

CITY MULTI® VRF System Efficiencies – Air Source



Model Number	Rated Cooling Capacity	Cooling EER (Ducted / Non-Ducted)	Heating 47° COP (Ducted / Non-Ducted)	Heating 17° COP (Ducted / Non-Ducted)	IEER (Ducted / Non-Ducted)	SCHE (Ducted / Non-Ducted)
HEAT PUMP Models 208/230V & 460V, 3-phase						
PUHY-P72T/YKMU-A (-BS)	69,000	13.0 / 14.2	3.83 / 4.19	2.59 / 2.39	19.8 / 21.3	N/A
PUHY-P96T/YKMU-A (-BS)	92,000	12.6 / 13.7	3.95 / 4.22	2.71 / 2.68	19.7 / 20.7	N/A
PUHY-P120T/YKMU-A (-BS)	114,000	12.5 / 12.7	3.66 / 3.83	2.51 / 2.38	19.1 / 19.1	N/A
PUHY-P144T/YKMU-A (-BS)	137,000	11.6 / 11.8	3.56 / 3.72	2.32 / 2.22	19.3 / 20.2	N/A
PUHY-P144YSKMU-A (-BS)	137,000	12.8 / 13.2	3.79 / 3.95	2.56 / 2.13	19.3 / 20.3	N/A
PUHY-P168T/YSKMU-A (-BS)	161,000	12.6 / 12.9	3.78 / 3.83	2.60 / 2.19	19.6 / 19.7	N/A
PUHY-P192T/YSKMU-A (-BS)	183,000	12.4 / 12.5	3.63 / 3.61	2.45 / 2.17	18.9 / 19.1	N/A
PUHY-P216T/YSKMU-A (-BS)	206,000	12.3 / 12.3	3.65 / 3.56	2.48 / 2.09	18.9 / 18.6	N/A
PUHY-P240T/YSKMU-A (-BS)	228,000	12.1 / 12.0	3.55 / 3.53	2.42 / 2.05	18.6 / 18.1	N/A
PUHY-P264T/YSKMU-A (-BS)	252,000	12.5 / 12.5	3.68 / 3.60	2.52 / 2.16	19.0 / 18.7	N/A
PUHY-P288T/YSKMU-A (-BS)	275,000	12.4 / 12.4	3.68 / 3.59	2.53 / 2.21	19.0 / 18.7	N/A
PUHY-P312T/YSKMU-A (-BS)	297,000	12.1 / 12.1	3.54 / 3.45	2.43 / 2.22	18.4 / 18.1	N/A
PUHY-P336T/YSKMU-A (-BS)	320,000	11.9 / 12.0	3.50 / 3.36	2.38 / 2.13	18.2 / 17.8	N/A
PUHY-P360T/YSKMU-A (-BS)	342,000	11.7 / 11.8	3.39 / 3.22	2.32 / 2.05	17.8 / 17.2	N/A
HEAT PUMP WITH HEAT RECOVERY Models 208/230V & 460V, 3-phase						
PURY-P72T/YKMU-A (-BS)	69,000	13.9 / 15.5	3.81 / 3.72	2.62 / 2.49	21.1 / 22.1	23.6 / 24.5
PURY-P96T/YKMU-A (-BS)	92,000	12.2 / 13.6	3.64 / 3.71	2.47 / 2.49	19.7 / 20.9	17.4 / 23.5
PURY-P120T/YKMU-A (-BS)	114,000	11.7 / 12.2	3.45 / 3.61	2.31 / 2.42	18.6 / 20.8	16.8 / 19.7
PURY-P144T/YKMU-A (-BS)	137,000	11.7 / 12.7	3.41 / 3.28	2.32 / 2.06	18.0 / 20.9	18.2 / 20.2
PURY-P144YSKMU-A (-BS)	137,000	12.0 / 14.4	3.54 / 3.65	2.41 / 2.30	18.8 / 20.6	21.8 / 24.0
PURY-P168T/YSKMU-A (-BS)	161,000	12.1 / 12.9	3.63 / 3.52	2.54 / 2.22	19.4 / 19.1	20.0 / 22.6
PURY-P192T/YSKMU-A (-BS)	183,000	11.6 / 11.9	3.64 / 3.47	2.54 / 2.18	19.3 / 18.2	17.4 / 21.8
PURY-P216T/YSKMU-A (-BS)	206,000	11.4 / 11.3	3.54 / 3.43	2.27 / 2.16	18.7 / 18.3	17.1 / 20.1
PURY-P240T/YSKMU-A (-BS)	228,000	10.9 / 10.9	3.38 / 3.42	2.13 / 2.15	17.8 / 18.5	16.5 / 18.6
PURY-P264T/YSKMU-A (-BS)	251,000	11.0 / 11.0	3.40 / 3.25	2.36 / 2.08	17.7 / 18.4	17.3 / 18.7
PURY-P288T/YSKMU-A (-BS)	274,000	11.2 / 11.3	3.41 / 3.20	2.36 / 2.05	17.6 / 18.6	18.2 / 19.0
HYPER-HEAT HEAT PUMP WITH HEAT RECOVERY Models 208/230V & 460V, 3-phase						
PURY-HP72TKMU-A-H	69,000	12.9 / 13.0	3.61 / 3.55	2.27 / 2.26	17.2 / 18.4	22.7 / 22.6
PURY-HP96TKMU-A-H	92,000	11.4 / 12.5	3.46 / 3.44	2.26 / 2.26	16.5 / 17.1	17.4 / 22.0
PURY-HP144TSKMU-A-H	137,000	12.5 / 12.6	3.47 / 3.41	2.13 / 2.12	16.7 / 17.9	22.1 / 22.0
PURY-HP192TSKMU-A-H	183,000	11.1 / 12.1	3.32 / 3.31	2.12 / 2.12	16.1 / 16.6	16.9 / 21.4
PURY-HP72YKMU-A	69,000	12.9 / 13.0	3.61 / 3.55	2.27 / 2.26	17.2 / 18.4	22.7 / 22.6
PURY-HP96YKMU-A	92,000	11.4 / 12.5	3.46 / 3.44	2.26 / 2.26	16.5 / 17.1	17.4 / 22.0
PURY-HP144YSKMU-A	137,000	12.5 / 12.6	3.47 / 3.41	2.13 / 2.12	16.7 / 17.9	22.1 / 22.0
PURY-HP192YSKMU-A	183,000	11.1 / 12.1	3.32 / 3.31	2.12 / 2.12	16.1 / 16.6	16.9 / 21.4

