



Providing Personalized Comfort and Control to Every Room, Every Application.



Toshiba Carrier Single-phase Variable Refrigerant Flow (VRF) heat recovery and heat pump systems. Cutting-edge efficiency, premium comfort control.

Perfect for whole home, large residential and light commercial applications, Toshiba Carrier Single-phase VRF heat recovery and heat pump systems deliver proven heating and cooling solutions for discerning residential and commercial consumers. VRF systems provide customized comfort in sophisticated zoning through multiple capacity units featuring Inverter technology. These systems are also flexible due to long piping lengths and various indoor unit styles, allowing for overall architectural design improvements.

Controls Overview

There are several options for controlling comfort, ranging from a wired remote controller to Wi-Fi[®] enabled thermostats that can be accessed from virtually anywhere using a smart device.



Wi-Fi[®] Thermostats

- · Full-color touchscreen
- · Built-in humidity sensor
- 7-day scheduling
- Remote access via Internet and iOS or Android[™] apps for smartphone or tablet devices
- · Wi-Fi enabled
- 24V interface required for connection to indoor units

24V Interface (TCB-IFTH1GUL) per thermostat

- Connects third-party conventional thermostat to Toshiba Carrier VRF indoor fan coil units
- Allows standard 24V thermostat connection
- · Integrates with thermostat features including Wi-Fi, one per indoor unit



Wired Remote Controller

- Simple, easy to use
- Backlit
- · Fan speed
- · Clock setting
- · Schedule timer
- Dual set-point
- 1° F temperature indication
- · Set temperature range limiting
- · Service check mode
- · Compatible with Toshiba Carrier RAV and VRF System
- Optional remote-sensing capabilities

RBC-AMS54E-UL

Applications

With Single-phase Variable Refrigerant Flow (VRF) heat recovery and heat pump systems, your options are endless. No matter what the application is, we have the solution – from high-end residential to brownstone to bank to retail space.



Retrofit and Brownstones



Light Commercial

Why Single-phase VRF?

Because these units feature compact footprints, lower profiles, quieter operation and higher efficiencies. They can also be easily utilized in residential, light commercial and commercial applications and often offer flexible zoning options while providing better comfort. Single-phase power is available in all residential and light commercial buildings, eliminating the need for costly phase conversion.

Benefits of Single-phase VRF

- Provides simultaneous heating and cooling technology via heat recovery
- · Allows for added flexibility in installation and use of space
- Offers precise temperature control
- · Operates quietly and efficiently
- Allows for improvements to overall architectural design capabilities, such as raising the ceiling height or vault ceiling by eliminating duct in key areas, eliminating duct chases and adding additional usable square footage
- Provides personalized comfort control
- Seamlessly integrates with Toshiba three-phase VRF systems
- Connects the outdoor unit to the indoor unit via single- or multiport Flow Selector (FS) box options based on the application
- Offers vastly longer piping lengths for flexibility in outdoor unit placement to fit customer needs
- Connects with third-party thermostat to control the system anywhere, anytime
- Meets the needs of any space with 10 multiple-indoorunit styles (ducted and ductless) to choose from
- Provides the ability to add more indoor units to fit any application, as needed, once the initial indoor unit is installed

Why Single-phase VRF heat recovery?

Because it allows users to choose heating and cooling simultaneously while being connected to a single outdoor unit, giving them complete control over their space.

• Couples full control over your space with enhanced energy savings by recovering waste heat from one zone and reusing it in another

Why Single-phase VRF heat pump?

Because it delivers the efficiency, flexibility and control of a VRF in a smaller-capacity package and a lower power requirement with superior heating performance at lower ambient temperatures. The condenser fan motor can rapidly match up with the changing compressor capacity at operating condition, enhancing part-load efficiency. This high-end equipment allows for multi-zone application within a compact footprint.

Outdoor Unit Overview

Outdoor options provide individual zoned comfort.



