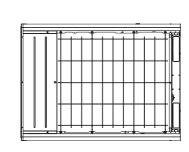
6. The numbers in parentheses means maximum connectable indoor units in accordance with outdoor units combination. The recommended ratio is 130%.

7. This product contains Fluorinated greenhouse gases. (R410A, GWP(Global warming potential) = 2087.5)

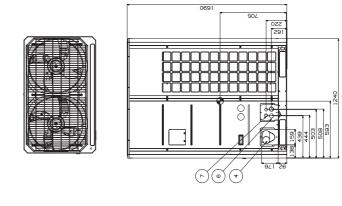
#### ARUN080LLS5 / ARUN100LLS5 / ARUN120LLS5 / ARUN140LLS5

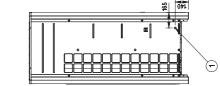


#### ARUN160LLS5 / ARUN180LLS5 / ARUN200LLS5 / ARUN220LLS5 ARUN240LLS5 / ARUN260LLS5

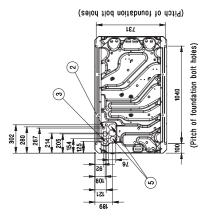


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	7	Wire routing hole(front)	2- ∅ 30
·	9	Power cord routing hole(front)	2- Ø 45
<u> </u>	2	Pipe routing hole(bottom)	2- Ø 66, Ø 53.88
	4	Pipe routing hole(front)	-
	က	Power cord routing hole(bottom)	2- ∅ 50
	2	Wire routing hole(bottom)	2- Ø 22.2
<u>e</u>	-	Leakage test hole(side)	Ø 22.2
	No.	No. Part Name	Description

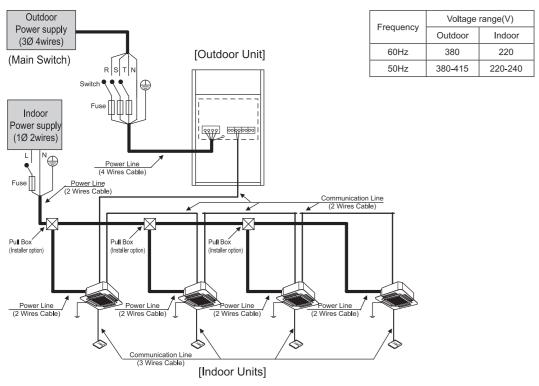


[Unit: mm]

Gravity point

#### **■** Example Connection of Communication Cable

#### **♦** Single Outdoor Unit

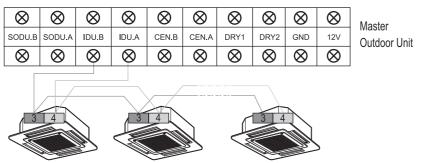


#### **MARNING**

- Installation site must require attachment of an earth leakage breaker. If no earth leakage breaker is installed, it may cause an electric shock.
- Indoor Unit ground Lines are required for preventing electrical shock accident during current leakage, Communication disorder by noise effect and motor current leakage (without connection to pipe).
- Don't install an individual switch or electrical outlet to disconnect each of indoor unit separately from the power supply.
- If individual power supply is necessary for each indoor unit, IPM (Independent Power Module) should be applied at each indoor unit. (optional)
- Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
- If there exists the possibility of reversed phase, lose phase, momentary blackout or the power goes on and off while the product is operating, attach a reversed phase protection circuit locally.

Running the product in reversed phase may break the compressor and other parts.

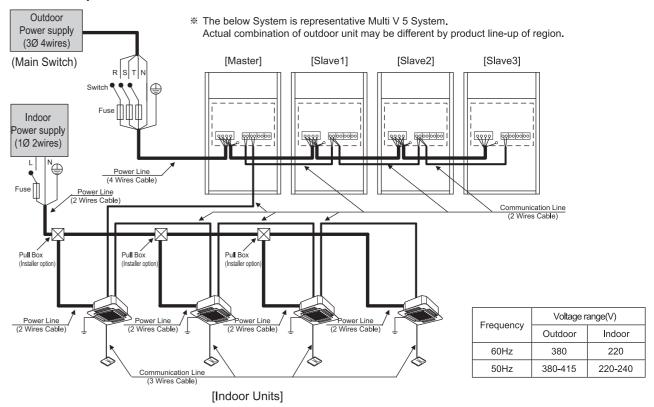
#### Between Indoor and Master Outdoor unit



The GND terminal at the main PCB is a '-' terminal for day contact, it is not the point to make ground connection.

#### ■ Series Outdoor Unit

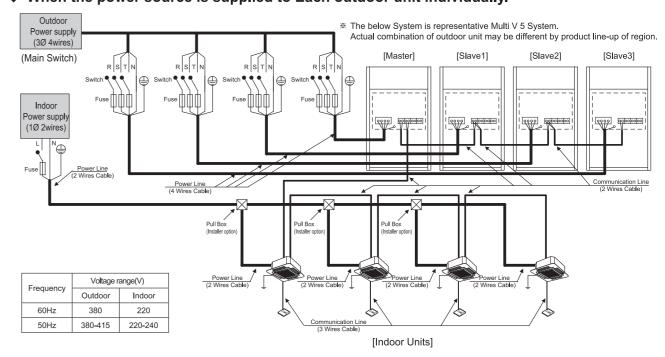
♦ When the power source is connected In series between the units.



#### **WARNING**

When the total capacity is over than 68Hp, do not use single power source for connecting series units. The First terminal block could be burnt out.

♦ When the power source is supplied to Each outdoor unit individually.



