

HITACHI

SideSmart™

Variable Refrigerant Flow System
Slim Modular Outdoor Units
Air Source Heat Pump Type



The world's first slim modular VRF!

SideSmart™ is an exclusive solution, offering until now an unseen combination of benefits: performance equaling large top-flow units, with slim modular units which can fit anywhere.



**5
SMART**

CONCEPT	DESIGN	CONFIGURATION	SPACE LAYOUT	INVESTMENT
Modularity with great performance Benefits from the highest level of Hitachi VRF efficiency	Connectable slim side-flow modules For the first time, side-flow slim units can be connected to combine their capacities	Can be installed on different floors Thanks to flexible capacities and options for indoor locations	Save building space Reserve your rooftop for other purposes and optimize your indoor layout	Save cost at every stage Fewer piping runs, a simplified installation and energy-saving operation



Single Cabinet	HP	8	10	12	14	16	18
Dimensions (H x W x D)	mm	1,650 x 1,050 x 420			1,650 x 1,190 x 420		
Net Weight	kg	185	197	203	219	225	225
220V	kg	188	200	205	223	231	231
Cooling Capacity	kW	22.4	28.0	33.5	40.0	45.0	50.0
Heating Capacity	kW	25.0	31.5	37.5	45.0	50.0	54.0
Performance	EER (Cooling)	4.51	4.26	4.27	3.85	3.79	3.54
	COP (Heating)	4.92	4.44	4.68	4.40	4.41	3.90
Air Flow Volume	(m³/min)	160	185	200	250	258	258
Noise leveldB(A)	SPL ¹ (Cooling/Heating) dB(A)	55/56	59/60	60/62	60/61	62/64	62/64

¹ SPL is measured by an anechoic room, so that reflected sound should be taken into consideration in the field.



SideSmart™ key figures.

3 patents

A true innovation! Only SideSmart™ can achieve this level of flexibility & efficiency:

- Round-shaft motor clamp.
- Tandem sub-cooling system.
- Heating rapid-start technology.

From 1 to 4 modules

Combine and connect up to 4 modules together!

-13% refrigerant charge

A lower amount of refrigerant is required compared to our VRF systems with top-flow outdoor units.

Up to 500m of piping

It adapts to your building's layout, with up to 500m of total piping runs and up to 120m between outdoor units and indoor units. Up to 150m equivalent distance between outdoor unit and indoor unit.

8 HP to 72 HP

With our various modules, SideSmart™ offers a vast array of capacities.

Extra savings at <40 % part-load

Hitachi exclusive SmoothDrive™ micro-precision technology boosts energy efficiency during part-load operation, to meet real life conditions.

42 cm slim

SideSmart™ modules are only 42cm deep, so they can fit even in narrow spaces.

100% preserved rooftop

By choosing to install SideSmart in the building's floors, your rooftop will be free of air conditioning equipment.

EER average of 4.32

SideSmart™ delivers the same astonishing level of energy savings as the largest VRF systems:

- Single cabinet 8HP EER up to 4.51.
- EER 4.32 / COP4.70 average for premium combination.

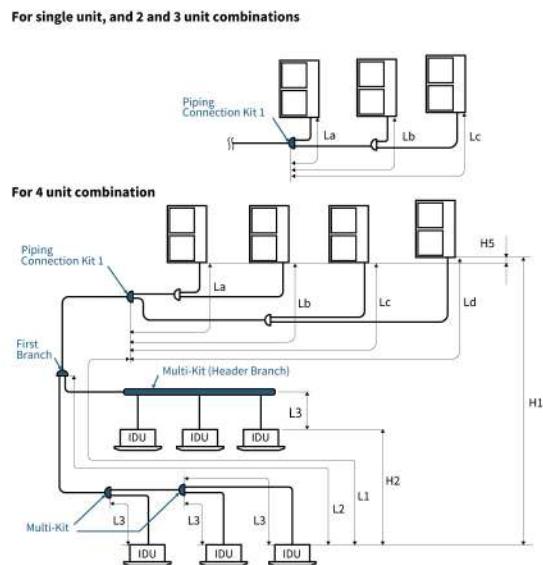
Features & benefits

Flexibility: meet your project requirements.

GREAT PIPING FLEXIBILITY

- Suitable for a medium-size buildings or complex facilities.
- Leads to cost & time saving for designers, with improved system design efficiency.

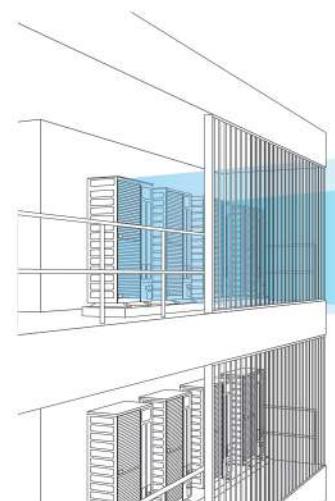
	MARK	
Total	m 500	-
From (Piping Connection Kit 1) to the furthest IDU	m 120 (Actual) L1	
Between (Piping Connection Kit 1) and each ODU	m 150 (Equivalent)	
Between (First Branch) and the furthest IDU	m 10 La, b, c, d L2	
Between each (Multi-Kit) and each IDU	m 40 L3	
Between ODUs	m 0.1 H5	
Maximum Height Difference Between ODU and IDU (ODU above IDU)	m 50 H1	
Between ODU and IDU (IDU above ODU)	m 40	
Between IDUs	m 30 H2	



ESP: FLEXIBLE INDOOR INSTALLATION

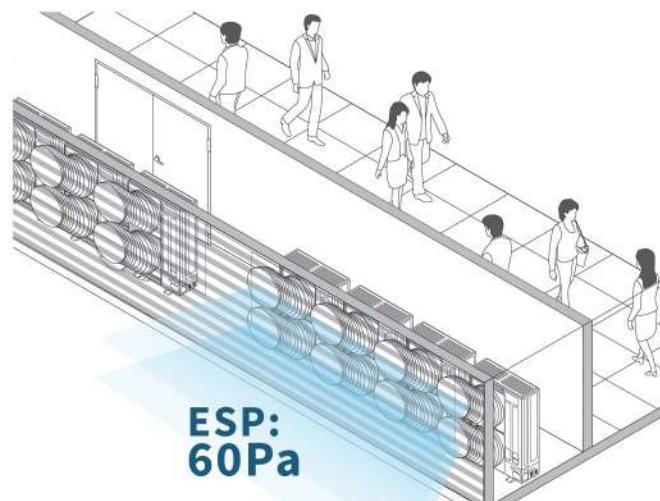
- SideSmart™ can also be accommodated indoors, thanks to its external static pressure options up to 60Pa.
- Effective heat discharge to the outside is ensured.
 - SideSmart™ units are completely invisible from the building facade.

Equipment balcony.



