ACHYRA®

Soluzioni Energetiche Sostenibili

**Achyra Holding srl**

Milano - Nola - HongKong - Guangzhou

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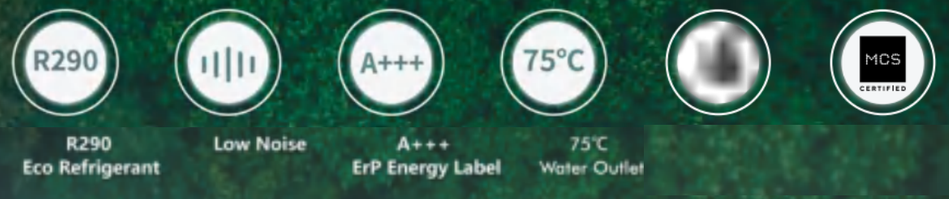
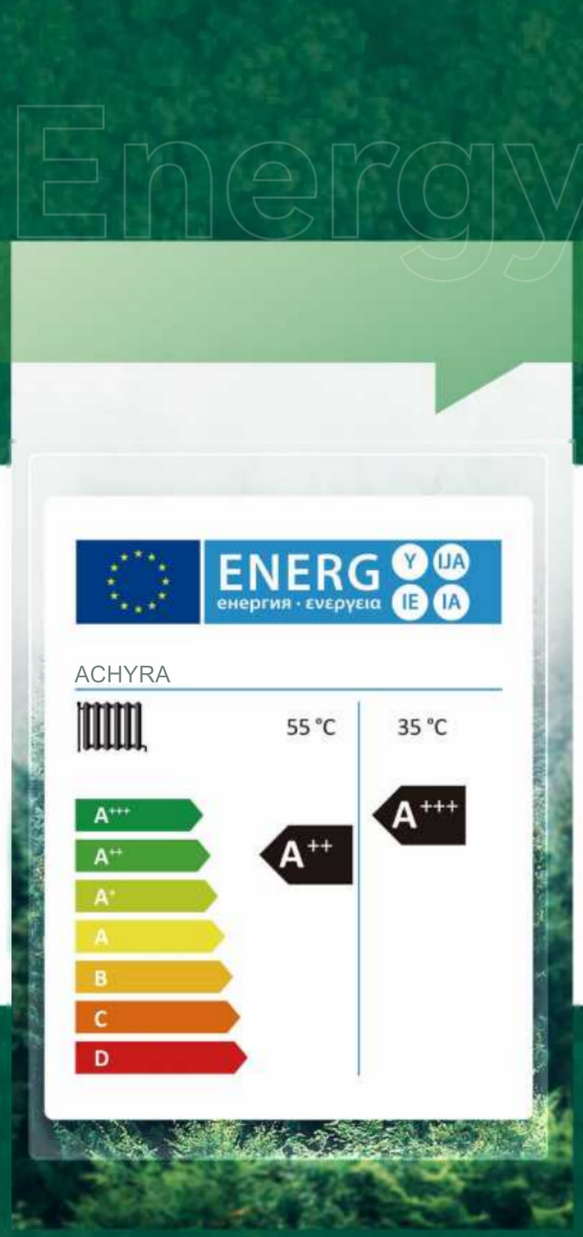
# R290 DC Inverter Space Heating

## Pompa di calore




# Refrigerante

La pompa di calore della serie ACHYRA utilizza il refrigerante ecologico R290 il cui GWP è inferiore a 20 e contribuisce a frenare il riscaldamento globale. La pompa di calore ACHYRA R290 raggiunge un'efficienza superiore rispetto a quelle con altri refrigeranti.

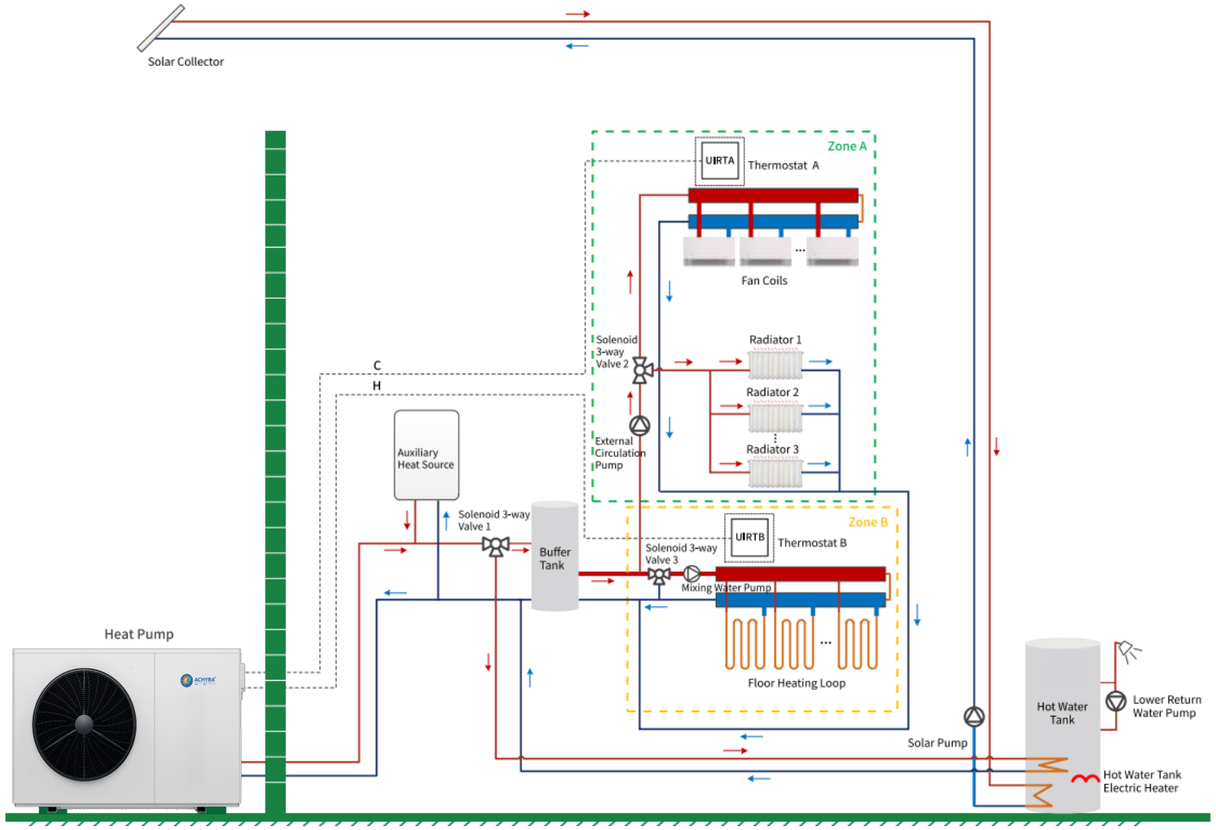




## Etichetta Energetica

Conformità alle direttive ERP, La serie ACHYRA dimostra la sua potente capacità e ottiene la classificazione energetica A++/A+++, che soddisfa le esigenze degli utenti di bollette energetiche basse.

# Disegno tecnico per l'intero impianto domestico

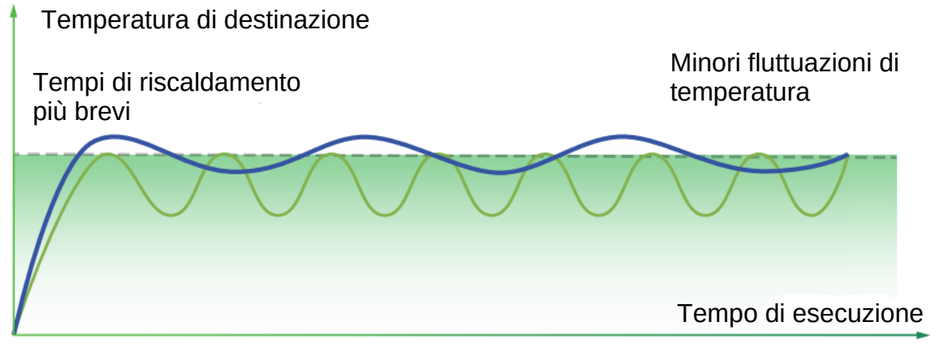
La Pompa di Calore Serie ACHYRA consente l'interblocco (collegamento/ integrazione) con fonti di calore ausiliarie per fornire riscaldamento, raffrescamento e acqua calda per la casa. Con la funzione di controllo Smart Grid, l'unità può commutare automaticamente gli stati per sfruttare appieno l'energia inattiva, risparmiando ulteriormente elettricità, in base all'energia immagazzinata dai pannelli fotovoltaici e allo stato della rete elettrica. Inoltre, gli utenti possono accedere a un termostato ambiente per controllare l'accensione e lo spegnimento dell'unità principale e realizzare un controllo preciso delle zone.

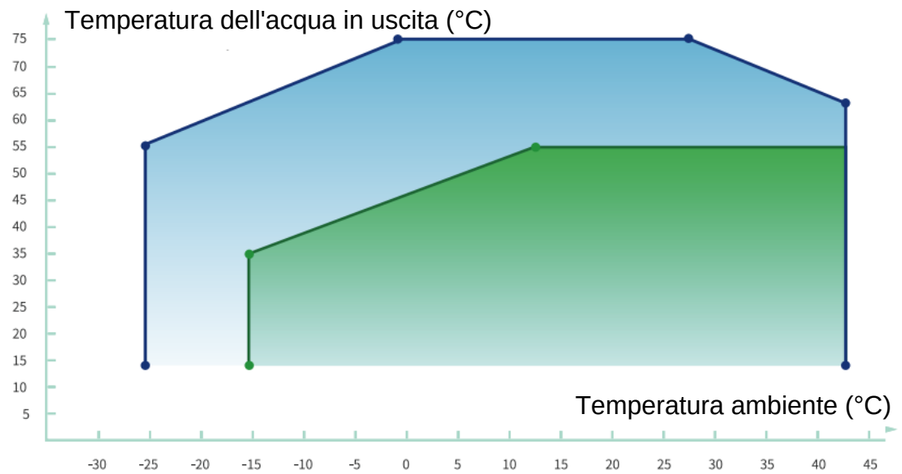



Con SG Ready, la pompa di calore può commutare automaticamente lo stato in base all'accumulo di energia delle apprarecchiature fotovoltaiche e allo stato di picco e valle della potenza della rete, sftuttando a pieno l'energia gratuita.

# Tecnologia Full DC Inverter

La serie ACHYRA adotta la tecnologia Full DC Inverter che regola automaticamente la frequenza in base alla temperatura ambiente per ottenere una temperatura più costante e offrire agli utenti un'esperienza confortevole a casa.




Funzionamento stabile a una temperatura ambiente di -25°C e alla temperatura massima dell'acqua in uscita è fino a 75 ℃

# Basso Rumore

ACHYRA si impegna a creare un ambiente di esecuzione abbastanza silenzioso per l'utente attraverso molteplici misure di riduzione del rumore.

Compressore Inverter DC

Motore Brushless DC

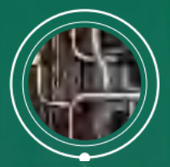
Lama ventilatore di design speciale

Piastra Ammortizzante

Cotone fonoassorbente

Griglia di ventilazione turbolenta

Design ottimizzato delle tubazioni



# Componenti

## Compressore inverter DC

Il compressore di marca rinomata garantisce una capacità di riscaldamento stabile e riduce la rumorosità

## Motore della ventola DC

Il motore della ventola DC è progettato per migliorare l'efficienza di lavoro e ridurre la rumorosità

## Scambiatore di calore a piastre

Lo scambiatore di calore a piastre di marca rinomata è stato selezionato per aumentare la superficie di scambio termico e ottenere un COP più elevato.


## Pompa di circolazione a inverter DC

La Famosa pompa di circolazione silenziosa è installata all'interno dell' unità per un'esperienza più confortevole.



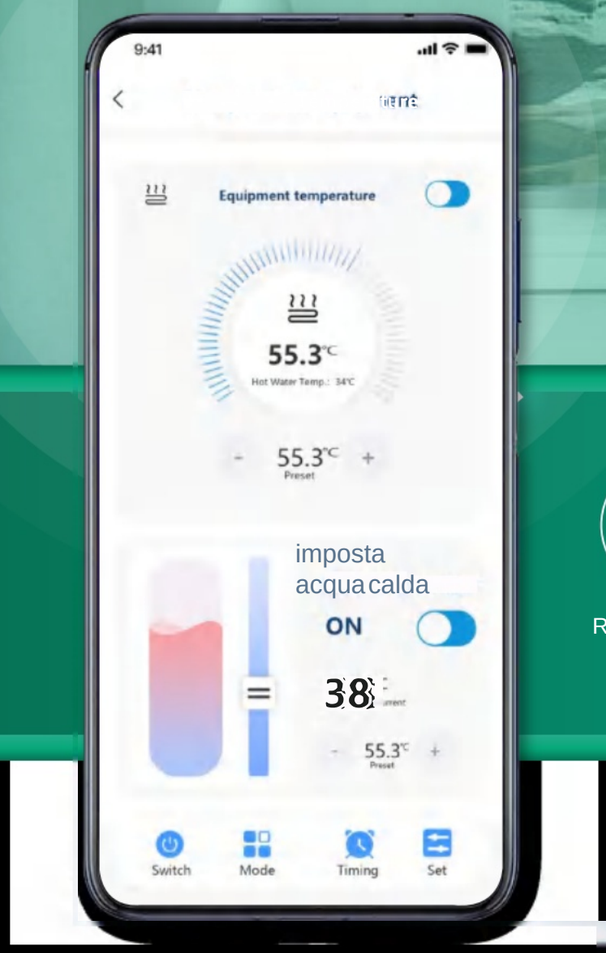
## Vaso di espansione

Vaso di espansione integrato per mantenere stabile il sistema idrico e per una comoda l'installazione.