#### ■ 50Hz

Hotel	l			Unit	Po	wer Sup	ply	COMP		OF	FM	
10   HP   50   380-415   Min.;342, Max.456   25.5   28.0   32   5.9   12.0   12.4   1.2   2.5     14   HP   50   380-415   Min.;342, Max.456   25.5   28.0   32   5.9   12.0   12.4   1.2   2.5     16   HP   50   380-415   Min.;342, Max.456   27.3   30.0   32   5.9   14.8   16.5   1.2   2.5     16   HP   50   380-415   Min.;342, Max.456   27.3   30.0   32   5.9   16.9   17.3   1.8   2.5     2.5   20   HP   50   380-415   Min.;342, Max.456   31.8   35.0   35   7.5   17.6   17.3   1.8   2.5     22   HP   50   380-415   Min.;342, Max.456   35.5   39.0   40   7.5   20.5   21.2   1.8   2.5     24   HP   50   380-415   Min.;342, Max.456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5     25   HP   50   380-415   Min.;342, Max.456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5     25   HP   50   380-415   Min.;342, Max.456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5     26   HP   50   380-415   Min.;342, Max.456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5     26   HP   50   380-415   Min.;342, Max.456   57.3   63.0   60   11.8   27.0   29.6   3.0   5.0     30   HP   50   380-415   Min.;342, Max.456   57.3   63.0   63   13.4   29.6   29.6   3.0   5.0     30   HP   50   380-415   Min.;342, Max.456   61.9   61.0   61.3   41.4   29.6   29.6   3.0   5.0     30   HP   50   380-415   Min.;342, Max.456   61.8   68.0   70   13.4   32.6   33.6   3.0   5.0     31   HP   50   380-415   Min.;342, Max.456   61.8   68.0   70   13.4   32.6   33.6   3.0   5.0     38   HP   50   380-415   Min.;342, Max.456   80.0   88.0   90   17.7   46.3   47.4   3.0   5.0     40   HP   50   380-415   Min.;342, Max.456   81.9   80.0   80   17.7   46.3   47.4   3.0   5.0     41   HP   50   380-415   Min.;342, Max.456   80.9   80.0   90   17.7   46.3   47.4   3.0   5.0     42   HP   50   380-415   Min.;342, Max.456   80.9   80.0   90   17.7   46.3   47.4   3.0   5.0     43   HP   50   380-415   Min.;342, Max.456   80.9   80.0   90   17.7   46.3   47.4   3.0   5.0     44   HP   50   380-415   Min.;342, Max.456   80.9   80.0   90	Model	Hz	Volts	Voltage-range				MSC		RLA(Heating)		
12   HP   50   380-415   Min.;342, Max.;456   25.5   28.0   32   5.9   112.0   112.4   1.2   2.5	8 HP	50	380-415	Min.:342, Max.:456	19.3	20.0	20	4.3	5.8	5.7	1.2	2.5
14 HP   50   380-415   Min,342, Max,456   27.3   30.0   32   5.9   14.8   16.5   17.3   1.8   2.5     18 HP   50   380-415   Min,342, Max,456   27.3   30.0   32   5.9   16.9   17.3   1.8   2.5     20 HP   50   380-415   Min,342, Max,456   31.8   35.0   35   7.5   17.6   17.3   1.8   2.5     20 HP   50   380-415   Min,342, Max,456   31.8   35.0   35   7.5   20.5   21.2   1.8   2.5     24 HP   50   380-415   Min,342, Max,456   37.8   42.0   45   7.5   24.9   26.6   18.8   2.5     24 HP   50   380-415   Min,342, Max,456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5     24 HP   50   380-415   Min,342, Max,456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5     25 HP   50   380-415   Min,342, Max,456   57.8   50.0   60   11.8   29.0   29.6   30.0   50     30 HP   50   380-415   Min,342, Max,456   57.3   63.0   63   13.4   29.6   29.6   30.0   50     32 HP   50   380-415   Min,342, Max,456   60.9   67.0   70   13.4   32.6   33.6   30.0   5.0     34 HP   50   380-415   Min,342, Max,456   61.8   66.0   70   13.4   36.9   39.0   30.0   5.0     35 HP   50   380-415   Min,342, Max,456   61.8   66.0   70   13.4   36.9   39.0   30.0   5.0     36 HP   50   380-415   Min,342, Max,456   61.8   66.0   70   70.1   70.4   70.5   70.5   70.5     40 HP   50   380-415   Min,342, Max,456   61.8   60.9   70.0   70.1   70.4   70.5   70.5   70.5     40 HP   50   380-415   Min,342, Max,456   80.0   80.0   90   17.7   46.3   47.4   3.0   5.0     40 HP   50   380-415   Min,342, Max,456   80.0   80.0   90   17.7   46.3   47.4   3.0   5.0     40 HP   50   380-415   Min,342, Max,456   80.0   80.0   90   17.7   46.3   47.4   48.3   3.6   5.0     40 HP   50   380-415   Min,342, Max,456   80.0   80.0   90   17.7   46.3   47.4   48.3   3.6   5.0     50 HP   50   380-415   Min,342, Max,456   80.0   80.0   90   17.7   46.3   49.1   48.3   3.6   5.0     50 HP   50   380-415   Min,342, Max,456   80.0   80.0   90   17.7   46.3   49.1   48.3   3.6   5.0     50 HP   50   380-415   Min,342, Max,456   80.0   80.0   80.0   80.0   80.0   80.0	10 HP	50	380-415	Min.:342, Max.:456	23.3	24.0	25	4.3	8.6	9.1	1.2	2.5
16   HP   50   380-415   Min.342, Max.466   27.3   30.0   32   5.9   16.9   17.3   1.8   2.5	12 HP	50	380-415	Min.:342, Max.:456	25.5	28.0	32	5.9	12.0	12.4	1.2	2.5
18   HP   50   380-415   Min.;342, Max.;466   31.8   35.0   35.   7.5   17.6   17.3   1.8   2.5	14 HP	50	380-415	Min.:342, Max.:456	26.1	29.0	32	5.9	14.8	16.5	1.2	2.5
20 HP   50   380-415   Min.;342, Max.,456   35.5   39.0   40   7.5   20.5   21.2   1.8   2.5	16 HP	50	380-415	Min.:342, Max.:456	27.3	30.0	32	5.9	16.9	17.3	1.8	2.5
22 HP   50   380-415   Min.;342, Max.;456   37.8   42.0   45   7.5   24.9   26.6   1.8   2.5	18 HP	50	380-415	Min.:342, Max.:456	31.8	35.0	35	7.5	17.6	17.3	1.8	2.5
24 HP   50   380-415   Min.:342, Max.:456   50.0   56.0   60   11.8   27.2   26.7   1.8   2.5	20 HP	50	380-415	Min.:342, Max.:456	35.5	39.0	40	7.5	20.5	21.2	1.8	2.5
28 HP   50   380-415   Min.;342, Max;456   54.5   60.0   60   11.8   29.0   29.6   3.0   5.0	22 HP	50	380-415	Min.:342, Max.:456	37.8	42.0	45	7.5	24.9	26.6	1.8	2.5
28 HP   50   380-415   Min.;342, Max;456   52.7   58.0   60   11.8   29.0   29.6   3.0   5.0	24 HP	50	380-415	Min.:342, Max.:456	50.0	56.0	60	11.8	27.2	26.7	1.8	2.5
30 HP 50 380-415 Min.;342, Max;456 67.3 63.0 63 13.4 29.6 29.6 3.0 5.0 32 HP 50 380-415 Min.;342, Max;456 60.9 67.0 70 13.4 32.6 33.6 3.0 5.0 3.0 HP 50 380-415 Min.;342, Max;456 61.8 68.0 70 13.4 36.9 39.0 3.0 5.0 36 HP 50 380-415 Min.;342, Max;456 80.0 80.0 80.0 90 17.7 43.5 43.4 3.0 5.0 40 HP 50 380-415 Min.;342, Max;456 80.0 80.0 80.0 90 17.7 43.5 43.4 3.0 5.0 40 HP 50 380-415 Min.;342, Max;456 80.0 80.0 90 17.7 48.3 47.4 3.0 5.0 44 HP 50 380-415 Min.;342, Max;456 80.9 80.0 90 17.7 48.3 47.4 3.0 5.0 44 HP 50 380-415 Min.;342, Max;456 80.4 80.0 90 17.7 48.4 48.3 3.6 5.0 44 HP 50 380-415 Min.;342, Max;456 80.4 95.0 100 19.3 49.1 48.3 3.6 5.0 5.0 46 HP 50 380-415 Min.;342, Max;456 80.4 95.0 100 19.3 49.1 48.3 3.6 5.0 5.0 46 HP 50 380-415 Min.;342, Max;456 80.4 95.0 100 19.3 56.4 57.6 3.6 5.0 50 HP 50 380-415 Min.;342, Max;456 105.0 116.0 125 23.6 58.7 57.7 3.6 5.0 50 HP 50 380-415 Min.;342, Max;456 105.0 116.0 125 23.6 58.7 57.7 3.6 5.0 50 HP 50 380-415 Min.;342, Max;456 105.0 116.0 125 23.6 63.0 62.0 3.6 5.0 50 HP 50 380-415 Min.;342, Max;456 105.0 116.0 125 23.6 63.0 62.0 3.6 5.0 50 HP 50 380-415 Min.;342, Max;456 105.0 116.0 125 23.6 63.0 62.0 3.6 5.0 50 HP 50 380-415 Min.;342, Max;456 105.0 116.0 125 23.6 60.5 60.6 4.8 7.5 56 HP 50 380-415 Min.;342, Max;456 105.1 116.0 125 23.6 60.5 60.6 4.8 7.5 66 HP 50 380-415 Min.;342, Max;456 117.6 130.0 150 25.2 66.5 69.9 4.8 7.5 66 HP 50 380-415 Min.;342, Max;456 117.6 130.0 150 25.2 66.5 69.9 4.8 7.5 66 HP 50 380-415 Min.;342, Max;456 117.6 130.0 150 25.2 66.5 69.9 4.8 7.5 66 HP 50 380-415 Min.;342, Max;456 117.6 130.0 150 25.5 70.7 69.9 4.8 7.5 70 HP 50 380-415 Min.;342, Max;456 117.6 130.0 150 29.5 77.8 78.4 4.8 7.5 7.5 79 HP 50 380-415 Min.;342, Max;456 134.5 148.0 150 29.5 77.8 78.4 4.8 7.5 7.5 79 HP 50 380-415 Min.;342, Max;456 16.0 17.6 17.5 31.1 80.6 79.3 54.4 7.5 7.5 79 HP 50 380-415 Min.;342, Max;456 168.6 180.0 17.5 31.1 80.6 79.3 54.4 7.5 79 HP 50 380-415 Min.;342, Max;456 168.6 180.0 200 35.4 91.9 91.6 6.6 10.0 91.0 91.0 91.0 91.0 91.0 91.0 91.0	26 HP	50	380-415	Min.:342, Max.:456	54.5	60.0	60	11.8	31.5	31.0	1.8	2.5