Comfort

- Industry's first Single-phase VRF outdoor unit with heat recovery
- System provides zoned comfort with capability to heat and cool up to 25 individual zones simultaneously
- Cooling ambient operating temperature is 14° F to 122° F, and heating ambient operating temperature is -13° F to 60° F

Flexibility

- Based on the application, single- or multi-port Flow Selector (FS) box options connect the outdoor unit to the indoor unit
- Piping length of up to 3,280 ft. offers greater flexibility with outdoor unit location and piping layout

Heat Pump

SEER up to 22.7

• HSPF up to 11.5

Comfort

- System provides zoned comfort with capability to heat or cool up to nine individual zones
- Integrated ability to control VRF as second-stage heat makes the Single-phase VRF perfect for integration with radiant floor systems and other sources of heat
- Cooling operating range is 23° F to 122° F and heating operating range is .13° F to 60° F

Flexibility

- 100% heating capacity at 5° F for 3- and 4-ton units and 80% heating capacity for 5-ton unit
- Ability to connect up to nine zones (ducted and/or ductless indoor units)
- Piping length up to 591 ft. offers greater flexibility with outdoor unit location and piping layout

Single-phase VRF Heat Recovery Outdoor Units (MMYF-IP) – 208/230V-1-60

Appearance		
Nominal Tons	6	12
Model name (MMY-)	MAP0726FT2P-UL	AP1446FT2P-UL

Technical Specifications

Standard model (Combination)

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Outdoor unit set model name MMY-					AP1446FT2P-UL
Outdoor unit model name				MAP0726FT2P-UL	0726FT2P-UL
					0726FT2P-UL
Nominal tons	Nominal tons Ton				12
Cooling capacity (*1)		Nominal kBtu/h		72	144
(with non-ducted indoor units/duct	ed)	Rated	kBtu/h	69	138
Heating capacity (*1)		Nominal	kBtu/h	81	162
(with non-ducted indoor units/duct	ed)	Rated kBtu/h		77	154
With Non-Ducted	Power supply (*2			208/230V, 1-phase 60Hz	
Indoor Units	Qualiza	Power consumption	kW	4.29	9.65
Electrical	Cooling	IEER (Integrated Energy Efficiency Ratio)	Btu/W	28.4	26.4
characteristics	Lippting	Power consumption	kW	5.31	11.69
(Nominal) ('1)	Heating	SCHE (Simultaneous Cooling & Heating Efficiency)	Btu/W	36.6	31.3
With Ducted	Power supply (*2			208/230)V, 1-phase 60Hz
	Cooling	Power consumption	kW	4.89	9.81
Electrical	Cooling	IEER (Integrated Energy Efficiency Ratio)	Btu/W	20.6	22.6
characteristics	Heating	Power consumption	kW	6.10	11.56
(Nominal) (1)		SCHE (Simultaneous Cooling & Heating Efficiency)	Btu/W	27.8	28.0
		Height	in	72.9	72.9
External dimensions		Width	in	39.0	39.0 x 2
		Depth	in	30.7	30.7
Total weight	Unit		lb	600	600 + 600
Compressor	Туре			Hermetic Tw	in Rotary Compressor
Fan unit	Air volume		cfm	6,700	6,700 x 2
	Maximum extern	al static pressure	in WG	0.24	0.24
Refrigerant (*3) (Charged refr	gerant amount)		lb	24.3	24.3 x 2
Electrical	Unit	MCA (*4)	A	47.5	47.5 + 47.5
specifications		Recommended fuse size	A .	50	50 + 50
		Gas side (main pipe) (Brazing)	in	7/8	1-1/8
Refrigerant	Connecting	Liquid side (main pipe) (Flare)	in	1/2	5/8
piping	port diameter	Discharge (main pipe) (Flare)	in	3/4	//8
		Balance pipe (Flare)	IN ° E DD	3/8	3/8
Operation temperature range		Looting	° F UB		14 LU 122
Maximum number of connect	ad indoor units	пеашу	L MR	10	-13 10 00
Capacity of combined indoor	unite (*5)			12	20 In to 150%
Sound pressure level (Cooling	urins (5) n/Heating)		dB(A)	57/60	60/63
Conna hiessaile ievei (COOIIII	Sound pressure level (Cooling/Heating) dl			51100	00/03

Subject to change.

(*1) Rated conditions

Cooling: Indoor 80° F Dry Bulb/67° F Wet Bulb, Outdoor 95° F Dry Bulb. Heating: Indoor 70° F Dry Bulb, Outdoor 47° F Dry Bulb/43° F Wet Bulb.