# Funzione IoT

Internet of Things Platform

Collega l'App E-Home per controllare lo stato di funzionamento in tempo reale, i dati storici e monitorare la pompa di calore da remoto.




Riscaldamento

Raffreddamento

Acqua calda

Acqua calda + Raffreddamento

Acqua calda + Riscaldamento

Modalità Silenziosa

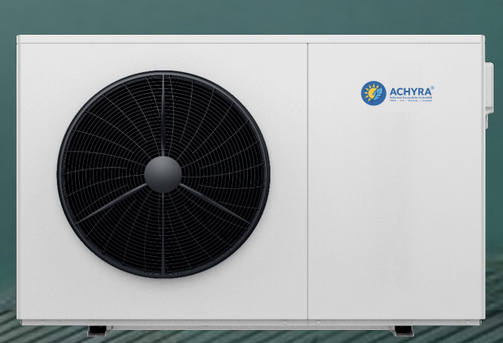
Impostazione Orario

Riscaldatore Elettrico

Curva

# Wire Controller "a colori"

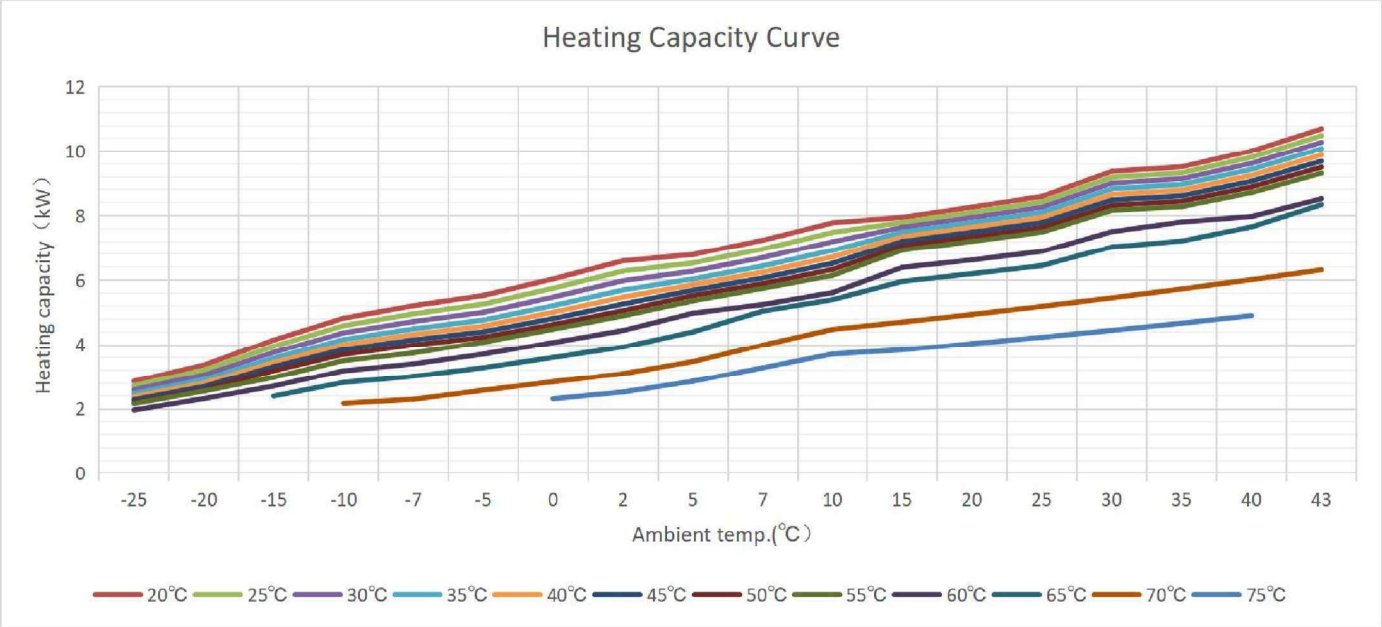
Le Pompe di Calore  ACHYRA R290 utilizzano un display LCD a colori intelligente con interfaccia ad alta definizione e potenti funzioni, che è molto intuitivo e utile per gli utenti per la visualizzazione e il controllo.



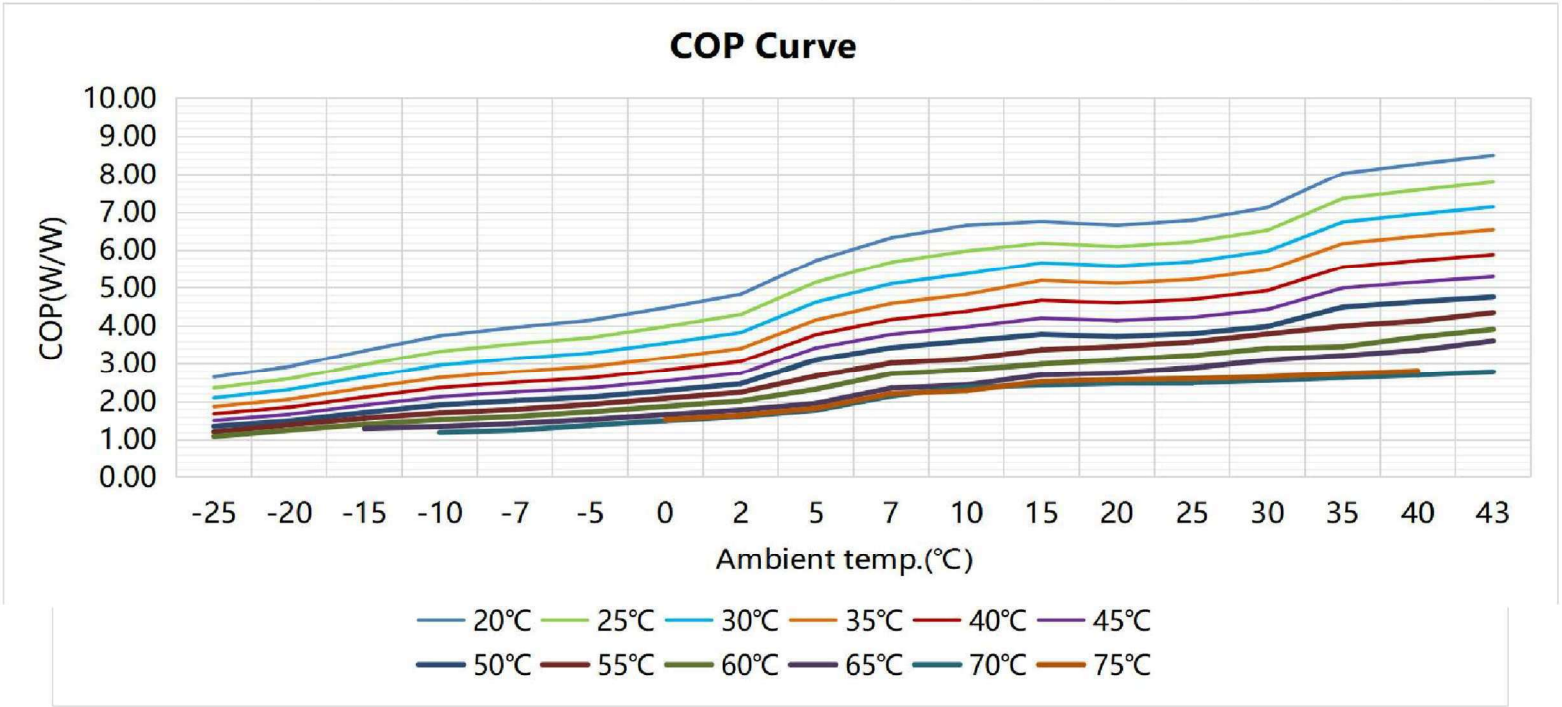
| MODELLO: AR-H | 60HCR5AR-HI | 90HCR5AR-HI | 130HCR5AR-HI | 160HCR5AR-HI | 90HCR5AR-HIT | 130HCR5AR-HIT | 160HCR5AR-HIT | 185HCR5AR-HIT | 200HCR5AR-HIT |
|---|---|---|---|---|---|---|---|---|---|
| **[Riscaldamento ambienti] Temperatura ambiente (DB/WB): 7°C/6°C, Temperatura acqua (ingresso/uscita): 30°C/35°C.** | | | | | | | | | |
| Capacità di riscaldamento (kW) | 2,00~6,00 | 3.50~8.81 | 4,50~12,74 | 6.00~16.00 | 3,50~8,81 | 4,50~12,74 | 6,00~16,00 | 6,30~18,00 | 6,70~20,36 |
| Potenza assorbita (kW) | 0,30~1,31 | 0,58~1,89 | 0,75~2,82 | 1,00~3,49 | 0,58~1,89 | 0,75~2,82 | 1,00~3,49 | 1,05~3,92 | 1,12~4,62 |
| COP | 6,00~4,58 | 6,00~4,65 | 6,00~4,52 | 6,00~4,59 | 6,00~4,65 | 6,00~4,52 | 6,00~4,59 | 6,00~4,59 | 5,98~4,40 |
| **[Riscaldamento ambienti] Temperatura ambiente (DB/WB): 7°C/6°C, Temperatura acqua (ingresso/uscita): 50°C/55°C.** | | | | | | | | | |
| Capacità di riscaldamento (kW) | 1,80~5,40 | 3,15~7,98 | 3,90~11,25 | 5,40~14,4 | 3,15~7,98 | 3,90~11,25 | 5,40~14,40 | 5,70~16,2 | 5,80~18,48 |
| Potenza assorbita (kW) | 0,39~1,74 | 0,68~2,55 | 0,85~3,66 | 1,17~4,97 | 0,68~2,55 | 0,85~3,66 | 1,17~4,97 | 1,24~5,58 | 1,26~6,29 |
| COP | 4,63~3,10 | 4,63~3,13 | 4,59~3,07 | 4,61~2,90 | 4,63~3,13 | 4,59~3,07 | 4,61~2,90 | 4,60~2,90 | 4,60~2,94 |
| **[Raffreddamento degli ambienti] Temperatura ambiente (DB/WB): 35°C / -, Temperatura acqua (ingresso/uscita): 12°C/7°C.** | | | | | | | | | |
| Capacità di raffreddamento (kW) | 1,20~4,00 | 1,53~5,96 | 2,93~8,87 | 3,50~13,00 | 1,53~5,96 | 2,93~8,87 | 3,50~13,00 | 4,00~13,50 | 4,40~14,40 |
| Potenza assorbita (kW) | 0,26~1,38 | 0,33~2,11 | 0,63~3,26 | 0,76~4,33 | 0,33~2,11 | 0,63~3,26 | 0,76~4,33 | 0,86~4,50 | 0,95~4,69 |
| EER | 4,62~2,90 | 4,64~2,82 | 4,65~2,72 | 4,60~3,00 | 4,54~2,82 | 4,65~2,72 | 4,60~3,00 | 4,63~3,00 | 4,63~3,08 |
| **[Acqua calda] Temperatura ambiente (DB/WB): 20°C/15°C, Temperatura acqua da 15°C a 55°C.** | | | | | | | | | |
| Capacità di riscaldamento (kW) | 6.60 | 9.33 | 13.90 | 17.20 | 9.33 | 13.90 | 17.20 | 19.80 | 22.69 |
| Potenza assorbita (kW) | 1.52 | 2.14 | 3.28 | 4.00 | 2.14 | 3.28 | 4.00 | 4.60 | 5.19 |
| Intervallo di ingresso corrente acqua calda (A) | 6.66 | 9.80 | 14.36 | 17.75 | 3.5 | 5.36 | 6.53 | 7.51 | 7.95 |
| COP | 4.35 | 4.35 | 4.24 | 4.30 | 4.35 | 4.24 | 4.30 | 4.30 | 4.37 |
| Potenza massima in ingresso  (kW) | 2.80 | 4.00 | 5.00 | 6.00 | 4.00 | 5.00 | 6.00 | 6.50 | 6.80 |
| Corrente massima di funzionamento (A) | 14.30 | 18.30 | 22.90 | 29.00 | 7.1 | 8.70 | 10.80 | 11.30 | 11.60 |
| Temperatura massima dell' acqua in uscita (°C) | 75.00 | | | | 75.00 | | | | |
| Intervallo di funzionamento (°C) | -25~43 | | | | -25-43 | | | | |
| Alimentazione elettrica | 220~240V~/50Hz | | | | 380~415V/3N~/ 50Hz | | | | |
| Portata d'acqua nominale (mc/h) | 1.03 | 1.5 | 2.19 | 2.75 | 1.5 | 2.19 | 2.75 | 3.10 | 3.44 |
| Marca del compressore | HIGHLY | | | | HIGHLY | | | | |
| Pompa di circolazione | Built-In | | | | Built-In | | | | |
| Vaso di espansione (L) | 2 | | | 5 | 2.00 | | 5.00 | | |
| CO2 EQUIVALENTE (TONNELLATE) | 0.0015 | 0.0023 | 0.0029 | 0.0049 | 0.0023 | 0.0029 | 0.0049 | 0.0049 | 0.0049 |
| Livello ErP (35°C) | A+++ | | | | A+++ | | | | |
| Livello ErP (55°C) | A++ | | | | A++ | | | | |
| Tipo di refrigerante | R290 | | | | R290 | | | | |
| Livello di pressione sonora dB (A) a 1 m | 43~48 | 43~49 | 43~55 | 44~54 | 43~49 | 43~55 | 44~54 | 44~56 | 44~54 |
| Collegamento tubo acqua (pollici) | G1 1/4" | | | | G1 1/4" | | | | |
| Classe impermeabile | IPX4 | | | | IPX4 | | | | |
| Electricity Shock Proof | I | | | | I | | | | |
| Dimensioni nette (LxPxH) (mm) | 1180 x 440 x 710 | 1263 x 440 x 875 | | 1263 x 440 x 1375 | 1263 x 440 x 875 | | 1263 x 440 x 1375 | | |