32 HP 50 380-415 Min.;342, Max.;456 60.9 67.0 70 13.4 32.6 33.6 3.0 5.0 34 HP 50 380-415 Min.;342, Max.;456 61.8 68.0 70 13.4 36.9 39.0 3.0 5.0 38 HP 50 380-415 Min.;342, Max.;456 76.4 84.0 80 17.7 39.3 39.1 3.0 5.0 38 HP 50 380-415 Min.;342, Max.;456 80.9 88.0 90 17.7 43.5 43.4 3.0 5.0 40 HP 50 380-415 Min.;342, Max.;456 80.9 88.0 90 17.7 46.3 47.4 3.0 5.0 44 HP 50 380-415 Min.;342, Max.;456 81.8 90.0 90 17.7 46.3 47.4 3.3 3.6 5.0 44 HP 50 380-415 Min.;342, Max.;456 81.8 90.0 90 17.7 46.3 47.4 3.3 3.6 5.0 44 HP 50 380-415 Min.;342, Max.;456 81.8 90.0 90 17.7 48.4 48.3 3.6 5.0 48 HP 50 380-415 Min.;342, Max.;456 81.8 90.0 90 17.7 48.1 48.3 3.6 5.0 5.0 48 HP 50 380-415 Min.;342, Max.;456 81.4 95.0 100 19.3 49.1 48.3 3.6 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	28 HP	50	380-415	Min.:342, Max.:456	52.7	58.0	60	11.8	29.0	29.6	3.0	5.0
34 HP 50 380-415 Min:342, Max.456 61.8 68.0 70 13.4 36.9 39.0 3.0 5.0 36 HP 50 380-415 Min:342, Max.456 76.4 84.0 80 17.7 39.3 39.1 3.0 5.0 40 HP 50 380-415 Min:342, Max.456 80.9 88.0 90 17.7 43.5 43.4 3.0 5.0 40 HP 50 380-415 Min:342, Max.456 80.9 89.0 90 17.7 45.3 47.4 3.0 5.0 42 HP 50 380-415 Min:342, Max.456 81.8 90.0 90 17.7 46.3 47.4 3.0 5.0 44 HP 50 380-415 Min:342, Max.456 81.8 90.0 90 17.7 48.4 48.3 3.6 5.0 44 HP 50 380-415 Min:342, Max.456 86.4 95.0 100 19.3 49.1 48.3 3.6 5.0 44 HP 50 380-415 Min:342, Max.456 86.4 95.0 100 19.3 52.0 52.2 3.6 5.0 5.0 48 HP 50 380-415 Min:342, Max.456 10.0 19.3 52.0 52.2 3.6 5.0 50.0 48 HP 50 380-415 Min:342, Max.456 10.0 11.0 19.3 52.0 52.2 3.6 5.0 50.0 50.0 50.0 50.0 50.0 50.0 50.	30 HP	50	380-415	Min.:342, Max.:456	57.3	63.0	63	13.4	29.6	29.6	3.0	5.0
36 HP 50 380-415 Min.;342, Max.;456 76.4 84.0 80 17.7 39.3 39.1 3.0 5.0 88 HP 50 380-415 Min.;342, Max.;456 80.0 88.0 90 17.7 43.5 43.4 3.0 5.0 42 HP 50 380-415 Min.;342, Max.;456 81.8 90.0 90 17.7 46.3 47.4 3.0 5.0 42 HP 50 380-415 Min.;342, Max.;456 81.8 90.0 90 17.7 48.4 48.3 3.6 5.0 44 HP 50 380-415 Min.;342, Max.;456 86.4 95.0 100 19.3 49.1 48.3 3.6 5.0 46 HP 50 380-415 Min.;342, Max.;456 86.4 95.0 100 19.3 49.1 48.3 3.6 5.0 5.0 48 HP 50 380-415 Min.;342, Max.;456 88.4 99.0 100 19.3 52.0 52.2 3.6 5.0 5.0 50 HP 50 380-415 Min.;342, Max.;456 105.0 116.0 125 23.6 58.7 57.7 3.6 5.0 50 HP 50 380-415 Min.;342, Max.;456 105.0 116.0 125 23.6 58.7 57.7 3.6 5.0 50 HP 50 380-415 Min.;342, Max.;456 109.1 120.0 125 23.6 63.0 62.0 3.6 5.0 50 HP 50 380-415 Min.;342, Max.;456 109.1 120.0 125 23.6 60.5 60.6 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 109.1 120.0 125 23.6 60.5 60.6 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 109.1 120.0 125 23.6 60.5 60.6 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 110.8 123.0 125 25.2 61.1 60.6 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 110.8 123.0 125 25.2 64.1 64.5 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 117.6 130.0 150 25.2 68.5 69.9 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 117.6 130.0 150 25.2 68.5 69.9 4.8 7.5 66 HP 50 380-415 Min.;342, Max.;456 134.2 149.0 150 29.5 70.7 69.9 4.8 7.5 68 HP 50 380-415 Min.;342, Max.;456 134.2 149.0 150 29.5 77.8 78.4 4.8 7.5 68 HP 50 380-415 Min.;342, Max.;456 134.2 149.0 150 29.5 77.8 78.4 4.8 7.5 79 HP 50 380-415 Min.;342, Max.;456 134.2 149.0 150 29.5 77.8 78.4 4.8 7.5 79 HP 50 380-415 Min.;342, Max.;456 134.2 149.0 150 29.5 79.9 79.3 5.4 7.5 79 HP 50 380-415 Min.;342, Max.;456 134.2 149.0 150 29.5 79.9 79.3 5.4 7.5 79 HP 50 380-415 Min.;342, Max.;456 16.6 16.0 17.0 175 31.1 87.9 88.6 5.4 7.5 79 HP 50 380-415 Min.;342, Max.;456 16.8 18.0 200 35.4 91.9 91.6 6.6 10.0 84 HP 50 380-415 Min.;342, Max.;456 16.8 18.0 200 35.4 91.9 91.6 6.6 10.0 84 HP 50 380-415 Min.;342, Max.;456 16.8 18.0 200 37.0 92.6 91.6 6.6 10.0 84 HP 50 380-415 Min.;342, Max.	32 HP	50	380-415	Min.:342, Max.:456	60.9	67.0	70	13.4	32.6	33.6	3.0	5.0
38   P	34 HP	50	380-415		61.8	68.0	70	13.4	36.9	39.0	3.0	5.0
40 HP         50         380-415         Min:342, Max:456         80.9         89.0         90         17.7         46.3         47.4         3.0         5.0           42 HP         50         380-415         Min:342, Max:456         81.8         90.0         90         17.7         48.4         48.3         3.6         5.0           44 HP         50         380-415         Min:342, Max:456         88.4         99.0         100         19.3         49.1         48.3         3.6         5.0           48 HP         50         380-415         Min:342, Max:456         88.4         99.0         100         19.3         56.4         57.6         3.6         5.0           50 HP         50         380-415         Min:342, Max:456         105.0         116.0         125         23.6         58.7         57.7         3.6         5.0           50 HP         50         380-415         Min:342, Max:456         105.1         120.0         125         23.6         63.0         62.0         3.6         5.0           54 HP         50         380-415         Min:342, Max:456         107.3         118.0         125         23.6         60.5         60.6         4.8         7	36 HP	50	380-415		76.4	84.0	80	17.7	39.3	39.1	3.0	5.0
42 HP         50         380-415         Min:342, Max:456         81.8         90.0         90         17.7         48.4         48.3         3.6         5.0           44 HP         50         380-415         Min:342, Max:456         86.4         95.0         100         19.3         49.1         48.3         3.6         5.0           46 HP         50         380-415         Min:342, Max:456         82.7         102.0         110         19.3         52.0         52.2         3.6         5.0           50 HP         50         380-415         Min:342, Max:456         92.7         102.0         110         19.3         56.4         57.6         3.6         5.0           52 HP         50         380-415         Min:342, Max:456         109.1         120.0         125         23.6         63.0         62.0         3.6         5.0           54 HP         50         380-415         Min:342, Max:456         109.1         125         23.6         63.0         62.0         3.6         5.0           56 HP         50         380-415         Min:342, Max:456         110.8         123.0         125         22.2         64.1         64.5         4.8         7.5	38 HP	50	380-415	Min.:342, Max.:456	80.0	88.0	90		43.5		3.0	5.0