ESP:
30Pa

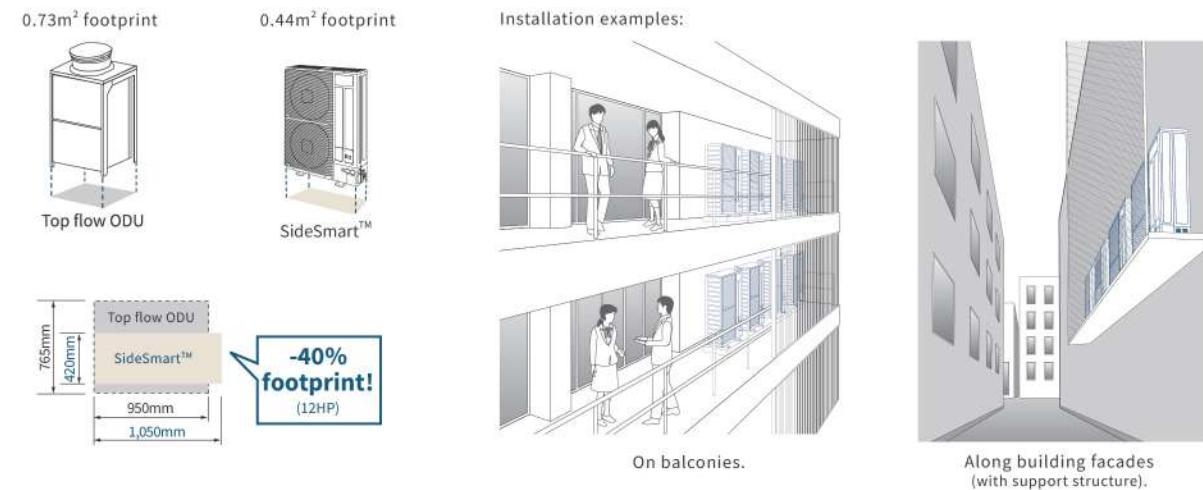
Installation room.



ESP:
60Pa

Note: factory default is 0Pa, 2-step additional static pressure can be selected (30Pa or 60Pa) by the dip switch setting!

SLIM FOOTPRINT



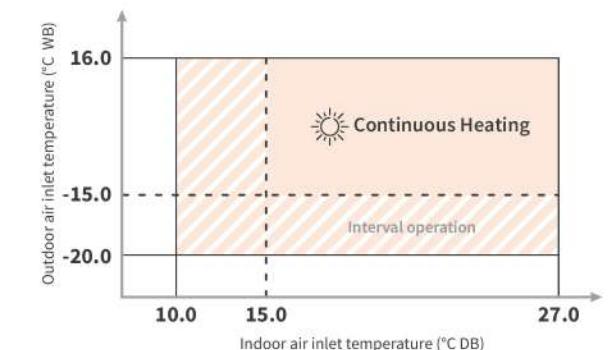
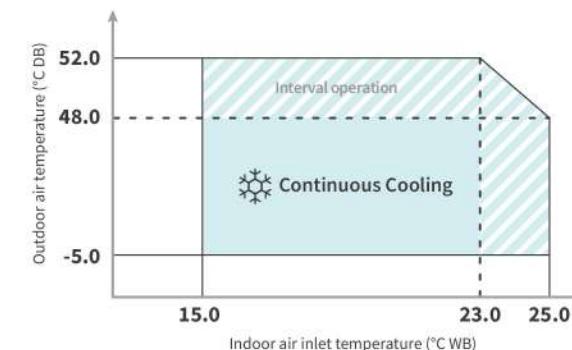
FOR ALL CLIMATES

Cooling operation from up to 52°C ambient temperature.

- Stable running up to 48°C.
- Interval running up to 52°C.

Heating operation from as low as -20°C ambient temperature.

- Stable running from as low as -15°C.
- Interval running from as low as -20°C.



airCloud Select Building solutions.

airCloud Select* is the new software created by Hitachi to help you, with your VRF design project.

Using this helpful tool on a daily basis will help you:

- Enjoy a super intuitive and modern interface.
- Select the suitable VRF equipment for each project.
- Generate automatic report for your customers.

airCloud Select is available upon request. Availability varies per country.
For more information, please contact your Hitachi Cooling & Heating representative.

Note: for PC/laptop usage.

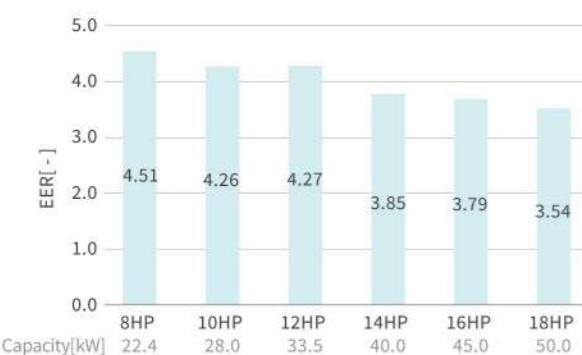


Features & benefits

Small size, yet maximal efficiency.

SIDESMART™ OFFERS SUPERIOR EFFICIENCY

Cooling EER up to 4.51



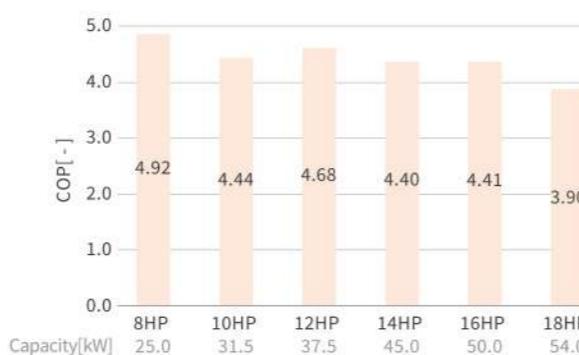
Notes:

1. EER and COP does not include Indoor unit power consumption.

2. This performance is achieved by 4 way cassette combination. For more details about IDU specifications, please refer to the Technical Catalog.

3. Above ratio is on single cabinet (standard combination & economy combination).

Heating COP up to 4.92



Features & benefits

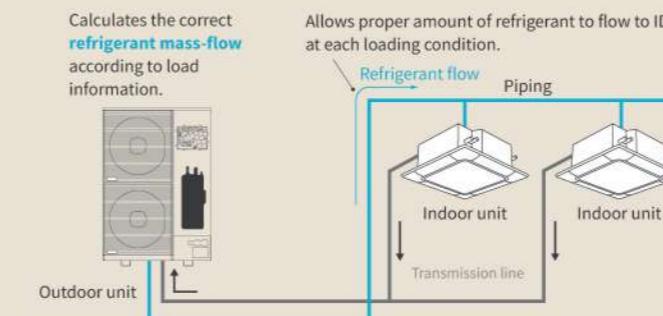
Improved operation.

SMOOTHDRIVE™: SUPERIOR COMPRESSOR CONTROL

You can realize that we want to bring true value to your customers. Meeting high energy efficiency standards is one thing, but on top of that, SmoothDrive™ supports energy savings in real-life conditions, since real life changes constantly.