| Performance curves of 6KW R290 Full inverter Heating&Cooling Heat Pump | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Heating Capacity (kW) | | | | | | | | | | | | | | | | | | |
| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 2.86 | 3.37 | 4.16 | 4.83 | 5.21 | 5.52 | 6.03 | 6.59 | 6.78 | 7.23 | 7.77 | 7.94 | 8.26 | 8.59 | 9.37 | 9.51 | 10.01 | 10.70 |
| 25℃ | 2.72 | 3.21 | 3.96 | 4.60 | 4.96 | 5.26 | 5.74 | 6.27 | 6.52 | 6.95 | 7.47 | 7.79 | 8.10 | 8.42 | 9.18 | 9.32 | 9.81 | 10.49 |
| 30℃ | 2.59 | 3.06 | 3.77 | 4.38 | 4.73 | 5.01 | 5.47 | 5.97 | 6.27 | 6.69 | 7.19 | 7.64 | 7.94 | 8.26 | 9.00 | 9.14 | 9.62 | 10.28 |
| 35℃ | 2.47 | 2.91 | 3.59 | 4.17 | 4.50 | 4.77 | 5.21 | 5.69 | 6.03 | 6.43 | 6.91 | 7.49 | 7.79 | 8.10 | 8.83 | 8.96 | 9.43 | 10.08 |
| 40℃ | 2.38 | 2.80 | 3.45 | 4.01 | 4.33 | 4.59 | 5.01 | 5.47 | 5.85 | 6.24 | 6.71 | 7.34 | 7.63 | 7.94 | 8.65 | 8.78 | 9.25 | 9.88 |
| 45℃ | 2.28 | 2.69 | 3.32 | 3.86 | 4.16 | 4.41 | 4.82 | 5.26 | 5.68 | 6.06 | 6.51 | 7.20 | 7.48 | 7.78 | 8.48 | 8.61 | 9.06 | 9.69 |
| 50℃ | 2.20 | 2.59 | 3.19 | 3.71 | 4.00 | 4.24 | 4.63 | 5.06 | 5.52 | 5.88 | 6.32 | 7.05 | 7.34 | 7.63 | 8.32 | 8.44 | 8.89 | 9.50 |
| 55℃ | 2.16 | 2.55 | 2.98 | 3.51 | 3.75 | 4.09 | 4.49 | 4.90 | 5.36 | 5.74 | 6.14 | 6.92 | 7.20 | 7.49 | 8.16 | 8.28 | 8.71 | 9.31 |
| 60℃ | 1.96 | 2.32 | 2.71 | 3.19 | 3.41 | 3.71 | 4.08 | 4.45 | 4.98 | 5.25 | 5.61 | 6.39 | 6.62 | 6.88 | 7.50 | 7.80 | 7.97 | 8.52 |
| 65°C | | | 2.39 | 2.82 | 3.01 | 3.29 | 3.61 | 3.94 | 4.41 | 5.04 | 5.39 | 5.95 | 6.19 | 6.44 | 7.02 | 7.21 | 7.65 | 8.34 |
| 70°C | | | | 2.17 | 2.29 | 2.58 | 2.84 | 3.10 | 3.48 | 4.00 | 4.48 | 4.71 | 4.94 | 5.19 | 5.45 | 5.72 | 6.01 | 6.31 |
| 75°C | | | | | | | 2.31 | 2.52 | 2.86 | 3.28 | 3.72 | 3.85 | 4.04 | 4.24 | 4.46 | 4.68 | 4.91 | |

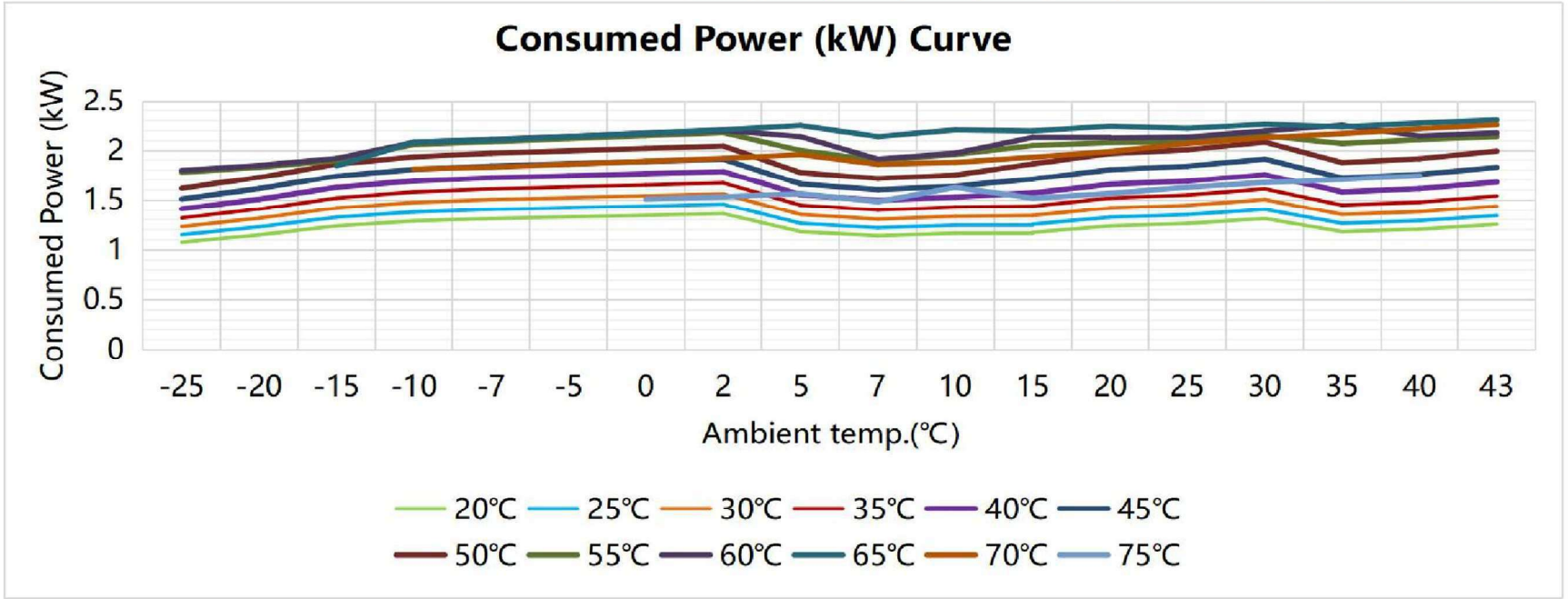


COP (kW/kW)

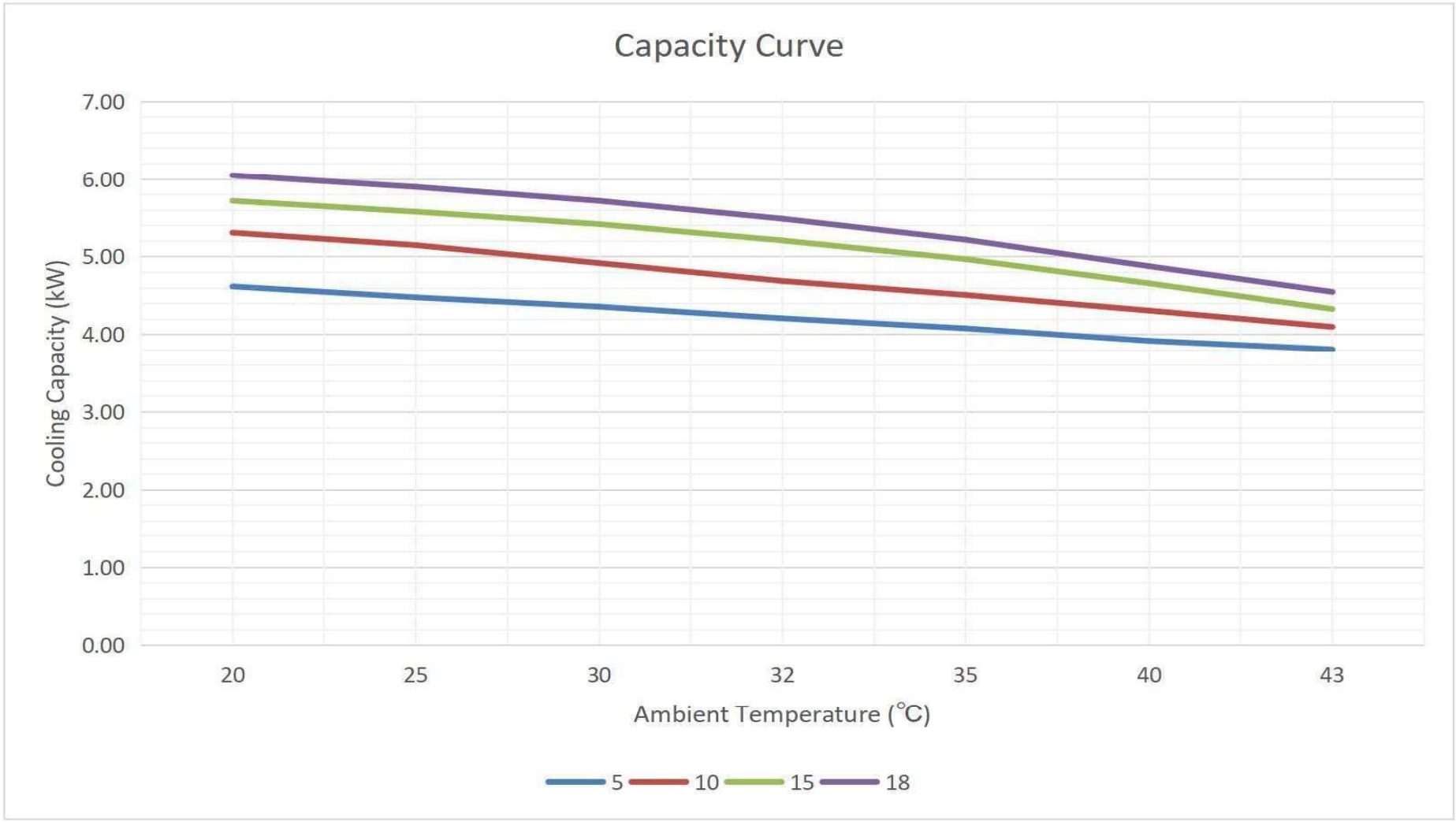
| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 2.65 | 2.93 | 3.35 | 3.74 | 3.96 | 4.15 | 4.48 | 4.83 | 5.73 | 6.33 | 6.66 | 6.76 | 6.66 | 6.79 | 7.13 | 8.03 | 8.28 | 8.51 |
| 25℃ | 2.36 | 2.61 | 2.98 | 3.33 | 3.53 | 3.69 | 3.99 | 4.30 | 5.15 | 5.69 | 5.98 | 6.19 | 6.10 | 6.22 | 6.53 | 7.36 | 7.59 | 7.80 |
| 30℃ | 2.10 | 2.32 | 2.65 | 2.97 | 3.14 | 3.29 | 3.55 | 3.83 | 4.63 | 5.11 | 5.38 | 5.67 | 5.59 | 5.70 | 5.98 | 6.74 | 6.95 | 7.14 |
| 35℃ | 1.87 | 2.06 | 2.36 | 2.64 | 2.80 | 2.93 | 3.16 | 3.41 | 4.16 | 4.59 | 4.83 | 5.20 | 5.12 | 5.22 | 5.48 | 6.18 | 6.37 | 6.55 |
| 40℃ | 1.68 | 1.85 | 2.12 | 2.37 | 2.51 | 2.63 | 2.84 | 3.06 | 3.77 | 4.17 | 4.38 | 4.68 | 4.61 | 4.70 | 4.93 | 5.56 | 5.73 | 5.89 |
| 45℃ | 1.51 | 1.67 | 1.91 | 2.13 | 2.26 | 2.36 | 2.55 | 2.75 | 3.42 | 3.78 | 3.98 | 4.21 | 4.14 | 4.23 | 4.43 | 5.00 | 5.15 | 5.30 |
| 50℃ | 1.36 | 1.50 | 1.71 | 1.92 | 2.03 | 2.12 | 2.29 | 2.47 | 3.11 | 3.43 | 3.61 | 3.78 | 3.73 | 3.80 | 3.99 | 4.50 | 4.64 | 4.76 |
| 55℃ | 1.21 | 1.39 | 1.57 | 1.70 | 1.79 | 1.93 | 2.09 | 2.25 | 2.68 | 3.02 | 3.13 | 3.38 | 3.46 | 3.58 | 3.80 | 4.00 | 4.13 | 4.35 |
| 60℃ | 1.09 | 1.25 | 1.41 | 1.53 | 1.61 | 1.73 | 1.88 | 2.02 | 2.33 | 2.74 | 2.84 | 3.00 | 3.11 | 3.22 | 3.41 | 3.46 | 3.71 | 3.91 |
| 65℃ | | | 1.30 | 1.35 | 1.43 | 1.53 | 1.66 | 1.78 | 1.96 | 2.36 | 2.44 | 2.71 | 2.76 | 2.90 | 3.10 | 3.22 | 3.36 | 3.61 |
| 70℃ | | | | 1.20 | 1.25 | 1.38 | 1.50 | 1.61 | 1.77 | 2.15 | 2.38 | 2.44 | 2.48 | 2.51 | 2.56 | 2.64 | 2.71 | 2.79 |
| 75℃ | | | | | | | 1.53 | 1.64 | 1.83 | 2.21 | 2.29 | 2.53 | 2.58 | 2.61 | 2.66 | 2.74 | 2.81 | |