The standard pipe	144 type – 228 type	Equivalent piping length: 25 ft, Height difference: 0 ft

 ('2) The source voltage must not fluctuate more than ±10%
('3) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length. (4) Select wire size based on the larger value of MCA MCA: Minimum Circuit Amps (Minimum Circuit Amps required for power supply design)
(5) In case the diversity exceeds 135%, the type of indoor unit is limited and the maximum number of indoor unit is reduced.

Single-phase VRF Heat Pump Outdoor Units (MCY7) – 208/230V-1-60

Appearance	0	0	0	
Nominal Tons	3	4	5	
Model name (MCY-)	MAP0367HS-UL	MAP0487HS-UL	MAP0607HS-UL	

Standard model (Single unit)

	r (onigio uni			Techi	nical Specifi	cations
Outdoor unit model name	e	MCY-		MAP0367HS-UL	MAP0487HS-UL	MAP0607HS-UL
Nominal tons			Ton	3	4	5
Cooling capacity (*1) (with non-ducted indoor units/	ducted)	Nominal	kBtu/h	36	48	60
Heating capacity (*1) (with non-ducted indoor units/	ducted)	Nominal	kBtu/h	40	54	66
	Power supply (*2)			2	208/230V, 1-phase 60Hz	
With Non-Ducted	Cooling	Power consumption	kW	2.29	3.71	5.26
Indoor Units	Cooling	EER (Energy Efficiency Ratio)	Btu/W	15.7	12.95	11.4
Electrical	Heating	Power consumption	kW	2.79	3.95	5.16
characteristics	Heating	COP (Coefficent Of Performance)	Btu/W	4.2	4.01	3.75
(Nominal) (*1)	SEER (Seasonal Ener	gy Efficiency Ratio)		22.7	21	20.5
. , , ,	HSPF (Heating Seaso	nal Performance Ratio)		11.5	11.5	11.5
	Power supply (*2)			2	208/230V, 1-phase 60Hz	
With Ducted	0 "	Power consumption	kW	2.76	4.87	5.76
Indoor Units	Cooling	EER (Energy Efficiency Ratio)	Btu/W	13.05	9.85	10.42
Electrical Hosting	Hanting	Power consumption	kW	3.45	5.27	5.34
characteristics	Heating	COP (Coefficent Of Performance)	Btu/W	3.40	3	3.62
(Nominal) ([*] 1)	SEER (Seasonal Ener	nergy Efficiency Ratio)		17.70	16.6	17.6
	HSPF (Heating Seaso	nal Performance Ratio)		10.50	9.5	11
Esternal		Height	in	61	61	61
dimensions		Width	in	39.8	39.8	39.8
dimensions		Depth	in	14.6	14.6	14.6
Total weight	Unit		lb	311	311	311
Compressor	Туре			Hermetic Twin Rotary		
Comproceer	Motor output		kW	3.75	3.75	3.75
Fan unit	Motor output		W	100+100	100+100	100+100
	Air volume		cfm	4,520	4,690	4,850
Refrigerant (*3) (Charged	refrigerant amount)		lb	14.8	14.8	14.8
Electrical	Unit	MCA (*4)	A	36.3	36.3	36.3
specifications		Recommended fuse size	A	40	40	40
Refrigerant	Connecting	Gas side (main pipe) (Brazing)	in	5/8	5/8	3/4
piping	port	Liquid side (main pipe) (Flare)	in	3/8	3/8	3/8
Operation temperature ray	nge	Cooling	° F DB	23 to 122		
Heating Heating		Heating	° F WB		-13 to 60	
Maximum number of conr	nected indoor units			6	8	9
Capacity of combined inde	oor units			80 to 135%	50 to 1	35%
Sound pressure level (Co	oling/Heating)		dB(A)	52/56	54/57	55/58

Subject to change.

(*1) Rated conditions

Cooling: Indoor 80° F Dry Bulb/67° F Wet Bulb, Outdoor 95° F Dry Bulb. Heating: Indoor 70° F Dry Bulb, Outdoor 47° F Dry Bulb/43° F Wet Bulb.