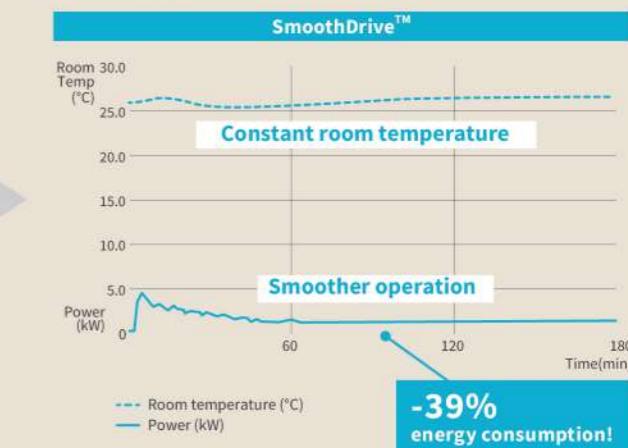
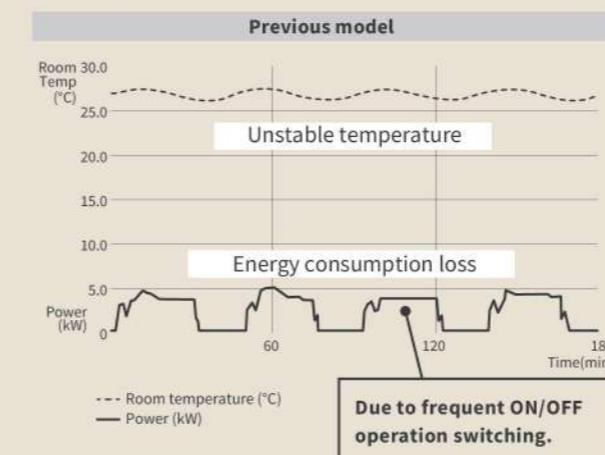
How does SmoothDrive™ work?

Brushing up existing variable evaporating/condensing temperature control, SmoothDrive™ directly regulates refrigerant amount mass-flow, thanks to Hitachi's original load-speculation technology.

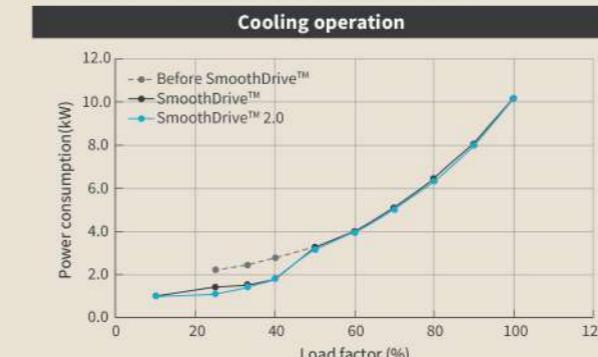


- SmoothDrive™ helps the scroll compressor to run continuously and smoothly even at part-load condition.
- Our original load-speculation technology helps reduce energy loss caused by scroll compressor switching on/off.
- Consequently, constant room temperature & energy savings can be achieved.

Actual new compressor control example (at 33% part load in cooling operation).



Simulation result for all load conditions.



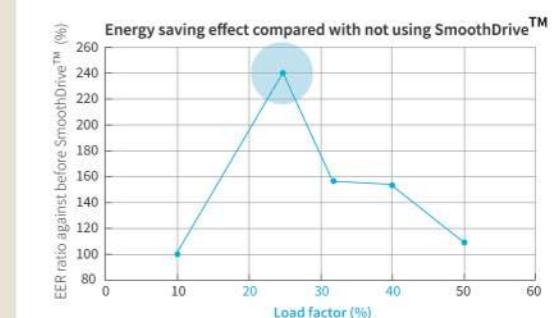
- Difference in power consumption versus load factor.
- Power consumption is reduced when the load factor is 40% or less (note: 40% break point could be changed for different indoor space/thermal inertia).
- The effect of SmoothDrive™ 2.0 Control is only seen at load levels greater than 10% of loading factor.

Note: all the graphs above are sourced from Hitachi top flow VRF. Same technology SmoothDrive™ is equipped with SideSmart™.

NEW SmoothDrive™ 2.0 control.

Simulation result for efficiency improvement.

- Most improved EER is at the loading factor around 25%.



Specifications

SINGLE CABINET

HP	8HP	10HP	12HP	14HP	16HP	18HP
Model Name	RAS-080HNCEL(/R)W	RAS-100HNCEL(/R)W	RAS-120HNCEL(/R)W	RAS-140HNCEL(/R)W	RAS-160HNCEL(/R)W	RAS-180HNCEL(/R)W
Modules for Series	Unit-1	-	-	-	-	-
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)				
Capacity	Cooling kW	22.4	28.0	33.5	40.0	45.0
	Heating kW	25.0	31.5	37.5	45.0	50.0
Power Input	Cooling kW	4.97	6.58	7.84	10.40	11.88
	Heating kW	5.08	7.10	8.02	10.23	11.35
Efficiency	EER kW/kW	4.51	4.26	4.27	3.85	3.79
	COP kW/kW	4.92	4.44	4.68	4.40	4.41
Air Flow Rate	Standard m³/min	160	185	200	250	258
Max. Current	380V/3Ph/60Hz A	18	21	27	32	36
	220V/3Ph/60Hz A	31	39	49	53	60
Dimensions	HxWxD mm	1,650×1,050×420	1,650×1,050×420	1,650×1,050×420	1,650×1,190×420	1,650×1,190×420
Net Weight	380V/3Ph/60Hz kg	185	197	203	219	225
	220V/3Ph/60Hz kg	188	200	205	223	231
Outdoor Unit Color	Natural Gray (1.0Y 85/0.5)	Natural Gray (1.0Y 85/0.5)	Natural Gray (1.0Y 85/0.5)	Natural Gray (1.0Y 85/0.5)	Natural Gray (1.0Y 85/0.5)	Natural Gray (1.0Y 85/0.5)
Footprint Area	m²	0.44	0.44	0.44	0.50	0.50
Compressor type	—	Scroll	Scroll	Scroll	Scroll	Scroll
Refrigerant	Type	R410A	R410A	R410A	R410A	R410A
	Initial Charge Amount kg	6.0	7.7	7.7	8.3	9.6
Number of Fan Motors	—	2	2	2	2	2
External Static Pressure of Fan	Pa	0/30/60	0/30/60	0/30/60	0/30/60	0/30/60
Capacity Ratio of IDU/ODU	—	50% - 130%	50% - 130%	50% - 130%	50% - 130%	50% - 130%
Noise Level	SPL, GB, Anechoic, Cooling dB(A)	55	59	60	60	62
	SPL, GB, Anechoic, Heating dB(A)	56	60	62	61	64
Main Piping	Liquid (φ)mm	9.52	9.52	12.70	12.70	12.70
Size	Gas (φ)mm	19.05	22.20	25.40	25.40	28.58
Connectable	Recommended IDU Number	—	8	10	10	16
	Maximum	—	13	16	19	23
Working Temp.	Cooling Range (*7)	°C DB (-5 ~ 48 (/52))	°C WB (-20/-15~16)	°C DB (-5 ~ 48 (/52))	°C WB (-20/-15~16)	°C DB (-5 ~ 48 (/52))
	Heating Range (*7)	°C WB (-20/-15~16)	°C WB (-20/-15~16)	°C WB (-20/-15~16)	°C WB (-20/-15~16)	°C WB (-20/-15~16)
Total	m	500 (300)	500 (300)	500 (300)	500 (300)	500 (300)
From Piping connection kit to Furthest IDU	m	120/150 (Actual/Equivalent)	120/150 (Actual/Equivalent)	120/150 (Actual/Equivalent)	120/150 (Actual/Equivalent)	120/150 (Actual/Equivalent)
Maximum Piping Length (*)	m	10	10	10	10	10
Between Piping Connection Kit and Each ODU	m	90 (40)	90 (40)	90 (40)	90 (40)	90 (40)
Between 1st branch and the furthest IDU	m	40 (30)	40 (30)	40 (30)	40 (30)	40 (30)
Between each branch and each IDU	m	0.1	0.1	0.1	0.1	0.1
Between ODUs	m	50	50	50	50	50
Between ODU and IDU (ODU above IDU)	m	40	40	40	40	40
Between IDUs (IDU above ODU)	m	30	30	30	30	30