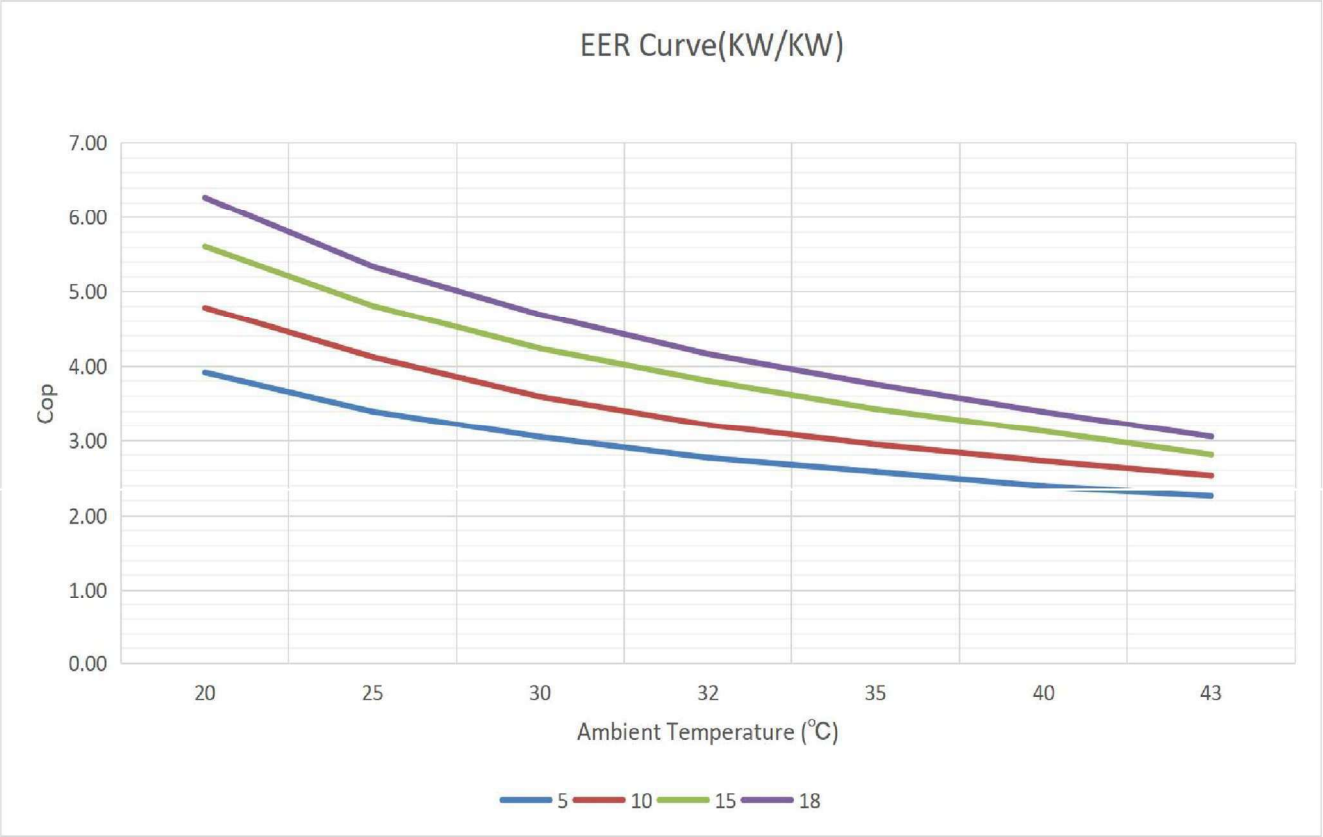
| Consumed Power (kW) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 1.08 | 1.15 | 1.24 | 1.29 | 1.31 | 1.33 | 1.35 | 1.36 | 1.18 | 1.14 | 1.17 | 1.18 | 1.24 | 1.27 | 1.31 | 1.18 | 1.21 | 1.26 |
| 25℃ | 1.15 | 1.23 | 1.33 | 1.38 | 1.41 | 1.42 | 1.44 | 1.46 | 1.27 | 1.22 | 1.25 | 1.26 | 1.33 | 1.35 | 1.41 | 1.27 | 1.29 | 1.35 |
| 30℃ | 1.23 | 1.32 | 1.42 | 1.48 | 1.50 | 1.52 | 1.54 | 1.56 | 1.36 | 1.31 | 1.34 | 1.35 | 1.42 | 1.45 | 1.50 | 1.36 | 1.38 | 1.44 |
| 35℃ | 1.32 | 1.41 | 1.52 | 1.58 | 1.61 | 1.63 | 1.65 | 1.67 | 1.45 | 1.40 | 1.43 | 1.44 | 1.52 | 1.55 | 1.61 | 1.45 | 1.48 | 1.54 |
| 40℃ | 1.41 | 1.51 | 1.63 | 1.69 | 1.72 | 1.74 | 1.77 | 1.79 | 1.55 | 1.50 | 1.53 | 1.57 | 1.66 | 1.69 | 1.75 | 1.58 | 1.61 | 1.68 |
| 45℃ | 1.51 | 1.61 | 1.74 | 1.81 | 1.84 | 1.87 | 1.89 | 1.91 | 1.66 | 1.60 | 1.64 | 1.71 | 1.81 | 1.84 | 1.91 | 1.72 | 1.76 | 1.83 |
| 50℃ | 1.62 | 1.73 | 1.86 | 1.94 | 1.97 | 2.00 | 2.02 | 2.05 | 1.78 | 1.72 | 1.75 | 1.86 | 1.97 | 2.01 | 2.08 | 1.88 | 1.92 | 1.99 |
| 55℃ | 1.78 | 1.83 | 1.90 | 2.06 | 2.09 | 2.12 | 2.15 | 2.18 | 2.00 | 1.90 | 1.96 | 2.05 | 2.08 | 2.09 | 2.15 | 2.07 | 2.11 | 2.14 |
| 60℃ | 1.80 | 1.85 | 1.92 | 2.08 | 2.11 | 2.14 | 2.17 | 2.20 | 2.14 | 1.91 | 1.97 | 2.13 | 2.13 | 2.14 | 2.20 | 2.26 | 2.15 | 2.18 |
| 65°C | | | 1.84 | 2.09 | 2.11 | 2.14 | 2.18 | 2.21 | 2.25 | 2.14 | 2.21 | 2.20 | 2.25 | 2.22 | 2.27 | 2.24 | 2.28 | 2.31 |
| 70°C | | | | 1.81 | 1.83 | 1.86 | 1.89 | 1.92 | 1.96 | 1.86 | 1.88 | 1.93 | 1.99 | 2.07 | 2.13 | 2.17 | 2.22 | 2.26 |
| 75°C | | | | | | | 1.51 | 1.53 | 1.56 | 1.49 | 1.63 | 1.52 | 1.56 | 1.63 | 1.67 | 1.71 | 1.75 | |



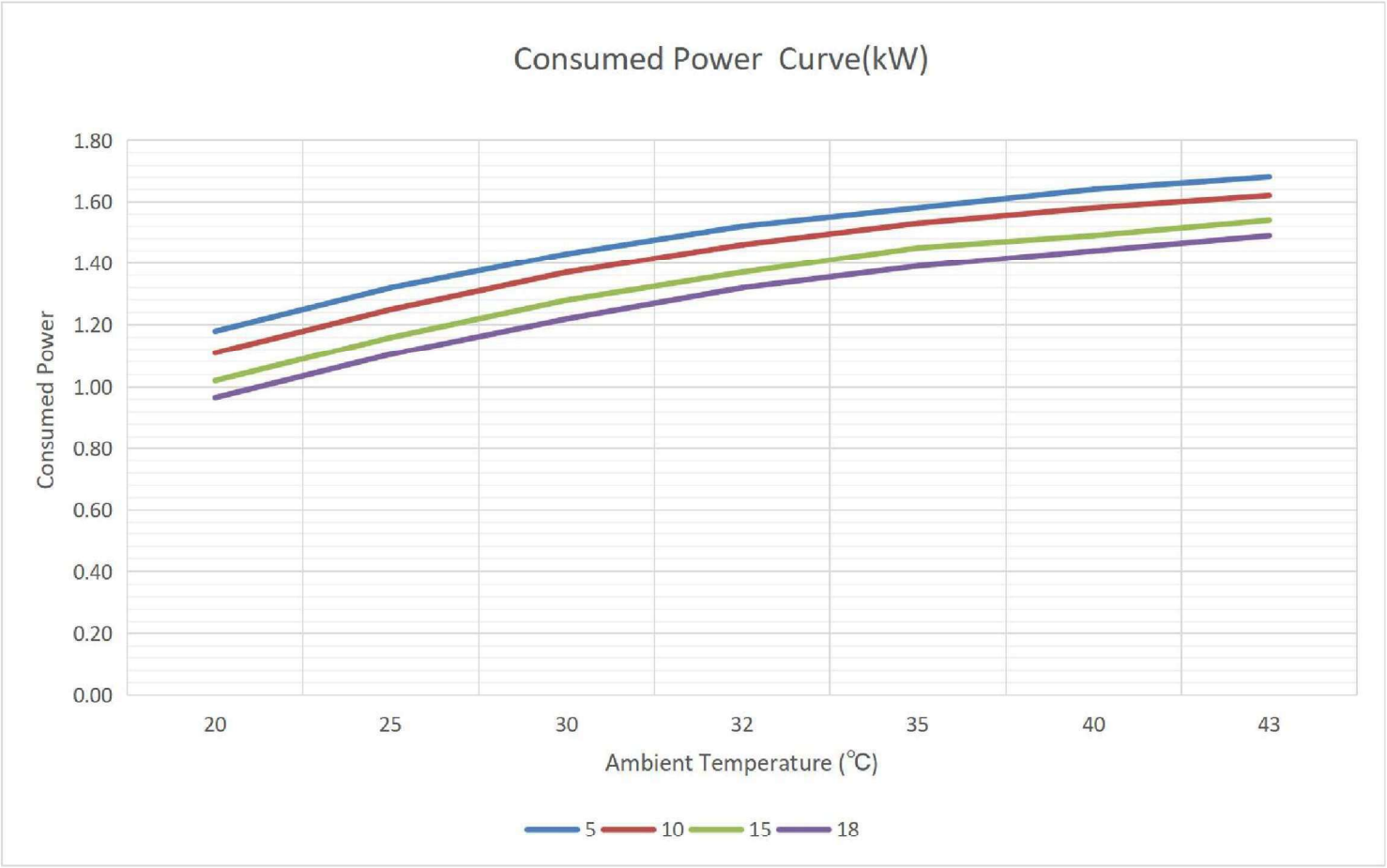
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 15 | 5.72 | 5.58 | 5.42 | 5.21 | 4.97 | 4.66 | 4.33 |
| 18 | 6.05 | 5.90 | 5.72 | 5.49 | 5.22 | 4.88 | 4.55 |



| EER (kW/kW) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 80Hz | 75Hz | 70Hz | 65Hz | | |
| Ambient (℃) / Outlet(℃) | 20 | 25 | 30 | 32 | 35 | 40 | 43 |
| 5 | 3.92 | 3.39 | 3.05 | 2.77 | 2.58 | 2.39 | 2.27 |
| 10 | 4.78 | 4.12 | 3.59 | 3.21 | 2.95 | 2.73 | 2.53 |
| 15 | 5.61 | 4.81 | 4.23 | 3.80 | 3.43 | 3.13 | 2.81 |
| 18 | 6.27 | 5.34 | 4.69 | 4.16 | 3.76 | 3.39 | 3.05 |