44 HP         50         380-415         Min.:342, Max.:456         86.4         95.0         100         19.3         49.1         48.3         3.6         5.0           46 HP         50         380-415         Min.:342, Max.:456         88.4         99.0         100         19.3         52.0         52.2         3.6         5.0           48 HP         50         380-415         Min.:342, Max.:456         105.0         110         19.3         56.4         57.6         3.6         5.0           50 HP         50         380-415         Min.:342, Max.:456         105.0         116.0         125         23.6         63.0         62.0         3.6         5.0           52 HP         50         380-415         Min.:342, Max.:456         107.3         118.0         125         23.6         63.0         62.0         3.6         5.0           56 HP         50         380-415         Min.:342, Max.:456         110.8         123.0         125         25.2         66.1         60.6         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         25.2         66.5         69.9         4.8         7.5<	40 HP	50	380-415	Min.:342, Max.:456	80.9	89.0	90	17.7			3.0	5.0
46 HP         50         380-415         Min.:342, Max.:456         88.4         99.0         100         19.3         52.0         52.2         3.6         5.0           48 HP         50         380-415         Min::342, Max.:456         92.7         102.0         110         19.3         56.4         57.6         3.6         5.0           50 HP         50         380-415         Min::342, Max.:456         105.0         116.0         125         23.6         58.7         57.7         3.6         5.0           54 HP         50         380-415         Min::342, Max.:456         109.1         120.0         125         23.6         63.0         62.0         3.6         5.0           56 HP         50         380-415         Min::342, Max.:456         117.6         118.0         125         23.6         60.5         60.6         4.8         7.5           56 HP         50         380-415         Min::342, Max.:456         117.6         130.0         150         25.2         61.1         60.6         4.8         7.5           60 HP         50         380-415         Min::342, Max.:456         117.6         130.0         150         25.2         68.5         69.9         4	42 HP	50	380-415	Min.:342, Max.:456	81.8	90.0	90	17.7	48.4	48.3	3.6	5.0
48 HP         50         380-415         Min.:342, Max::456         92.7         102.0         110         19.3         56.4         57.6         3.6         5.0           50 HP         50         380-415         Min::342, Max::456         105.0         116.0         125         23.6         58.7         57.7         3.6         5.0           52 HP         50         380-415         Min::342, Max::456         109.1         120.0         125         23.6         63.0         62.0         3.6         5.0           54 HP         50         380-415         Min::342, Max::456         107.3         118.0         125         23.6         60.5         60.6         4.8         7.5           56 HP         50         380-415         Min::342, Max::456         115.5         127.0         150         25.2         64.1         64.5         4.8         7.5           60 HP         50         380-415         Min::342, Max::456         117.6         130.0         150         25.2         68.5         69.9         4.8         7.5           62 HP         50         380-415         Min::342, Max::456         134.2         148.0         150         29.5         70.7         69.9 <td< td=""><td>44 HP</td><td>50</td><td>380-415</td><td>Min.:342, Max.:456</td><td>86.4</td><td>95.0</td><td>100</td><td>19.3</td><td>49.1</td><td>48.3</td><td>3.6</td><td>5.0</td></td<>	44 HP	50	380-415	Min.:342, Max.:456	86.4	95.0	100	19.3	49.1	48.3	3.6	5.0
50 HP         50         380-415         Min.:342, Max.:456         105.0         116.0         125         23.6         58.7         57.7         3.6         5.0           52 HP         50         380-415         Min.:342, Max.:456         109.1         120.0         125         23.6         63.0         62.0         3.6         5.0           54 HP         50         380-415         Min.:342, Max.:456         107.3         118.0         125         23.6         60.5         60.6         4.8         7.5           56 HP         50         380-415         Min.:342, Max.:456         110.8         123.0         125         25.2         61.1         60.6         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         115.5         127.0         150         25.2         68.5         69.9         4.8         7.5           62 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         77.0         77.8 <t< td=""><td>46 HP</td><td>50</td><td>380-415</td><td>Min.:342, Max.:456</td><td>88.4</td><td>99.0</td><td>100</td><td>19.3</td><td>52.0</td><td>52.2</td><td>3.6</td><td>5.0</td></t<>	46 HP	50	380-415	Min.:342, Max.:456	88.4	99.0	100	19.3	52.0	52.2	3.6	5.0
52 HP         50         380-415         Min.:342, Max.:456         109.1         120.0         125         23.6         63.0         62.0         3.6         5.0           54 HP         50         380-415         Min.:342, Max.:456         107.3         118.0         125         23.6         60.5         60.6         4.8         7.5           56 HP         50         380-415         Min.:342, Max.:456         110.8         123.0         125         25.2         61.1         60.6         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         25.2         64.1         64.5         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         77.5         77.7 <t< td=""><td>48 HP</td><td>50</td><td>380-415</td><td>Min.:342, Max.:456</td><td>92.7</td><td>102.0</td><td>110</td><td>19.3</td><td>56.4</td><td>57.6</td><td>3.6</td><td>5.0</td></t<>	48 HP	50	380-415	Min.:342, Max.:456	92.7	102.0	110	19.3	56.4	57.6	3.6	5.0