AC3Φ/380V/60Hz/4 wire R: AC3Φ/220V/60Hz/3 wire

Notes:
1. The cooling and heating performance are the values when combined with our specificities indoor units.

1-1. Cooling operation conditions:

Indoor air inlet temperature: 27.0°C DB (80°F DB) / 19.0°C WB (66°F WB).

Outdoor air inlet temperature: 35.0°C DB (95°F DB).

1-2. Heating operation conditions:

Indoor air inlet temperature: 20.0°C DB (68°F DB).

Outdoor air inlet temperature: 7.0°C DB (45°F DB) / 6.0°C WB (43°F WB).

1-3. Piping length: 8-18HP is 7.5 meter / Piping lift: 0 meter.

2. The sound pressure is based on the following conditions.

The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

3. Sound pressure level data was measured at rated cooling and heating condition which same as performance measurement condition. If working condition is different against rated condition, sound may increase.

4. If set to the high static mode, since the fan rotation speed will be increased, sound may increase 5 to 7 dB.

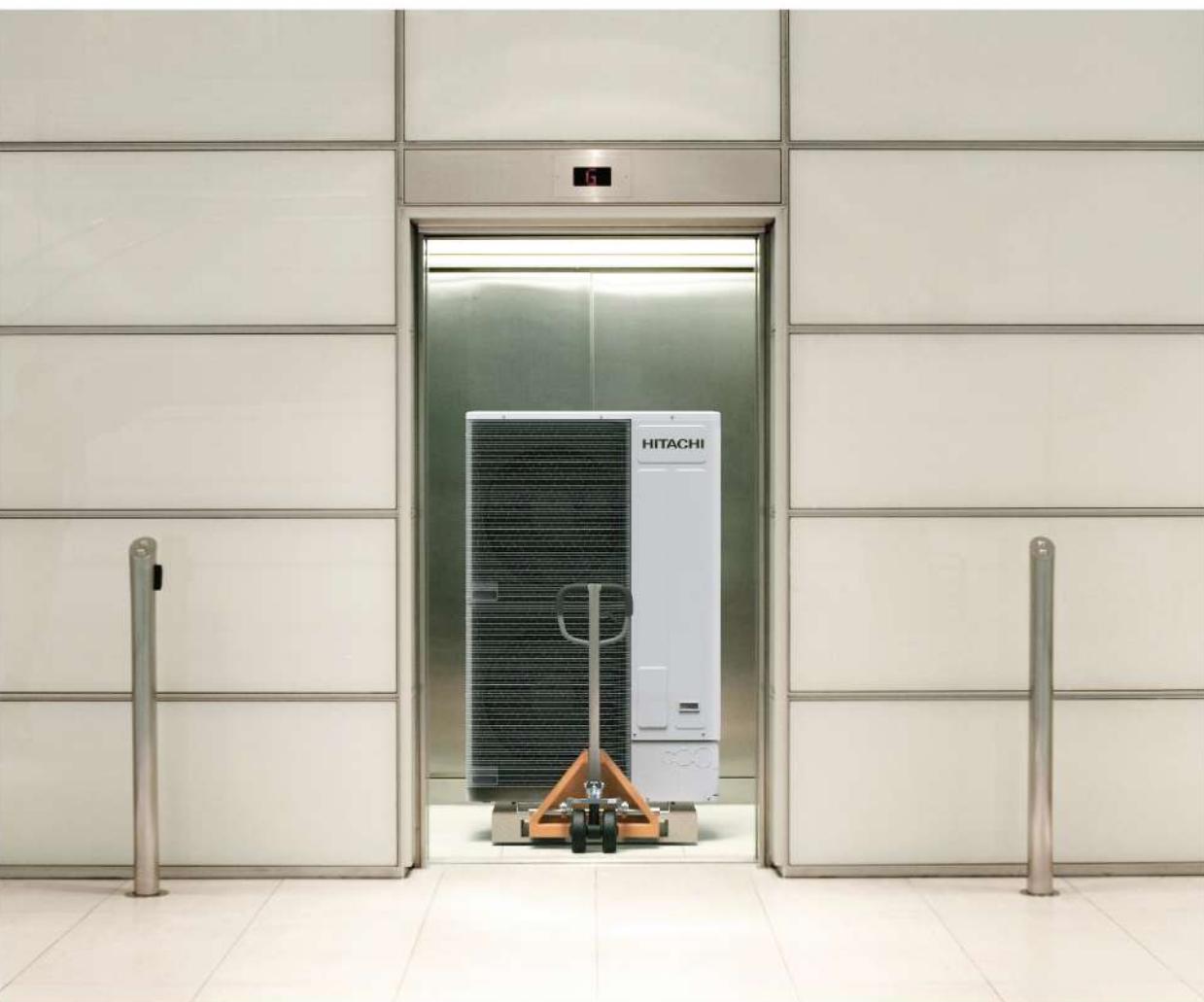
5. Regarding performance values, EER and COP is not including Indoor unit power consumption.

6. For width of outer dimension, it shows 'module+module' unit dimension only, but actually the distance between each modules should be at least 100mm for installation, please check Technical Manual for details.