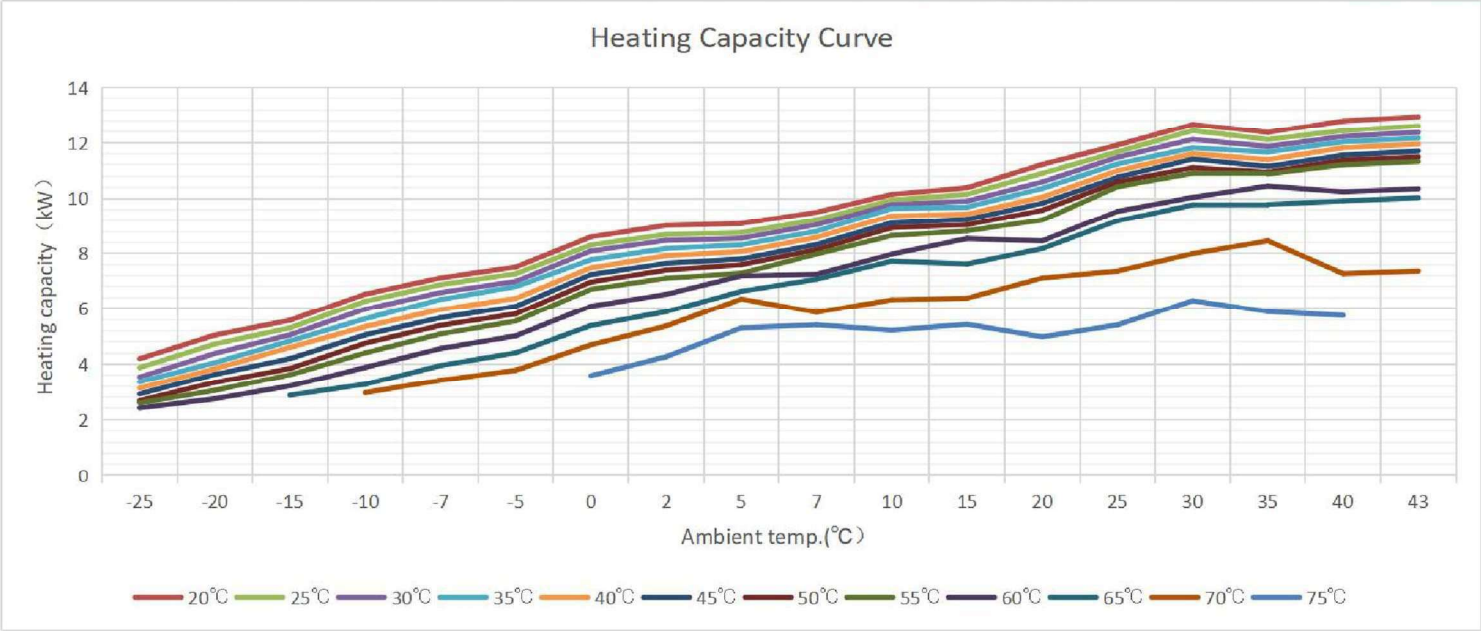
| Consumed Power （kW） | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | 80Hz | 75Hz | 70Hz | 65Hz | | |
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 32 | 35 | 40 | 43 |
| 5 | 1.18 | 1.32 | 1.43 | 1.52 | 1.58 | 1.64 | 1.68 |
| 10 | 1.11 | 1.25 | 1.37 | 1.46 | 1.53 | 1.58 | 1.62 |
| 15 | 1.02 | 1.16 | 1.28 | 1.37 | 1.45 | 1.49 | 1.54 |
| 18 | 0.97 | 1.11 | 1.22 | 1.32 | 1.39 | 1.44 | 1.49 |



## Performance curves of 9KW R290 Full inverter Heating&Cooling Heat Pump

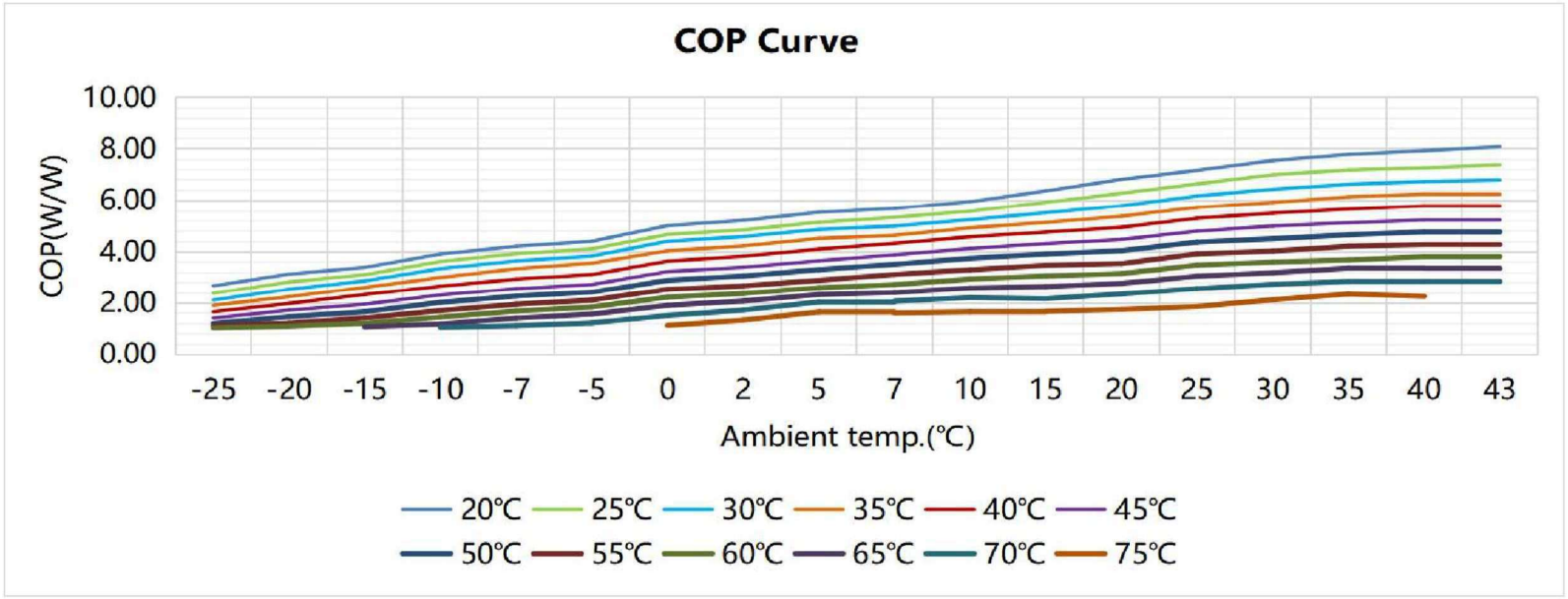
### Heating Capacity (kW)

| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 4.20 | 5.04 | 5.57 | 6.53 | 7.12 | 7.51 | 8.61 | 9.02 | 9.09 | 9.51 | 10.15 | 10.39 | 11.22 | 11.92 | 12.67 | 12.38 | 12.80 | 12.94 |
| 25℃ | 3.88 | 4.72 | 5.30 | 6.27 | 6.87 | 7.27 | 8.31 | 8.69 | 8.76 | 9.23 | 9.94 | 10.15 | 10.91 | 11.67 | 12.44 | 12.12 | 12.44 | 12.62 |
| 30℃ | 3.54 | 4.38 | 5.05 | 5.98 | 6.59 | 6.99 | 8.09 | 8.48 | 8.55 | 9.05 | 9.78 | 9.91 | 10.60 | 11.48 | 12.13 | 11.86 | 12.23 | 12.38 |
| 35℃ | 3.36 | 4.06 | 4.83 | 5.63 | 6.33 | 6.80 | 7.77 | 8.18 | 8.32 | 8.81 | 9.64 | 9.69 | 10.36 | 11.24 | 11.82 | 11.67 | 12.04 | 12.17 |
| 40℃ | 3.13 | 3.84 | 4.60 | 5.34 | 5.96 | 6.37 | 7.48 | 7.92 | 8.07 | 8.59 | 9.37 | 9.44 | 10.05 | 11.00 | 11.61 | 11.40 | 11.82 | 11.95 |
| 45℃ | 2.92 | 3.63 | 4.20 | 5.05 | 5.66 | 6.08 | 7.24 | 7.64 | 7.80 | 8.33 | 9.12 | 9.24 | 9.83 | 10.76 | 11.42 | 11.15 | 11.56 | 11.71 |
| 50℃ | 2.68 | 3.34 | 3.85 | 4.75 | 5.39 | 5.81 | 6.97 | 7.40 | 7.60 | 8.14 | 8.94 | 9.05 | 9.58 | 10.59 | 11.11 | 10.95 | 11.38 | 11.49 |
| 55℃ | 2.60 | 3.05 | 3.62 | 4.40 | 5.08 | 5.54 | 6.70 | 7.10 | 7.29 | 7.98 | 8.65 | 8.82 | 9.22 | 10.42 | 10.91 | 10.88 | 11.21 | 11.33 |
| 60℃ | 2.42 | 2.75 | 3.21 | 3.89 | 4.56 | 5.01 | 6.08 | 6.52 | 7.19 | 7.25 | 7.98 | 8.55 | 8.46 | 9.54 | 10.05 | 10.45 | 10.25 | 10.36 |
| 65°C | | | 2.88 | 3.27 | 3.95 | 4.41 | 5.38 | 5.88 | 6.63 | 7.07 | 7.72 | 7.62 | 8.18 | 9.19 | 9.77 | 9.79 | 9.92 | 10.03 |
| 70°C | | | | 2.97 | 3.42 | 3.78 | 4.69 | 5.36 | 6.35 | 5.86 | 6.32 | 6.38 | 7.11 | 7.36 | 8.00 | 8.46 | 7.27 | 7.37 |
| 75°C | | | | | | | 3.59 | 4.27 | 5.30 | 5.41 | 5.22 | 5.43 | 4.98 | 5.41 | 6.29 | 5.89 | 5.75 | |



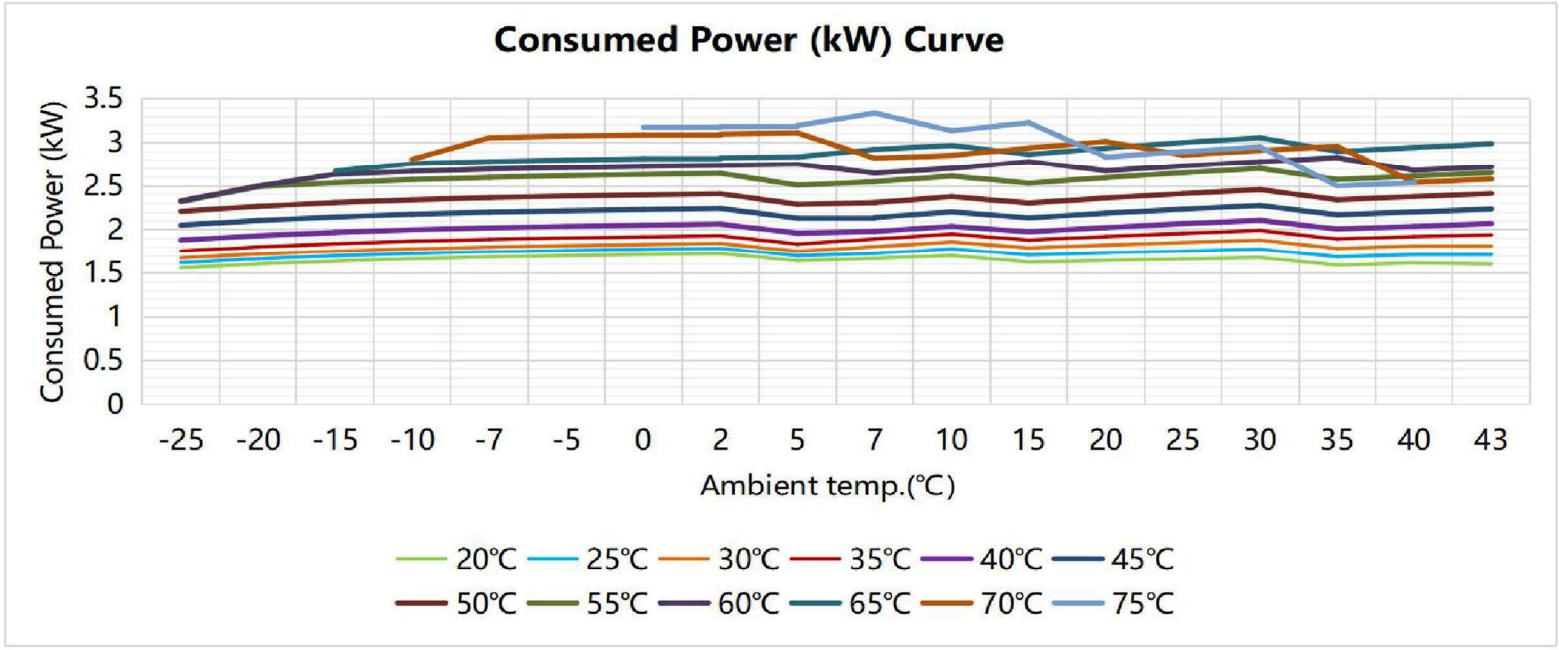
COP (kW/kW)

| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 2.69 | 3.14 | 3.40 | 3.92 | 4.23 | 4.42 | 5.02 | 5.23 | 5.54 | 5.70 | 5.97 | 6.39 | 6.83 | 7.18 | 7.55 | 7.79 | 7.93 | 8.08 |
| 25℃ | 2.39 | 2.84 | 3.12 | 3.63 | 3.94 | 4.13 | 4.68 | 4.86 | 5.16 | 5.35 | 5.59 | 5.95 | 6.30 | 6.65 | 7.01 | 7.19 | 7.27 | 7.39 |
| 30℃ | 2.12 | 2.55 | 2.88 | 3.36 | 3.66 | 3.84 | 4.42 | 4.60 | 4.88 | 5.01 | 5.26 | 5.53 | 5.81 | 6.19 | 6.45 | 6.64 | 6.74 | 6.80 |
| 35℃ | 1.91 | 2.25 | 2.63 | 3.01 | 3.35 | 3.57 | 4.05 | 4.24 | 4.53 | 4.65 | 4.94 | 5.15 | 5.39 | 5.74 | 5.94 | 6.16 | 6.26 | 6.27 |
| 40℃ | 1.67 | 1.99 | 2.34 | 2.67 | 2.95 | 3.13 | 3.65 | 3.84 | 4.12 | 4.34 | 4.60 | 4.78 | 4.96 | 5.32 | 5.51 | 5.67 | 5.80 | 5.78 |
| 45℃ | 1.42 | 1.73 | 1.96 | 2.32 | 2.57 | 2.74 | 3.24 | 3.41 | 3.66 | 3.89 | 4.14 | 4.33 | 4.49 | 4.81 | 5.01 | 5.14 | 5.25 | 5.23 |
| 50℃ | 1.21 | 1.47 | 1.67 | 2.03 | 2.28 | 2.43 | 2.90 | 3.07 | 3.32 | 3.52 | 3.76 | 3.92 | 4.05 | 4.39 | 4.52 | 4.67 | 4.78 | 4.76 |
| 55℃ | 1.12 | 1.22 | 1.43 | 1.71 | 1.96 | 2.12 | 2.55 | 2.69 | 2.90 | 3.13 | 3.31 | 3.48 | 3.55 | 3.93 | 4.04 | 4.23 | 4.29 | 4.27 |
| 60℃ | 1.04 | 1.10 | 1.22 | 1.46 | 1.69 | 1.85 | 2.23 | 2.38 | 2.61 | 2.74 | 2.95 | 3.07 | 3.16 | 3.49 | 3.61 | 3.70 | 3.82 | 3.81 |
| 65°C | | | 1.08 | 1.19 | 1.42 | 1.57 | 1.91 | 2.08 | 2.34 | 2.42 | 2.60 | 2.66 | 2.78 | 3.06 | 3.20 | 3.38 | 3.37 | 3.36 |
| 70°C | | | | 1.06 | 1.12 | 1.23 | 1.52 | 1.73 | 2.04 | 2.08 | 2.21 | 2.17 | 2.36 | 2.58 | 2.75 | 2.86 | 2.86 | 2.86 |
| 75°C | | | | | | | 1.13 | 1.34 | 1.66 | 1.62 | 1.66 | 1.68 | 1.75 | 1.87 | 2.13 | 2.35 | 2.27 | |

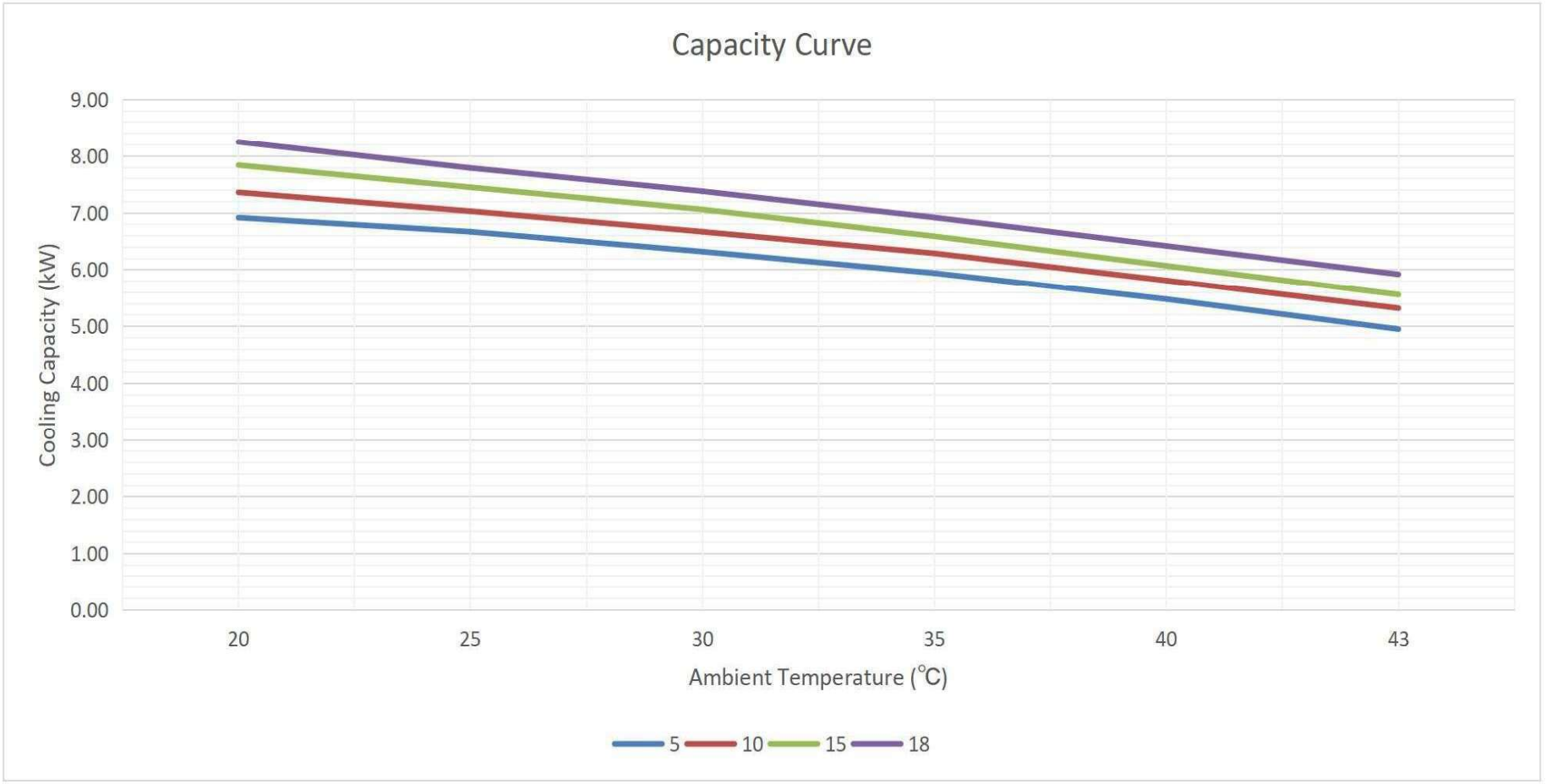


**Consumed Power (kW)**

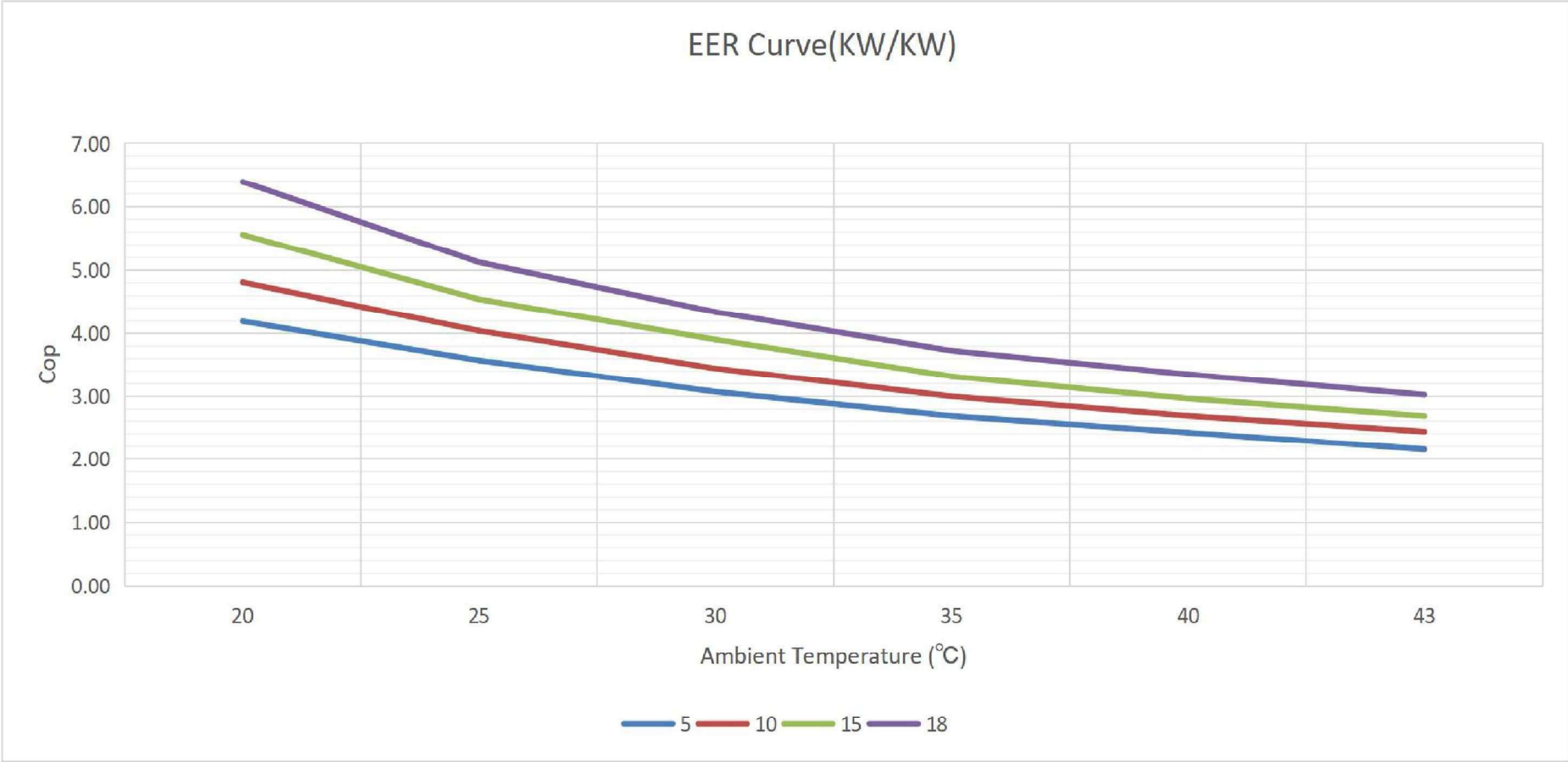
| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 1.56 | 1.60 | 1.64 | 1.66 | 1.68 | 1.70 | 1.71 | 1.72 | 1.64 | 1.67 | 1.70 | 1.63 | 1.64 | 1.66 | 1.68 | 1.59 | 1.61 | 1.60 |
| 25℃ | 1.62 | 1.66 | 1.70 | 1.72 | 1.75 | 1.76 | 1.78 | 1.79 | 1.70 | 1.73 | 1.78 | 1.71 | 1.73 | 1.75 | 1.78 | 1.69 | 1.71 | 1.71 |
| 30℃ | 1.67 | 1.72 | 1.75 | 1.78 | 1.80 | 1.82 | 1.83 | 1.84 | 1.75 | 1.81 | 1.86 | 1.79 | 1.82 | 1.85 | 1.88 | 1.79 | 1.81 | 1.82 |
| 35℃ | 1.76 | 1.80 | 1.84 | 1.87 | 1.89 | 1.91 | 1.92 | 1.93 | 1.84 | 1.89 | 1.95 | 1.88 | 1.92 | 1.96 | 1.99 | 1.89 | 1.92 | 1.94 |
| 40℃ | 1.88 | 1.93 | 1.97 | 2.00 | 2.02 | 2.04 | 2.05 | 2.06 | 1.96 | 1.98 | 2.04 | 1.98 | 2.03 | 2.07 | 2.11 | 2.01 | 2.04 | 2.07 |
| 45℃ | 2.05 | 2.11 | 2.15 | 2.18 | 2.20 | 2.22 | 2.23 | 2.24 | 2.13 | 2.14 | 2.20 | 2.14 | 2.19 | 2.24 | 2.28 | 2.17 | 2.20 | 2.24 |
| 50℃ | 2.21 | 2.27 | 2.31 | 2.34 | 2.37 | 2.39 | 2.40 | 2.41 | 2.29 | 2.31 | 2.38 | 2.31 | 2.36 | 2.41 | 2.46 | 2.34 | 2.38 | 2.41 |
| 55℃ | 2.32 | 2.49 | 2.54 | 2.57 | 2.60 | 2.62 | 2.63 | 2.64 | 2.51 | 2.55 | 2.61 | 2.53 | 2.60 | 2.65 | 2.70 | 2.57 | 2.61 | 2.65 |
| 60℃ | 2.33 | 2.50 | 2.63 | 2.67 | 2.69 | 2.71 | 2.73 | 2.74 | 2.75 | 2.65 | 2.70 | 2.78 | 2.67 | 2.73 | 2.78 | 2.83 | 2.68 | 2.72 |
| 65°C | | | 2.67 | 2.76 | 2.78 | 2.80 | 2.82 | 2.83 | 2.84 | 2.92 | 2.97 | 2.87 | 2.94 | 3.00 | 3.06 | 2.90 | 2.94 | 2.99 |
| 70°C | | | | 2.81 | 3.06 | 3.07 | 3.09 | 3.10 | 3.11 | 2.82 | 2.85 | 2.94 | 3.01 | 2.86 | 2.91 | 2.96 | 2.54 | 2.58 |
| 75°C | | | | | | | 3.18 | 3.19 | 3.20 | 3.34 | 3.14 | 3.23 | 2.84 | 2.90 | 2.95 | 2.50 | 2.54 | |