54 HP         50         380-415         Min.:342, Max.:456         107.3         118.0         125         23.6         60.5         60.6         4.8         7.5           56 HP         50         380-415         Min.:342, Max.:456         110.8         123.0         125         25.2         61.1         60.6         4.8         7.5           58 HP         50         380-415         Min.:342, Max.:456         115.5         127.0         150         25.2         64.1         64.5         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         25.2         68.5         69.9         4.8         7.5           62 HP         50         380-415         Min.:342, Max.:456         127.0         141.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         75.0         74.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max.:456         136.4         150.0         150         29.5         77.9         79.3 <t< td=""><td></td><td>50</td><td>380-415</td><td></td><td></td><td></td><td>125</td><td>23.6</td><td>58.7</td><td>57.7</td><td>3.6</td><td>5.0</td></t<>		50	380-415				125	23.6	58.7	57.7	3.6	5.0
56 HP         50         380-415         Min.:342, Max.:456         110.8         123.0         125         25.2         61.1         60.6         4.8         7.5           58 HP         50         380-415         Min.:342, Max.:456         115.5         127.0         150         25.2         64.1         64.5         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         25.2         68.5         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         127.0         141.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         75.0         74.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         77.8         78.4         4.8         7.5           70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3 <t< td=""><td></td><td>50</td><td>380-415</td><td>Min.:342, Max.:456</td><td>109.1</td><td>120.0</td><td>125</td><td>23.6</td><td>63.0</td><td>62.0</td><td>3.6</td><td>5.0</td></t<>		50	380-415	Min.:342, Max.:456	109.1	120.0	125	23.6	63.0	62.0	3.6	5.0
58 HP         50         380-415         Min.:342, Max.:456         115.5         127.0         150         25.2         64.1         64.5         4.8         7.5           60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         25.2         68.5         69.9         4.8         7.5           62 HP         50         380-415         Min.:342, Max.:456         127.0         141.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         75.0         74.4         4.8         7.5           66 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         77.8         78.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max.:456         136.4         150.0         150         29.5         77.9         79.3         5.4         7.5           70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         31.1         80.6         79.3         5.4 <t< td=""><td>54 HP</td><td>50</td><td>380-415</td><td>Min.:342, Max.:456</td><td>107.3</td><td>118.0</td><td>125</td><td>23.6</td><td>60.5</td><td>60.6</td><td>4.8</td><td></td></t<>	54 HP	50	380-415	Min.:342, Max.:456	107.3	118.0	125	23.6	60.5	60.6	4.8	
60 HP         50         380-415         Min.:342, Max.:456         117.6         130.0         150         25.2         68.5         69.9         4.8         7.5           62 HP         50         380-415         Min.:342, Max.:456         127.0         141.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         75.0         74.4         4.8         7.5           66 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         77.8         78.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max.:456         136.4         150.0         150         29.5         79.9         79.3         5.4         7.5           70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           74 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         87.9         88.6 <t< td=""><td>56 HP</td><td>50</td><td>380-415</td><td></td><td>110.8</td><td>123.0</td><td>125</td><td>25.2</td><td>61.1</td><td>60.6</td><td>4.8</td><td>7.5</td></t<>	56 HP	50	380-415		110.8	123.0	125	25.2	61.1	60.6	4.8	7.5
62 HP         50         380-415         Min.:342, Max.:456         127.0         141.0         150         29.5         70.7         69.9         4.8         7.5           64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         75.0         74.4         4.8         7.5           66 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         77.8         78.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max.:456         136.4         150.0         150         29.5         77.8         78.4         4.8         7.5           70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           72 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         83.5         83.2         5.4         7.5           74 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         31.1         87.9         88.6 <t< td=""><td>58 HP</td><td>50</td><td></td><td>Min.:342, Max.:456</td><td>115.5</td><td>127.0</td><td>150</td><td></td><td>64.1</td><td>64.5</td><td>4.8</td><td>7.5</td></t<>	58 HP	50		Min.:342, Max.:456	115.5	127.0	150		64.1	64.5	4.8	7.5
64 HP         50         380-415         Min.:342, Max.:456         134.5         148.0         150         29.5         75.0         74.4         4.8         7.5           66 HP         50         380-415         Min.:342, Max.:456         134.2         149.0         150         29.5         77.8         78.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max.:456         136.4         150.0         150         29.5         79.9         79.3         5.4         7.5           70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           72 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           74 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         87.9         88.6         5.4         7.5           78 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         35.4         90.2         88.7 <t< td=""><td>60 HP</td><td>50</td><td></td><td></td><td>117.6</td><td>130.0</td><td>150</td><td>25.2</td><td>68.5</td><td>69.9</td><td>4.8</td><td>7.5</td></t<>	60 HP	50			117.6	130.0	150	25.2	68.5	69.9	4.8	7.5
66 HP         50         380-415         Min.:342, Max::456         134.2         149.0         150         29.5         77.8         78.4         4.8         7.5           68 HP         50         380-415         Min.:342, Max::456         136.4         150.0         150         29.5         79.9         79.3         5.4         7.5           70 HP         50         380-415         Min.:342, Max::456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           72 HP         50         380-415         Min.:342, Max::456         143.2         159.0         175         31.1         83.5         83.2         5.4         7.5           74 HP         50         380-415         Min.:342, Max::456         146.6         162.0         175         31.1         87.9         88.6         5.4         7.5           76 HP         50         380-415         Min.:342, Max::456         160.0         176.0         175         35.4         90.2         88.7         5.4         7.5           78 HP         50         380-415         Min.:342, Max::456         161.8         178.0         200         35.4         94.4         93.0 <t< td=""><td></td><td>50</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4.8</td><td></td></t<>		50									4.8	