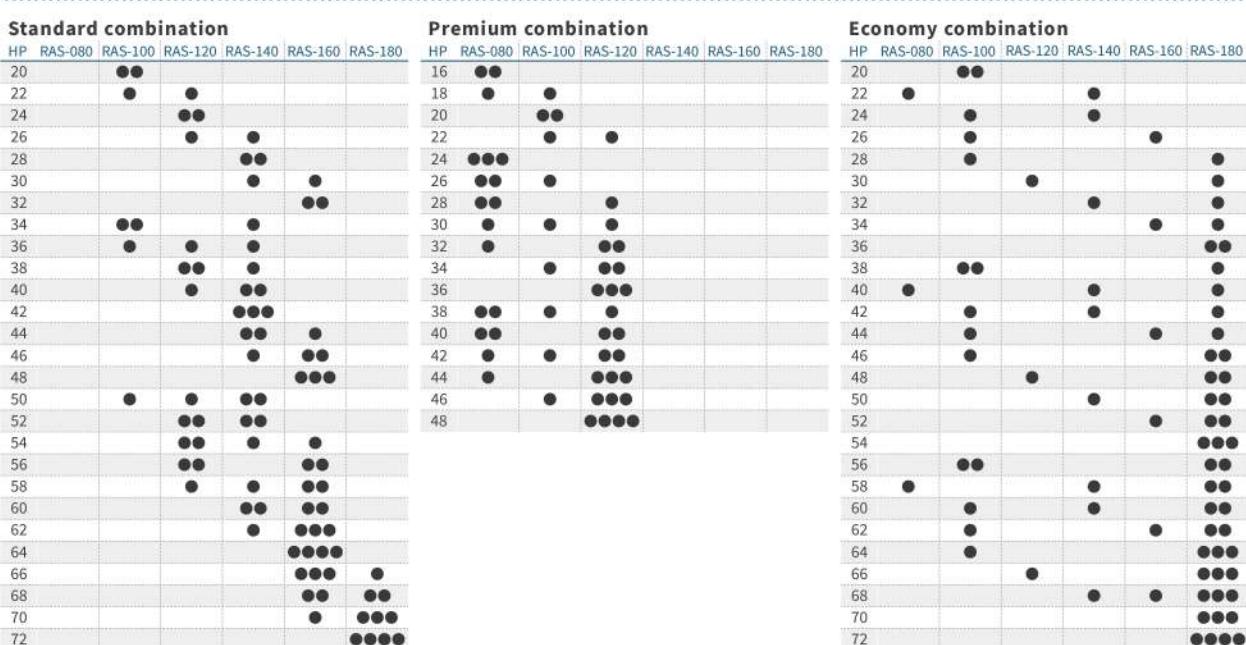
(*7) The (XX) limit temperature applies to interval air conditioning operation.

(*8) In case of connecting number of indoor unit is less than recommended connectable IDU & (when connecting more than recommended number of indoor units).

(*9) In case of connecting number of indoor unit is less than recommended connectable IDU.



From 8HP to 72HP: large choice of combinations



Specifications

STANDARD COMBINATION

HP	20HP	22HP	24HP	26HP	28HP	30HP
Model Name	RAS-200HNCEL(R)WS	RAS-220HNCEL(R)WS	RAS-240HNCEL(R)WS	RAS-260HNCEL(R)WS	RAS-280HNCEL(R)WS	RAS-300HNCEL(R)WS
Modules for Series	Unit-1	RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W
	Unit-2	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W
	Unit-3	-	-	-	-	-
	Unit-4	-	-	-	-	-
Power Supply V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)					
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650
	Depth mm	2,200	2,200	2,340	2,480	2,480
	Width mm	420	420	420	420	420
Capacity	Cooling kW	56.0	61.5	67.0	73.5	80.0
	Heating kW	63.0	69.0	75.0	82.5	90.0
Performance	EER	-	4.26	4.26	4.27	4.03
	COP	-	4.44	4.56	4.68	4.52
Main Pipe Size	Gas mm	28.58	28.58	28.58	31.75	31.75
	Liquid mm	15.88	15.88	15.88	19.05	19.05
Connectable IDU	Recommended Qty	18	20	26	26	32
	Maximum Qty	33	36	40	43	47
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	56HP	58HP	60HP	62HP	64HP	66HP	
Model Name	-	RAS-560HNCEL(R)WS	RAS-580HNCEL(R)WS	RAS-600HNCEL(R)WS	RAS-620HNCEL(R)WS	RAS-640HNCEL(R)WS	RAS-660HNCEL(R)WS
Modules for Series	Unit-1	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-2	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W
	Unit-3	RAS-120HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W
	Unit-4	RAS-120HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W
Power Supply V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)						
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650	1,650
	Depth mm	4,780	4,920	5,060	5,060	5,060	5,060
	Width mm	420	420	420	420	420	420
Capacity	Cooling kW	157.0	163.5	170.0	175.0	180.0	185.0
	Heating kW	175.0	182.5	190.0	195.0	200.0	204.0
Performance	EER	-	3.98	3.89	3.82	3.80	3.79
	COP	-	4.52	4.46	4.40	4.41	4.26
Main Pipe Size	Gas mm	44.45	44.45	44.45	44.45	44.45	44.45
	Liquid mm	19.05	19.05	19.05	19.05	19.05	19.05
Connectable IDU	Recommended Qty	38	38	38	38	38	38
	Maximum Qty	64	64	64	64	64	64
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	32HP	34HP	36HP	38HP	40HP	42HP
Model Name	RAS-320HNCEL(R)WS	RAS-340HNCEL(R)WS	RAS-360HNCEL(R)WS	RAS-380HNCEL(R)WS	RAS-400HNCEL(R)WS	RAS-420HNCEL(R)WS
Modules for Series	Unit-1	RAS-160HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W
	Unit-2	RAS-160HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W
	Unit-3	-	RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W
	Unit-4	-	-	-	-	-
Power Supply V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)					
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650
	Depth mm	2,480	3,490	3,490	3,630	3,770
	Width mm	420	420	420	420	420
Capacity	Cooling kW	90.0	96.0	101.5	107.0	113.5
	Heating kW	100.0	108.0	114.0	120.0	127.5
Performance	EER	-	3.79	4.07	4.09	4.10
	COP	-	4.41	4.42	4.50	4.57
Main Pipe Size	Gas mm	31.75	31.75	38.10	38.10	38.10
	Liquid mm	19.05	19.05	19.05	19.05	19.05
Connectable IDU	Recommended Qty	32	32	32	38	38
	Maximum Qty	53	56	59	64	64
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	68HP		70HP	72HP
Model Name	-	RAS-680HNCEL(R)WS	RAS-700HNCEL(R)WS	RAS-720HNCEL(R)WS
Modules for Series	Unit-1	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-2	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-3	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-4	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W
Power Supply V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)			
Dimensions	Height mm	1,650	1,650	1,650
	Depth mm	5,060	5,060	5,060
	Width mm	420	420	420
Capacity	Cooling kW	190.0	195.0	200.0
	Heating kW	208.0	212.0	216.0
Performance	EER	-	3.65	3.59
	COP	-	4.13	4.01
Main Pipe Size	Gas mm	44.45	44.45	44.45
	Liquid mm	22.20	22.20	22.20
Connectable IDU	Recommended Qty	38	38	38
	Maximum Qty	64	64	64
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130