(*2) The source voltage must not fluctuate more than $\pm 10\%$

(3) The amount does not consider extra piping length. Refrigerant must be added on site in accordance with the actual piping length.

(*4) Select wire size based on the larger value of MCA

MCA: Minimum Circuit Amps (Minimum Circuit Amps required for power supply design)

Indoor Unit Overview

		-		15		
	Cooling capacity kBtu/h (Ton)	Slim Duct	Concealed Duct	High Static Duct	Vertical AHU	Outside Air
	7,500 (0.6)	~	1			
	9,500 (0.8)	~	1			
	12,000 (1)	~	1		1	
	15,400 (1.25)	1	1			
2	18,000 (1.5)	~	1		1	
1006	21,000 (1.75)		1			
	24,000 (2)		1		1	
	30,000 (2.5)		1	1	1	
	36,000 (3)		~	1	~	
	42,000 (3.5)		~		1	
	48,000 (4)		~	1	~	1
	60,000 (5)				~	
	72,000 (6)			1		1
	96,000 (8)			1		1

Cooling capacity kBtu/h (Ton)	4-Way Cassette	Compact 4·Way Cassette	High Wall	Underceiling	Floor Console – Exposed	Floor Console – Recessed
7,500 (0.6)	✓	✓	✓		✓	~
9,500 (0.8)	✓	~	1		~	~
12,000 (1)	✓	~	1		~	~
15,000 (1.25)	✓	✓	✓		~	1
18,000 (1.5)	✓	~	1	~	1	1
21,000 (1.75)	1					
24,000 (2)	✓		1	~	1	1
30,000 (2.5)	✓					
36,000 (3)	1			1		
42,000 (3.5)	1			1		
	Cooling capacity kBtu/h (Ton) 7,500 (0.6) 9,500 (0.8) 12,000 (1) 15,000 (1.25) 18,000 (1.5) 21,000 (1.75) 24,000 (2) 30,000 (2.5) 36,000 (3) 42,000 (3.5)	Cooling capacity kBtu/h (Ton) 4-Way Cassette 7,500 (0.6) ✓ 9,500 (0.8) ✓ 12,000 (1) ✓ 15,000 (1.25) ✓ 21,000 (1.5) ✓ 21,000 (1.75) ✓ 30,000 (2.5) ✓ 36,000 (3) ✓	Cooling capacity kBtu/h (Ton) 4-Way Cassette Compact 4-Way Cassette 7,500 (0.6) ✓ ✓ 9,500 (0.8) ✓ ✓ 12,000 (1) ✓ ✓ 15,000 (1.25) ✓ ✓ 18,000 (1.5) ✓ ✓ 21,000 (1.75) ✓ ✓ 30,000 (2.5) ✓ ✓ 36,000 (3) ✓ ✓ 42,000 (3.5) ✓ ✓	Cooling capacity kBtu/h (Ton) 4-Way Cassette Compact 4-Way Cassette High Wall 7,500 (0.6) ✓ ✓ ✓ 9,500 (0.8) ✓ ✓ ✓ 12,000 (1) ✓ ✓ ✓ 15,000 (1.25) ✓ ✓ ✓ 18,000 (1.5) ✓ ✓ ✓ 21,000 (1.75) ✓ ✓ ✓ 24,000 (2) ✓ ✓ ✓ 30,000 (2.5) ✓ ✓ ✓ 42,000 (3.5) ✓ ✓ ✓	Cooling capacity kBtu/h (Ton) 4-Way Cassette Compact 4-Way Cassette High Wall Underceiling 7,500 (0.6) ✓	Cooling capacity kBtu/h (Ton)4-Way CassetteCompact 4-Way CassetteHigh WallUnderceilingFloor Console- Exposed7,500 (0.6)✓✓✓✓✓9,500 (0.8)✓✓✓✓✓12,000 (1)✓✓✓✓✓15,000 (1.25)✓✓✓✓✓18,000 (1.5)✓✓✓✓✓21,000 (1.75)✓✓✓✓✓24,000 (2.5)✓✓✓✓✓36,000 (3)✓✓✓✓✓42,000 (3.5)✓✓✓✓✓

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