68 HP         50         380-415         Min.:342, Max.:456         136.4         150.0         150         29.5         79.9         79.3         5.4         7.5           70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           72 HP         50         380-415         Min.:342, Max.:456         143.2         159.0         175         31.1         83.5         83.2         5.4         7.5           74 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         87.9         88.6         5.4         7.5           76 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         35.4         90.2         88.7         5.4         7.5           78 HP         50         380-415         Min.:342, Max.:456         163.6         180.0         200         35.4         94.4         93.0         5.4         7.5           80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         37.0         92.6         91.6 <t< td=""><td></td><td>50</td><td></td><td></td><td>_</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		50			_							
70 HP         50         380-415         Min.:342, Max.:456         140.9         155.0         150         31.1         80.6         79.3         5.4         7.5           72 HP         50         380-415         Min.:342, Max.:456         143.2         159.0         175         31.1         83.5         83.2         5.4         7.5           74 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         87.9         88.6         5.4         7.5           76 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         35.4         90.2         88.7         5.4         7.5           78 HP         50         380-415         Min.:342, Max.:456         163.6         180.0         200         35.4         94.4         93.0         5.4         7.5           80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         35.4         91.9         91.6         6.6         10.0           82 HP         50         380-415         Min.:342, Max.:456         168.5         187.0         200         37.0         92.6         91.6         <		50					_					
72 HP         50         380-415         Min.:342, Max.:456         143.2         159.0         175         31.1         83.5         83.2         5.4         7.5           74 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         87.9         88.6         5.4         7.5           76 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         35.4         90.2         88.7         5.4         7.5           78 HP         50         380-415         Min.:342, Max.:456         163.6         180.0         200         35.4         94.4         93.0         5.4         7.5           80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         35.4         91.9         91.6         6.6         10.0           82 HP         50         380-415         Min.:342, Max.:456         166.4         183.0         200         37.0         92.6         91.6         6.6         10.0           86 HP         50         380-415         Min.:342, Max.:456         171.2         190.0         200         37.0         100.0         100.9		50			_							
74 HP         50         380-415         Min.:342, Max.:456         146.6         162.0         175         31.1         87.9         88.6         5.4         7.5           76 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         35.4         90.2         88.7         5.4         7.5           78 HP         50         380-415         Min.:342, Max.:456         163.6         180.0         200         35.4         94.4         93.0         5.4         7.5           80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         35.4         91.9         91.6         6.6         10.0           82 HP         50         380-415         Min.:342, Max.:456         166.4         183.0         200         37.0         92.6         91.6         6.6         10.0           84 HP         50         380-415         Min.:342, Max.:456         168.5         187.0         200         37.0         95.5         95.5         6.6         10.0           88 HP         50         380-415         Min.:342, Max.:456         185.5         204.0         200         41.3         102.2         101.1		50				_						
76 HP         50         380-415         Min.:342, Max.:456         160.0         176.0         175         35.4         90.2         88.7         5.4         7.5           78 HP         50         380-415         Min.:342, Max.:456         163.6         180.0         200         35.4         94.4         93.0         5.4         7.5           80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         35.4         91.9         91.6         6.6         10.0           82 HP         50         380-415         Min.:342, Max.:456         166.4         183.0         200         37.0         92.6         91.6         6.6         10.0           84 HP         50         380-415         Min.:342, Max.:456         168.5         187.0         200         37.0         95.5         95.5         6.6         10.0           86 HP         50         380-415         Min.:342, Max.:456         171.2         190.0         200         37.0         100.0         100.9         6.6         10.0           88 HP         50         380-415         Min.:342, Max.:456         185.5         204.0         200         41.3         102.2         101.1							_					
78 HP         50         380-415         Min.:342, Max.:456         163.6         180.0         200         35.4         94.4         93.0         5.4         7.5           80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         35.4         91.9         91.6         6.6         10.0           82 HP         50         380-415         Min.:342, Max.:456         166.4         183.0         200         37.0         92.6         91.6         6.6         10.0           84 HP         50         380-415         Min.:342, Max.:456         168.5         187.0         200         37.0         95.5         95.5         6.6         10.0           86 HP         50         380-415         Min.:342, Max.:456         171.2         190.0         200         37.0         100.0         100.9         6.6         10.0           88 HP         50         380-415         Min.:342, Max.:456         185.5         204.0         200         41.3         102.2         101.1         6.6         10.0           92 HP         50         380-415         Min.:342, Max.:456         189.1         208.0         200         41.3         106.5         105.3					_							