HP	44HP	46HP	48HP	50HP	52HP	54HP
Model Name	-	RAS-460HNCEL(R)WS	RAS-480HNCEL(R)WS	RAS-500HNCEL(R)WS	RAS-520HNCEL(R)WS	RAS-540HNCEL(R)WS
Modules for Series	Unit-1	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W
	Unit-2	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-160HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W
	Unit-3	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)



PREMIUM COMBINATION

HP	16HP	18HP	20HP	22HP	24HP	26HP	
Model Name	RAS-160HNCEL(R)WP	RAS-180HNCEL(R)WP	RAS-180HNCEL(R)WP	RAS-220HNCEL(R)WS	RAS-240HNCEL(R)WP	RAS-260HNCEL(R)WP	
Modules for Series	Unit-1	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-080HNCEL(R)W	
	Unit-2	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	
	Unit-3	-	-	-	-	RAS-080HNCEL(R)W	
	Unit-4	-	-	-	-	RAS-080HNCEL(R)W	
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)					
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650	1,650
Width	Depth mm	2,200	2,200	2,200	2,200	3,350	3,350
Cooling	Heating kW	44.8	50.4	55.9	61.5	67.2	72.8
Performance	EER	-	4.51	4.36	4.36	4.26	4.51
	COP	-	4.92	4.64	4.77	4.56	4.92
Main Pipe Size	Gas mm	28.58	28.58	28.58	28.58	28.58	31.75
Connectable IDU	Recommended Qty	16.0	16.0	18.0	20.0	26.0	26.0
Maximum Qty	26.0	26.0	33.0	36.0	40.0	43.0	
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	28HP	30HP	32HP	34HP	36HP	38HP	
Model Name	RAS-280HNCEL(R)WP	RAS-300HNCEL(R)WP	RAS-320HNCEL(R)WP	RAS-340HNCEL(R)WP	RAS-360HNCEL(R)WP	RAS-380HNCEL(R)WP	
Modules for Series	Unit-1	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	
	Unit-2	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-100HNCEL(R)W	
	Unit-3	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	
	Unit-4	-	-	-	-	RAS-080HNCEL(R)W	
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)					
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650	1,650
Width	Depth mm	3,350	3,350	3,350	3,350	3,350	4,500
Cooling	Heating kW	78.3	83.9	89.4	95.0	100.5	106.3
Performance	EER	-	4.40	4.33	4.33	4.27	4.27
	COP	-	4.81	4.65	4.74	4.60	4.68
Main Pipe Size	Gas mm	31.75	31.75	31.75	31.75	31.75	38.10
Connectable IDU	Recommended Qty	32.0	32.0	32.0	32	32	38
Maximum Qty	47.0	50.0	53.0	56	59	64	
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	40HP	42HP	44HP	46HP	48HP		
Model Name	- RAS-400HNCEL(R)WP	RAS-420HNCEL(R)WP	RAS-440HNCEL(R)WP	RAS-460HNCEL(R)WP	RAS-480HNCEL(R)WP		
Modules for Series	Unit-1	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W		
	Unit-2	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W		
	Unit-3	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-120HNCEL(R)W		
	Unit-4	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W		
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)					
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650	
Width	Depth mm	4,500	4,500	4,500	4,500	4,500	
Cooling	Heating kW	111.8	117.4	122.9	128.5	134.0	
Performance	EER	-	4.36	4.31	4.31	4.27	4.27
	COP	-	4.77	4.66	4.72	4.62	4.68
Main Pipe Size	Gas mm	38.10	38.10	38.10	38.10	38.10	
Connectable IDU	Recommended Qty	38	38	38	38	38	
Maximum Qty	64	64	64	64	64	64	
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130	

Note: please refer to the same notes in standard/economic combination

Specifications

ECONOMY COMBINATION

HP	20HP	22HP	24HP	26HP	28HP	30HP
Model Name	RAS-200HNCEL(R)WS	RAS-220HNCEL(R)WE	RAS-240HNCEL(R)WE	RAS-260HNCEL(R)WE	RAS-280HNCEL(R)WE	RAS-300HNCEL(R)WE
Modules for Series	Unit-1 RAS-100HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-2 RAS-100HNCEL(R)W	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W
	Unit-3 -	-	-	-	-	-
	Unit-4 -	-	-	-	-	-
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)				
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650
	Depth mm	2,200	2,340	2,340	2,340	2,340
	Width mm	420	420	420	420	420
Capacity	Cooling kW	56.0	62.4	68.0	73.0	83.5
	Heating kW	63.0	70.0	76.5	81.5	91.5
Performance	EER -	4.26	4.06	4.00	3.95	3.76
	COP -	4.44	4.57	4.41	4.42	4.08
Main Pipe Size	Gas mm	28.58	28.58	28.58	31.75	31.75
	Liquid mm	15.88	15.88	15.88	19.05	19.05
Connectable IDU	Recommended Qty	18	20	26	26	32
	Maximum Qty	33	36	40	43	50
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	56HP	58HP	60HP	62HP	64HP	66HP
Model Name	RAS-560HNCEL(R)WE	RAS-580HNCEL(R)WE	RAS-600HNCEL(R)WE	RAS-620HNCEL(R)WE	RAS-640HNCEL(R)WE	RAS-660HNCEL(R)WE
Modules for Series	Unit-1 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-2 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-3 RAS-100HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-4 RAS-100HNCEL(R)W	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)				
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650
	Depth mm	4,780	4,920	4,920	4,920	4,920
	Width mm	420	420	420	420	420
Capacity	Cooling kW	156.0	162.4	168.0	173.0	178.0
	Heating kW	171.0	178.0	184.5	189.5	193.5
Performance	EER -	3.76	3.72	3.71	3.70	3.63
	COP -	4.08	4.14	4.10	4.10	4.02
Main Pipe Size	Gas mm	44.45	44.45	44.45	44.45	44.45
	Liquid mm	19.05	19.05	19.05	19.05	19.05
Connectable IDU	Recommended Qty	38	38	38	38	38
	Maximum Qty	64	64	64	64	64
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	32HP	34HP	36HP	38HP	40HP	42HP
Model Name	RAS-320HNCEL(R)WE	RAS-340HNCEL(R)WE	RAS-360HNCEL(R)WE	RAS-380HNCEL(R)WE	RAS-400HNCEL(R)WE	RAS-420HNCEL(R)WE
Modules for Series	Unit-1 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-2 RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W	RAS-100HNCEL(R)W	RAS-140HNCEL(R)W	RAS-140HNCEL(R)W
	Unit-3 -	-	-	RAS-100HNCEL(R)W	RAS-080HNCEL(R)W	RAS-100HNCEL(R)W
	Unit-4 -	-	-	-	-	-
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)				
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650
	Depth mm	2,480	2,480	3,490	3,630	3,630
	Width mm	420	420	420	420	420
Capacity	Cooling kW	90.0	95.0	100.0	106.0	112.4
	Heating kW	99.0	104.0	108.0	117.0	124.0
Performance	EER -	3.67	3.65	3.54	3.88	3.81
	COP -	4.11	4.13	3.90	4.17	4.25
Main Pipe Size	Gas mm	31.75	31.75	38.10	38.1	38.10
	Liquid mm	19.05	19.05	19.05	19.05	19.05
Connectable IDU	Recommended Qty	32	32	32	38	38
	Maximum Qty	53	56	59	64	64
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130	50 - 130	50 - 130