Important: Interpreting the Test Results COP & EER

Energy Efficiency Ratio (EER) and Coefficient of Performance (COP) testing is performed at rated capacity per ANSI/AHRI Standard 1230 test specification based on a fixed energy consumption level. Many of the energy saving benefits of Variable Refrigerant Flow (VRF) systems are not reflected in these numbers. Other features of VRF which maximize energy savings and are not included in EER and COP are:

- 1. Inverter driven compressor that varies the system capacity based on load demands. Capacity can vary from 100% down to as low as 4%, depending on unit size.
- Smart coil technology automatically varies the indoor unit capacity based on space cooling or heating requirements.
- 3. The CÎTY MULTI VRF systems can take advantage of building load diversity by using up to 130% (Y Series) and 150% (R2 Series) connected indoor unit capacity. In many cases this can result in smaller capacity requirements for outdoor units.
- 4. R2-Series have the ability to transfer energy from one zone to another.
 For Example: when one zone needs cooling and another needs heating, the refrigerant absorbs heat from the spaces in cooling mode and transfers that heat to the zones requiring heat. A balance point can be achieved where no energy is rejected or absorbed from the outdoor.

IEER

Integrated Energy Efficiency Ratio (IEER) is a part load efficiency metric with minimum requirements being defined by ASHRAE 90.1. This measurement better demonstrates the energy savings capabilities of the City Multi VRF systems by accounting for efficiencies at varing temperature and capacity conditions. For comparison of the above numbers to other system types, include all energy consuming components of the system; pumps, blower motors, etc.

SCHE

The Simultaneous Cooling and Heating Efficiency (SCHE) applies only to heat-recovery VRF systems per AHRI Standard 1230. The system is tested at 47° F with 50% of the indoor units in heating and 50% of the indoor units in cooling. Therefore, SCHE is a measure of BOTH cooling and heating capacity, while all the other ratings are a measure of just cooling (EER, IEER) or heating (COP). Because SCHE is only applicable to heat recovery VRF systems, it is not beneficial to compare the SCHE rating of a VRF system to the EER or IEER of another system type. Instead, the intended use of SCHE is to compare heat recovery VRF systems against each other.



COOLING & HEATING

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