80 HP         50         380-415         Min.:342, Max.:456         161.8         178.0         200         35.4         91.9         91.6         6.6         10.0           82 HP         50         380-415         Min.:342, Max.:456         166.4         183.0         200         37.0         92.6         91.6         6.6         10.0           84 HP         50         380-415         Min.:342, Max.:456         168.5         187.0         200         37.0         95.5         95.5         6.6         10.0           86 HP         50         380-415         Min.:342, Max.:456         171.2         190.0         200         37.0         100.0         100.9         6.6         10.0            88 HP         50         380-415         Min.:342, Max.:456         185.5         204.0         200         41.3         102.2         101.1         6.6         10.0           90 HP         50         380-415         Min.:342, Max.:456         189.1         208.0         200         41.3         106.5         105.3         6.6         10.0           92 HP         50         380-415         Min.:342, Max.:456         188.2         207.0         200         42.9         109.3         109.5<				· ·	_	_						
82 HP         50         380-415         Min.:342, Max.:456         166.4         183.0         200         37.0         92.6         91.6         6.6         10.0           84 HP         50         380-415         Min.:342, Max.:456         168.5         187.0         200         37.0         95.5         95.5         6.6         10.0           86 HP         50         380-415         Min.:342, Max.:456         171.2         190.0         200         37.0         100.0         100.9         6.6         10.0           88 HP         50         380-415         Min.:342, Max.:456         185.5         204.0         200         41.3         102.2         101.1         6.6         10.0           90 HP         50         380-415         Min.:342, Max.:456         189.1         208.0         200         41.3         106.5         105.3         6.6         10.0           92 HP         50         380-415         Min.:342, Max.:456         188.2         207.0         200         42.9         109.3         109.5         7.2         10.0           94 HP         50         380-415         Min.:342, Max.:456         190.9         210.0         200         41.3         111.4         110.3												
84 HP       50       380-415       Min.:342, Max.:456       168.5       187.0       200       37.0       95.5       95.5       6.6       10.0         86 HP       50       380-415       Min.:342, Max.:456       171.2       190.0       200       37.0       100.0       100.9       6.6       10.0         88 HP       50       380-415       Min.:342, Max.:456       185.5       204.0       200       41.3       102.2       101.1       6.6       10.0         90 HP       50       380-415       Min.:342, Max.:456       189.1       208.0       200       41.3       106.5       105.3       6.6       10.0         92 HP       50       380-415       Min.:342, Max.:456       188.2       207.0       200       42.9       109.3       109.5       7.2       10.0         94 HP       50       380-415       Min.:342, Max.:456       190.9       210.0       200       41.3       111.4       110.3       7.2       10.0         96 HP       50       380-415       Min.:342, Max.:456       195.5       215.0       250       42.9       112.0       110.3       7.2       10.0		50	380-415		161.8	178.0	200		91.9		6.6	10.0
86 HP       50       380-415       Min.:342, Max.:456       171.2       190.0       200       37.0       100.0       100.9       6.6       10.0         88 HP       50       380-415       Min.:342, Max.:456       185.5       204.0       200       41.3       102.2       101.1       6.6       10.0         90 HP       50       380-415       Min.:342, Max.:456       189.1       208.0       200       41.3       106.5       105.3       6.6       10.0         92 HP       50       380-415       Min.:342, Max.:456       188.2       207.0       200       42.9       109.3       109.5       7.2       10.0         94 HP       50       380-415       Min.:342, Max.:456       190.9       210.0       200       41.3       111.4       110.3       7.2       10.0         96 HP       50       380-415       Min.:342, Max.:456       195.5       215.0       250       42.9       112.0       110.3       7.2       10.0												_
88 HP     50     380-415     Min.:342, Max.:456     185.5     204.0     200     41.3     102.2     101.1     6.6     10.0       90 HP     50     380-415     Min.:342, Max.:456     189.1     208.0     200     41.3     106.5     105.3     6.6     10.0       92 HP     50     380-415     Min.:342, Max.:456     188.2     207.0     200     42.9     109.3     109.5     7.2     10.0       94 HP     50     380-415     Min.:342, Max.:456     190.9     210.0     200     41.3     111.4     110.3     7.2     10.0       96 HP     50     380-415     Min.:342, Max.:456     195.5     215.0     250     42.9     112.0     110.3     7.2     10.0		-		· · · · · · · · · · · · · · · · · · ·								
90 HP         50         380-415         Min.:342, Max.:456         189.1         208.0         200         41.3         106.5         105.3         6.6         10.0           92 HP         50         380-415         Min.:342, Max.:456         188.2         207.0         200         42.9         109.3         109.5         7.2         10.0           94 HP         50         380-415         Min.:342, Max.:456         190.9         210.0         200         41.3         111.4         110.3         7.2         10.0           96 HP         50         380-415         Min.:342, Max.:456         195.5         215.0         250         42.9         112.0         110.3         7.2         10.0				,								
92 HP         50         380-415         Min.:342, Max.:456         188.2         207.0         200         42.9         109.3         109.5         7.2         10.0           94 HP         50         380-415         Min.:342, Max.:456         190.9         210.0         200         41.3         111.4         110.3         7.2         10.0           96 HP         50         380-415         Min.:342, Max.:456         195.5         215.0         250         42.9         112.0         110.3         7.2         10.0				·								_
94 HP     50     380-415     Min.:342, Max.:456     190.9     210.0     200     41.3     111.4     110.3     7.2     10.0       96 HP     50     380-415     Min.:342, Max.:456     195.5     215.0     250     42.9     112.0     110.3     7.2     10.0		-		·								
96 HP 50 380-415 Min.:342, Max.:456 195.5 215.0 250 42.9 112.0 110.3 7.2 10.0				· · · · · · · · · · · · · · · · · · ·		_						
		50	380-415	Min.:342, Max.:456	195.5	215.0	250	42.9	112.0	110.3	7.2	10.0