HP	68HP	70HP	72HP	
Model Name	RAS-680HNCEL(R)WE	RAS-700HNCEL(R)WS	RAS-720HNCEL(R)WS	
Modules for Series	Unit-1 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	
	Unit-2 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	
	Unit-3 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	
	Unit-4 RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W	
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)		
Dimensions	Height mm	1,650	1,650	1,650
	Depth mm	5,060	5,060	5,060
	Width mm	420	420	420
Capacity	Cooling kW	190.0	195.0	200.0
	Heating kW	207.0	212.0	216.0
Performance	EER -	3.60	3.59	3.54
	COP -	4.00	4.01	3.90
Main Pipe Size	Gas mm	44.45	44.45	44.45
	Liquid mm	22.20	22.20	22.20
Connectable IDU	Recommended Qty	38	38	38
	Maximum Qty	64	64	64
Connectable IDU Ratio	%	50 - 130	50 - 130	50 - 130

HP	44HP	46HP	48HP	50HP	52HP	54HP
Model Name	- RAS-440HNCEL(R)WE	RAS-460HNCEL(R)WE	RAS-480HNCEL(R)WE	RAS-500HNCEL(R)WE	RAS-520HNCEL(R)WE	RAS-540HNCEL(R)WE
Modules for Series	Unit-1 RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-2 RAS-160HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-3 RAS-100HNCEL(R)W	RAS-100HNCEL(R)W	RAS-120HNCEL(R)W	RAS-140HNCEL(R)W	RAS-160HNCEL(R)W	RAS-180HNCEL(R)W
	Unit-4 -	-	-	-	-	-
Power Supply	V/Ph/Hz	380V/3Ph/60Hz (R: 220V/3Ph/60Hz)				
Dimensions	Height mm	1,650	1,650	1,650	1,650	1,650
	Depth mm	3,630	3,630	3,630	3,	

Centralized controllers

Control each indoor unit, one specific zone or even multiple systems from one place!

airCLOUD PRO* (HC-IoTGW)

- Remote access via smartphone app or web.
- Unlimited number of systems, zones and users.
- Intuitive scheduling function.
- Troubleshooting with access to error history and alerts.
- Filter sign display to quickly overview daily maintenance needs.
- Ideal for all types of applications.

CENTRAL STATION EX (PSC-A128EX1)

- Control capacity: max 2,560 indoor units (+15x Extension Adapter PSC-AD128EX1).
- With energy calculation software (PSC-AS01EXC), determine each tenant's energy usage.
- Easy monitoring with simplified interface.
- Best option for middle-large size buildings.
- Remote access! Operate Central Station EX from your laptop PC or touch-panel PC.

CENTRAL STATION EZ (PSC-A64GT)

- Control capacity: max 64 remote control group of indoor units.
- Compact and optimized 170x250mm body screens fitting in even small walls.
- Easy monitoring with simplified interface.
- Best option for middle size buildings.

CENTRAL STATION MINI (PSC-A32MN)

- Control capacity: max 32 remote control group of indoor units.
- Compact and optimized 120x140mm body screens fitting in even small walls.
- Easy monitoring with simplified interface.
- Best option for small size buildings.

SMALL TO LARGE SYSTEMS & FIXED OR CLOUD-BASED



Capacity comparison	RC group	64 (*6)	32	64	2,560 (*1)
	Group	64 (*6)	32	64	2,048 (*1)
	Block	Unlimited (*7)	2/4/8/16	4	512 (*2)
	Area	Unlimited (*7)	-	-	512 (*2)
	Indoor unit	80 (*6)	160	160	2,560 (*1)
Building scale	Outdoor unit	16 (*6)	64	64	1,024 (*1)
	Small to Large		Small	Medium	Large
	Operation	Web + Mobile Phone	Touch screen	Touch screen	Touch screen + Web (New!)
Display	Operation panel size options	Adaptive	3	2	7
	Layout	-	-	-	
	List options	-	-	-	3
Operation unit	All together				
	By layout	-	-	-	
	By area				
	By block				
	By group				
Control Function	By RC group				
	By indoor unit				
	Main 5 functions (*5)				
	Individual controller lock				△ (*3)
	Filter sign reset				
Monitor Function	Outdoor unit capacity control	-	△ (*4)	-	
	Outdoor unit noise control	-	-	-	
	Main 5 functions (*5)				
	Individual controller lock				
	Alarm status & code				
Schedule Function	Filter sign				
	Air inlet temperature of indoor unit	-			
	Air inlet temperature of outdoor unit	-			
	Weekly				
	Setting times per day	16	10	10	16
Other function	Special day setting	5	-	-	5
	Holiday setting	-	-	-	
	Annual/Summer/Winter schedule	Future Version	-	-	
	Alarm history (records number)	Unlimited	100	100	10,000
	External in/output history	-	-	-	1,000
IoT Functions	Management report visualization(*11)	Energy Estimation (*8) - Future			
	Data output by external media	Download from Web - Future	-	-	SD card, USB flash device
	Connectivity	Ethernet + 4G (*9)	-	-	-
	Future Extendability	Firmware OTA (*10) Web + Mobile Update	-	-	-

* airCloud Pro available with SideSmart™ from May 2021.

(*1) One Extension Adapter (PSC-AD128EX1) enable CENTRAL STATION EX to control additional 160 RC groups /128 groups / 160 IDUs / 64 ODUs, and up to 15 adapters can connect to one Central Station EX.

(*2) No restriction on the number of H-LINK.

(*3) Individual Feature Control in Each Remote Controller is not available.

(*4) Applicable only with Schedule function or external signal input. You cannot set it up directly from monitoring panel.

(*5) Main 5 functions meaning: 1) Run/Stop 2) Operation mode 3) Temperature setting 4) Fan speed 5) Louver control.

(*6) Ability to connect unlimited number of "HC-IoTGW" in one project and control all AC units via one single screen on Web or Mobile Phone.

(*7) Unrestricted creation of zones, across multiple "HC-IoTGW" units within the same project.

(*8) Visualization of outdoor unit energy consumption.

(*9) 4G available through optional 4G module; 4G module package comes with global SIM and pre-paid global data plan.

(*10) OTA: Over-the-air firmware update, provides always up-to-date firmware and latest functionalities.