- 1. Voltage supplied to the unit terminals should be within the minimum and maximum range.
- 2. Maximum allowable voltage unbalance between phase is 2%.
- 3. MSC means the Max. current during the starting of compressor. 4. MSC and RLA are measured as the compressor only test condition.
- 5. OFM are measured as the outdoor unit test condition.
- 6. TOCA means the total over current value of each outdoor unit.
- . Select the wire size based on the larger value among MCA or TOCA.
- 8, MFA is recommended fuse amps.
- TOCA is minimum required amperes for selecting the circuit breaker and ground fault circuit interrupter. Please select the circuit breaker size equal or greater than TOCA. All installation site must require attachment of an earth leakage breaker.[Circuit breaker type is ELCB (Earth Leakage Circuit Breaker)].
- 10. Select the electrical equipment of combination unit according to the electrical characteristics of individual unit.

MCA: Minimum Circuit Amperes (A)

TOCA: Total Over Current Amperes (A)

MFA: Maximum Fuse Amperes (A)

MSC: Maximum Starting Current (A)

RLA: Rated Load Amperes (A)

**OFM**: Outdoor Fan Motor kW: Fan Motor rated output (kW)

FLA: Full Load Amperes (A)

Model	Unit			Power Supply				COMP		OFM	
Wodei	Hz	Volts	Voltage-range	MCA	TOCA	MFA	MSC	RLA (Cooling)	RLA(Heating)	kW	FLA
98 HP	50	380-415	Min.:342, Max.:456	199.1	219.0	250	42.9	115.0	114.2	7.2	10.0
100 HP	50	380-415	Min.:342, Max.:456	201.8	222.0	250	42.9	119.4	119.6	7.2	10.0
102 HP	50	380-415	Min.:342, Max.:456	214.5	236.0	250	47.2	121.7	119.7	7.2	10.0
104 HP	50	380-415	Min.:342, Max.:456	218.2	240.0	250	47.2	125.9	124.0	7.2	10.0

- 1. Voltage supplied to the unit terminals should be within the minimum and maximum range.
- 2. Maximum allowable voltage unbalance between phase is 2%.
- 3. MSC means the Max. current during the starting of compressor.
- 4. MSC and RLA are measured as the compressor only test condition.
- 5. OFM are measured as the outdoor unit test condition.
- 6. TOCA means the total over current value of each outdoor unit.
- 7. Select the wire size based on the larger value among MCA or TOCA.
- 8. MFA is recommended fuse amps.
- 9. TOCA is minimum required amperes for selecting the circuit breaker and ground fault circuit interrupter. Please select the circuit breaker size equal or greater than TOCA. All installation site must require attachment of an earth leakage breaker.[Circuit breaker type is ELCB (Earth Leakage Circuit Breaker)].
- 10. Select the electrical equipment of combination unit according to the electrical characteristics of individual unit.

#### Symbols

MCA: Minimum Circuit Amperes (A)

TOCA: Total Over Current Amperes (A)

MFA: Maximum Fuse Amperes (A)

MSC: Maximum Starting Current (A) RLA: Rated Load Amperes (A)

**OFM**: Outdoor Fan Motor

kW : Fan Motor rated output (kW)

FLA: Full Load Amperes (A)




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LG HVAC Vietnam



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\* For continual product development, LG reserves the right to change specifications or design without notice.

#### \* Note

This product uses inverter technology, so it can generate harmonics. If local law or the Investor requires harmonic suppression at the construction site, please coordinate with the electrical design unit to take measures to suppress harmonics. Contact your supplier for more detailed information on the electrical characteristics of LG air conditioners.