(*11) Mini, EZ : Accumulated operation time (min), Accumulated thermo - ON time (min), Average air intake temperature of indoor unit , Average air intake temperature of outdoor unit , Average setting temperature , Average RC sensor temperature.



Individual controllers

NEW

ADVANCED COLOR WIRED REMOTE CONTROLLER (PC-ARFG1)

Simplicity with style

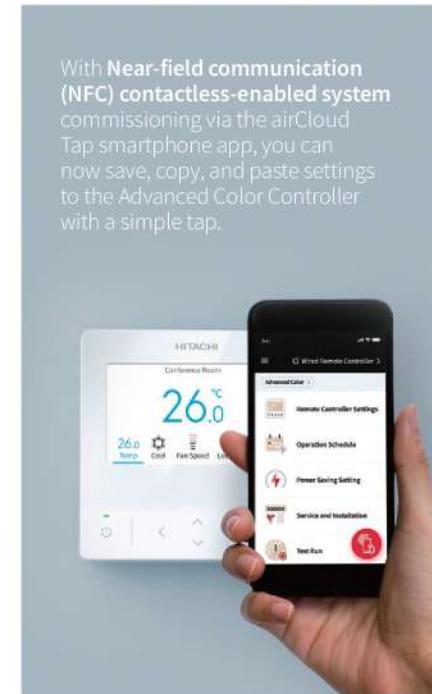
Combining the best of form and function, enjoy climate control made easy with Hitachi's most advanced wall controller yet.



- Super user-friendly interface
- Easy-to-navigate menus
- Available in 7 languages
- Pictograms and colors for an optimal user experience

Award-winning design

- Minimalist design aesthetic
- Distinctive curves for ergonomics
- Modern and subtle colors



With **Near-field communication (NFC)** contactless-enabled system commissioning via the airCloud Tap smartphone app, you can now save, copy, and paste settings to the Advanced Color Controller with a simple tap.



- 1 Room name
- 2 Set temperature
- 3 Operation mode
- 4 Indoor unit ON/OFF light
- 5 Indoor unit ON/OFF
- 6 Navigation buttons
- 7 Back button
- 8 OK button
- 9 Fan speed
- 10 Louver direction
- 11 Access to menu
- 12 Filter cleaning reminder

Outer dimensions (H×W×D)

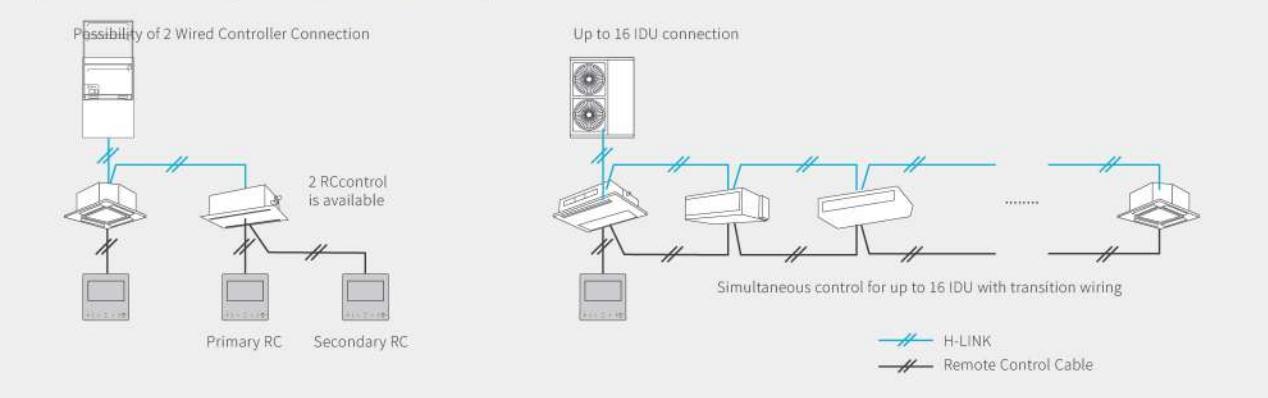
120×120×16.5mm (thinnest part)
120×120×21.5mm (thickest part)

Capacity

Power Supply	Powered by indoor unit, 15VDC±10%
	180g (approx.)
Installation	Indoor, on the wall or switch box
Connection capacity	Up to 16 indoor units (with the same wired remote controller)
▲ Display	When two wired Advanced Controller units are connected to the same indoor unit, the maximum brightness of each controller will be halved

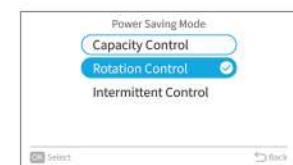
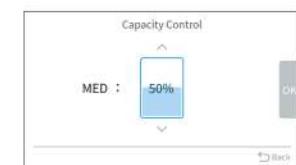
* H is the height of the unit from the front, without the protrusion at the bottom.

System configuration example



Energy optimization

Power-saving features enable VRF system operators to optimize energy usage



Set specific schedules for features like peak capacity cuts and the thermal operation rotation of indoor units, enabling you to match energy-saving operation hours with your utility tariffs plan. Building managers can also set the minimum and maximum temperature range for occupants and visualize energy consumption with daily, weekly or monthly comparison options.

From basic to advanced functions

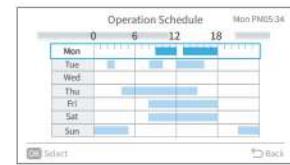
Users can control the main temperature settings from Advanced-Color controller's main screen. In addition, more advanced comfort settings help customizing the air to their occupants' specific needs.



GentleCool limits the temperature of conditioned air, preventing cold drafts for optimal comfort.



AutoBoost automatically activates for 30 minutes every time the AC is turned on, helping the room reach the desired temperature faster.



AC Scheduling is easier than ever, thanks to flexible features such as the holiday calendar.

The latest VRF features



NEW Fan speed at thermo-off reduces air circulation when cooling or heating is not effective.
NEW Activate, schedule and check the history of indoor units' FrostWash™ function.



Individual 4-way cassette louvers optimizes air flow direction to each corner layout.



Schedule Night Quiet mode to minimize the outdoor unit's operation noise so you and your neighbors get a better night's sleep.

Special features for hotels

NEW Hotel mode enables instant access to the functions demanded most by hotel guests. After guests check out, housekeeping can reset the controller in one touch.

Hotel setback allows interlocking with hotel key cards. When the room is vacant, the indoor unit switches to a selected energy-saving setback temperature, ensuring the room remains at a comfortable temperature when unoccupied.



Ideal for indoor units with motion sensor features

NEW Active intelligent comfort features connected to your indoor unit's motion sensor and/or radiant sensor*: choice of direct/indirect air flow, FeetWarm NEW, FloorSense Cool NEW and the exclusive Crowd-Sense NEW to prevent heat peak from rapid crowd arrival.

True
to Your Comfort ♥

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CEBU OFFICE: TEL.: (032) 232-6634 FAX: (032) 231-7533 SERVICE: (032) 232-8831
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