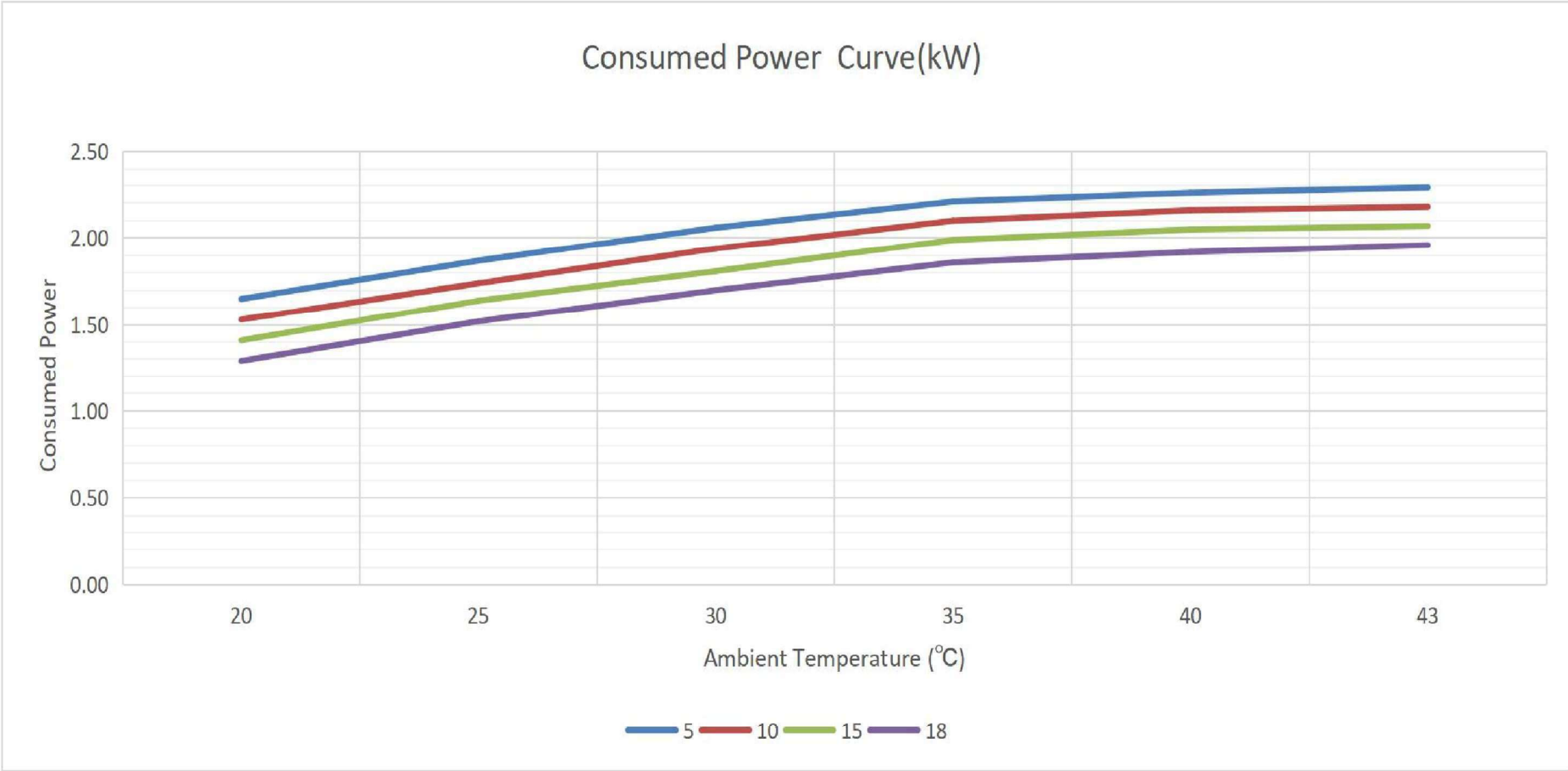
| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 6.92 | 6.67 | 6.32 | 5.94 | 5.48 | 4.95 |
| 10 | 7.36 | 7.03 | 6.67 | 6.29 | 5.81 | 5.32 |
| 15 | 7.84 | 7.45 | 7.06 | 6.59 | 6.07 | 5.56 |
| 18 | 8.25 | 7.79 | 7.38 | 6.92 | 6.42 | 5.92 |



| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 4.19 | 3.57 | 3.07 | 2.69 | 2.42 | 2.16 |
| 10 | 4.81 | 4.04 | 3.44 | 3.00 | 2.69 | 2.44 |
| 15 | 5.56 | 4.54 | 3.90 | 3.31 | 2.96 | 2.69 |
| 18 | 6.40 | 5.13 | 4.34 | 3.72 | 3.34 | 3.02 |



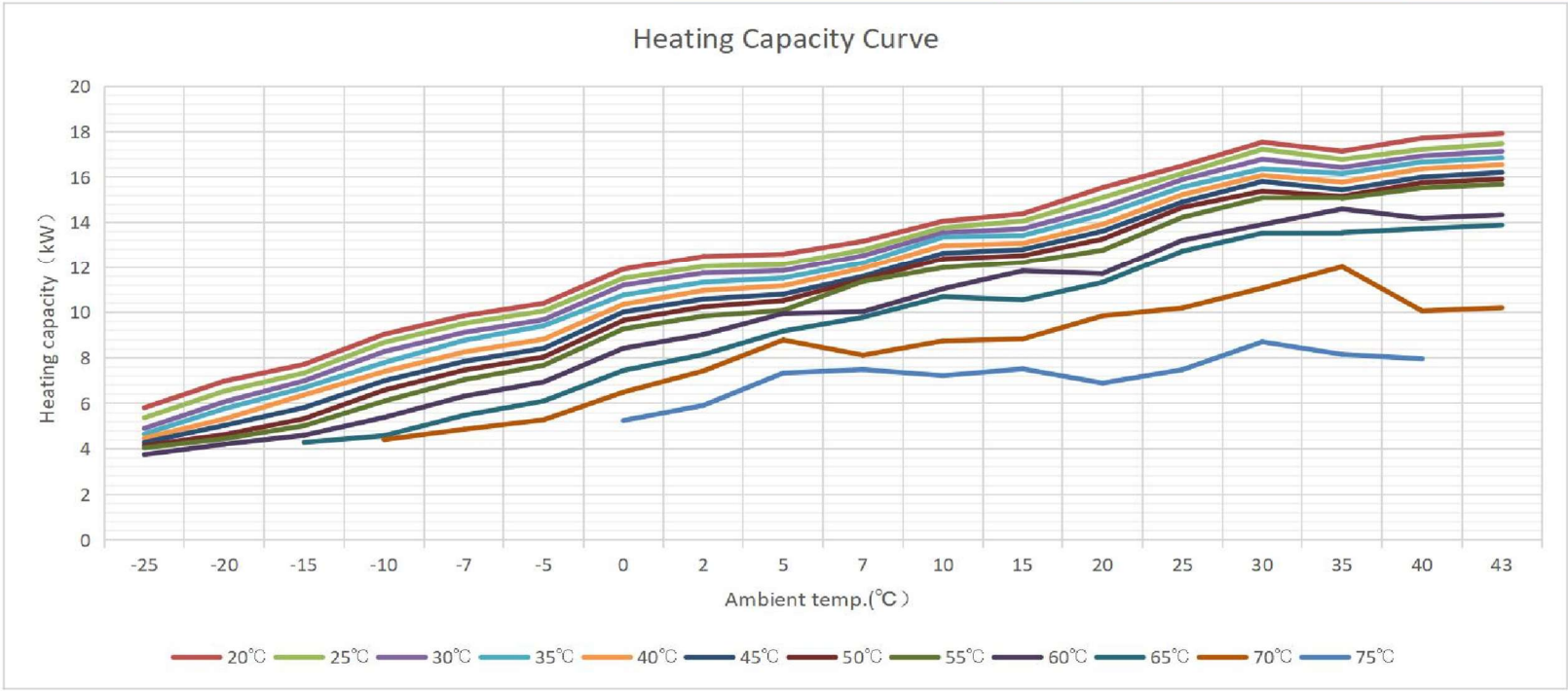
| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 1.65 | 1.87 | 2.06 | 2.21 | 2.26 | 2.29 |
| 10 | 1.53 | 1.74 | 1.94 | 2.10 | 2.16 | 2.18 |
| 15 | 1.41 | 1.64 | 1.81 | 1.99 | 2.05 | 2.07 |
| 18 | 1.29 | 1.52 | 1.70 | 1.86 | 1.92 | 1.96 |



## Performance curves of 13KW R290 Full inverter Heating&Cooling Heat Pump

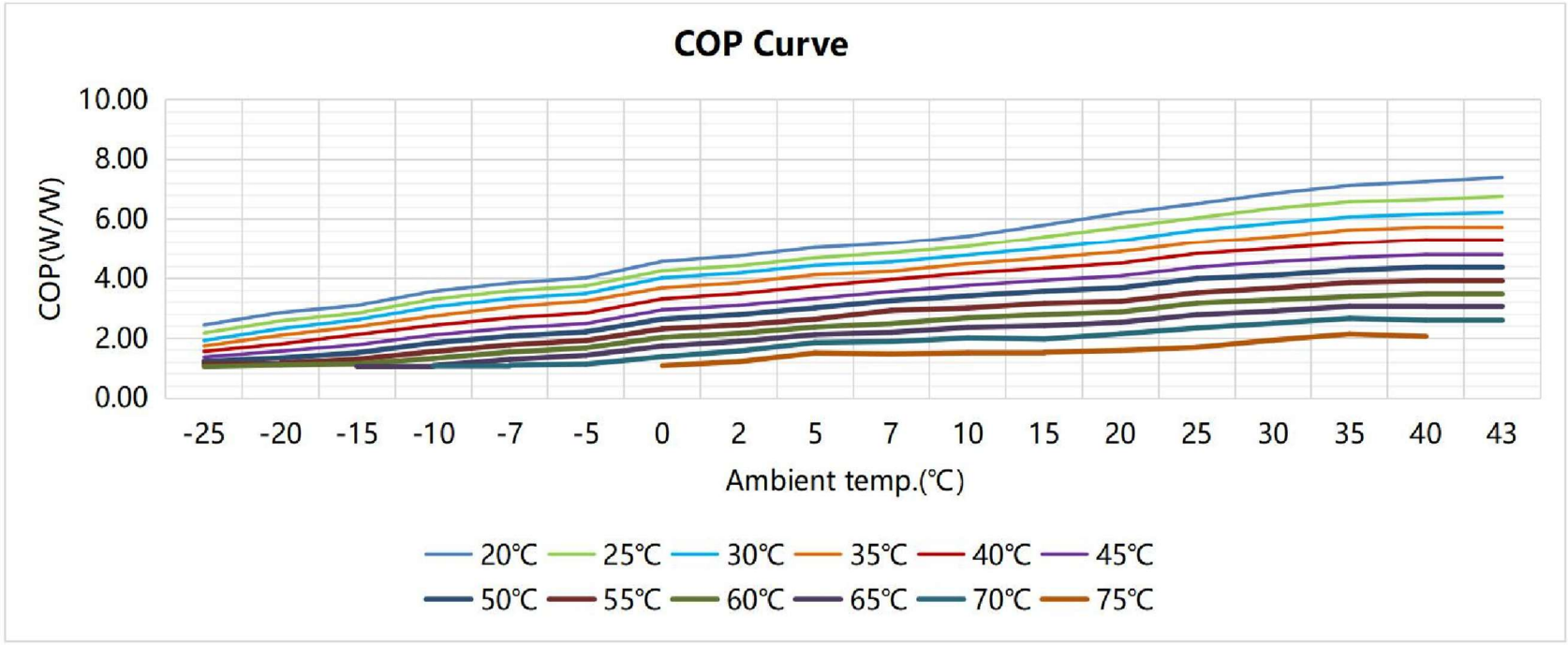
### Heating Capacity (kW)

| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (°C) / Outlet (°C) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 5.81 | 6.98 | 7.72 | 9.04 | 9.85 | 10.40 | 11.92 | 12.49 | 12.59 | 13.17 | 14.06 | 14.39 | 15.54 | 16.50 | 17.54 | 17.15 | 17.72 | 17.92 |
| 25℃ | 5.37 | 6.54 | 7.34 | 8.68 | 9.52 | 10.06 | 11.51 | 12.04 | 12.13 | 12.78 | 13.77 | 14.06 | 15.10 | 16.17 | 17.23 | 16.79 | 17.23 | 17.48 |
| 30℃ | 4.90 | 6.07 | 6.99 | 8.27 | 9.12 | 9.68 | 11.21 | 11.74 | 11.85 | 12.53 | 13.55 | 13.72 | 14.67 | 15.90 | 16.79 | 16.43 | 16.94 | 17.14 |
| 35℃ | 4.66 | 5.77 | 6.69 | 7.79 | 8.77 | 9.42 | 10.77 | 11.33 | 11.52 | 12.20 | 13.35 | 13.43 | 14.35 | 15.57 | 16.37 | 16.16 | 16.67 | 16.85 |
| 40℃ | 4.48 | 5.31 | 6.37 | 7.40 | 8.25 | 8.83 | 10.36 | 10.97 | 11.18 | 11.96 | 12.98 | 13.07 | 13.92 | 15.23 | 16.08 | 15.78 | 16.37 | 16.55 |
| 45℃ | 4.29 | 5.03 | 5.82 | 6.99 | 7.84 | 8.42 | 10.02 | 10.59 | 10.81 | 11.60 | 12.63 | 12.80 | 13.61 | 14.91 | 15.81 | 15.44 | 16.01 | 16.21 |
| 50℃ | 4.15 | 4.63 | 5.33 | 6.58 | 7.46 | 8.04 | 9.65 | 10.25 | 10.52 | 11.46 | 12.38 | 12.53 | 13.27 | 14.67 | 15.38 | 15.16 | 15.76 | 15.92 |
| 55℃ | 4.05 | 4.45 | 5.02 | 6.10 | 7.04 | 7.68 | 9.28 | 9.84 | 10.09 | 11.37 | 11.98 | 12.22 | 12.77 | 14.23 | 15.09 | 15.06 | 15.53 | 15.69 |
| 60℃ | 3.75 | 4.21 | 4.60 | 5.38 | 6.31 | 6.94 | 8.43 | 9.03 | 9.95 | 10.04 | 11.04 | 11.83 | 11.71 | 13.21 | 13.91 | 14.60 | 14.19 | 14.34 |
| 65°C | | | 4.29 | 4.58 | 5.47 | 6.10 | 7.45 | 8.15 | 9.18 | 9.79 | 10.70 | 10.55 | 11.33 | 12.73 | 13.53 | 13.56 | 13.73 | 13.89 |
| 70°C | | | | 4.41 | 4.86 | 5.28 | 6.50 | 7.43 | 8.79 | 8.12 | 8.75 | 8.84 | 9.85 | 10.20 | 11.07 | 12.02 | 10.07 | 10.20 |
| 75°C | | | | | | | 5.25 | 5.91 | 7.34 | 7.49 | 7.22 | 7.52 | 6.89 | 7.49 | 8.71 | 8.15 | 7.96 | |



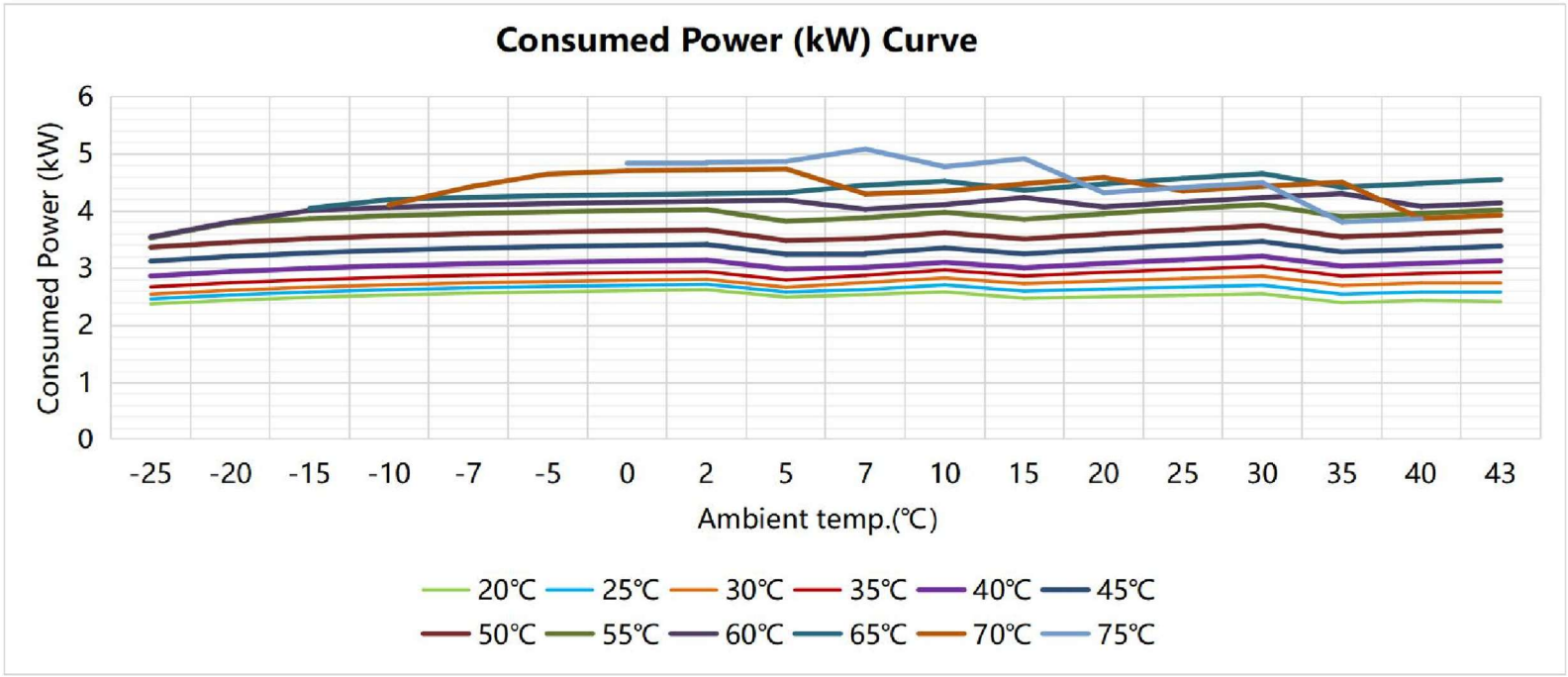
COP (kW/kW)

| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 2.44 | 2.86 | 3.09 | 3.57 | 3.84 | 4.02 | 4.57 | 4.75 | 5.04 | 5.18 | 5.43 | 5.80 | 6.20 | 6.52 | 6.86 | 7.13 | 7.26 | 7.40 |
| 25℃ | 2.18 | 2.58 | 2.84 | 3.30 | 3.58 | 3.75 | 4.26 | 4.42 | 4.69 | 4.86 | 5.08 | 5.40 | 5.72 | 6.05 | 6.37 | 6.59 | 6.66 | 6.77 |
| 30℃ | 1.92 | 2.32 | 2.62 | 3.05 | 3.32 | 3.49 | 4.02 | 4.18 | 4.44 | 4.55 | 4.78 | 5.02 | 5.28 | 5.63 | 5.86 | 6.08 | 6.17 | 6.22 |
| 35℃ | 1.74 | 2.10 | 2.39 | 2.74 | 3.05 | 3.24 | 3.68 | 3.85 | 4.12 | 4.24 | 4.49 | 4.68 | 4.90 | 5.22 | 5.40 | 5.64 | 5.73 | 5.74 |
| 40℃ | 1.56 | 1.81 | 2.12 | 2.43 | 2.68 | 2.84 | 3.31 | 3.49 | 3.74 | 3.96 | 4.18 | 4.34 | 4.51 | 4.83 | 5.01 | 5.19 | 5.30 | 5.28 |
| 45℃ | 1.37 | 1.57 | 1.78 | 2.11 | 2.34 | 2.49 | 2.95 | 3.10 | 3.33 | 3.56 | 3.76 | 3.93 | 4.08 | 4.37 | 4.56 | 4.70 | 4.80 | 4.78 |
| 50℃ | 1.23 | 1.34 | 1.51 | 1.84 | 2.07 | 2.21 | 2.64 | 2.79 | 3.01 | 3.26 | 3.42 | 3.57 | 3.68 | 3.99 | 4.11 | 4.27 | 4.37 | 4.35 |
| 55℃ | 1.15 | 1.17 | 1.30 | 1.56 | 1.78 | 1.92 | 2.31 | 2.44 | 2.64 | 2.93 | 3.01 | 3.17 | 3.23 | 3.52 | 3.67 | 3.86 | 3.92 | 3.90 |
| 60℃ | 1.06 | 1.11 | 1.15 | 1.32 | 1.54 | 1.68 | 2.03 | 2.16 | 2.37 | 2.49 | 2.68 | 2.79 | 2.87 | 3.17 | 3.28 | 3.39 | 3.47 | 3.46 |
| 65℃ | | | 1.06 | 1.09 | 1.29 | 1.43 | 1.74 | 1.89 | 2.12 | 2.20 | 2.36 | 2.42 | 2.53 | 2.78 | 2.91 | 3.07 | 3.06 | 3.05 |
| 70℃ | | | | 1.07 | 1.10 | 1.14 | 1.38 | 1.57 | 1.85 | 1.89 | 2.01 | 1.97 | 2.15 | 2.34 | 2.50 | 2.67 | 2.60 | 2.60 |
| 75℃ | | | | | | | 1.08 | 1.22 | 1.51 | 1.47 | 1.51 | 1.53 | 1.59 | 1.70 | 1.94 | 2.14 | 2.06 | |

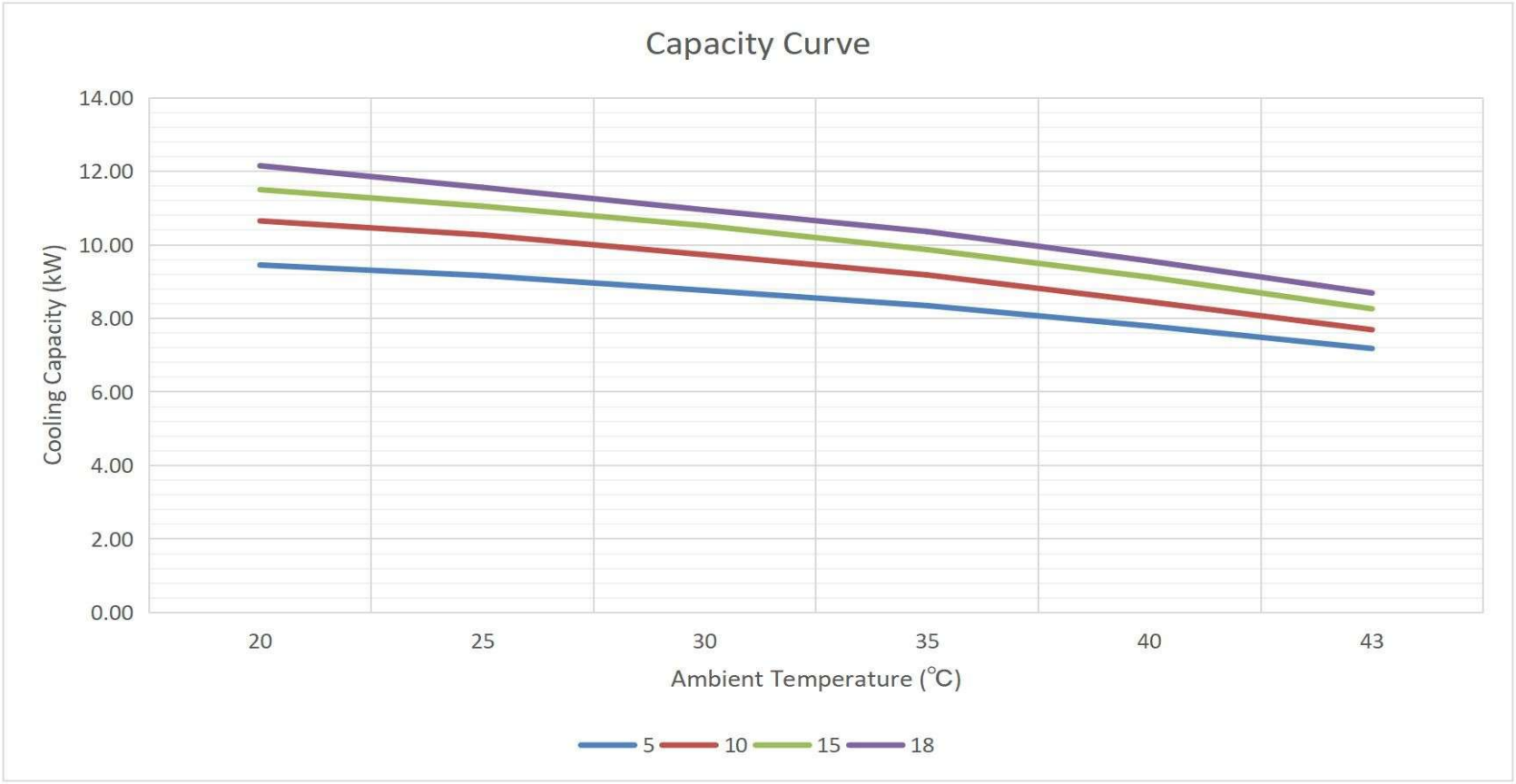


**Consumed Power (kW)**

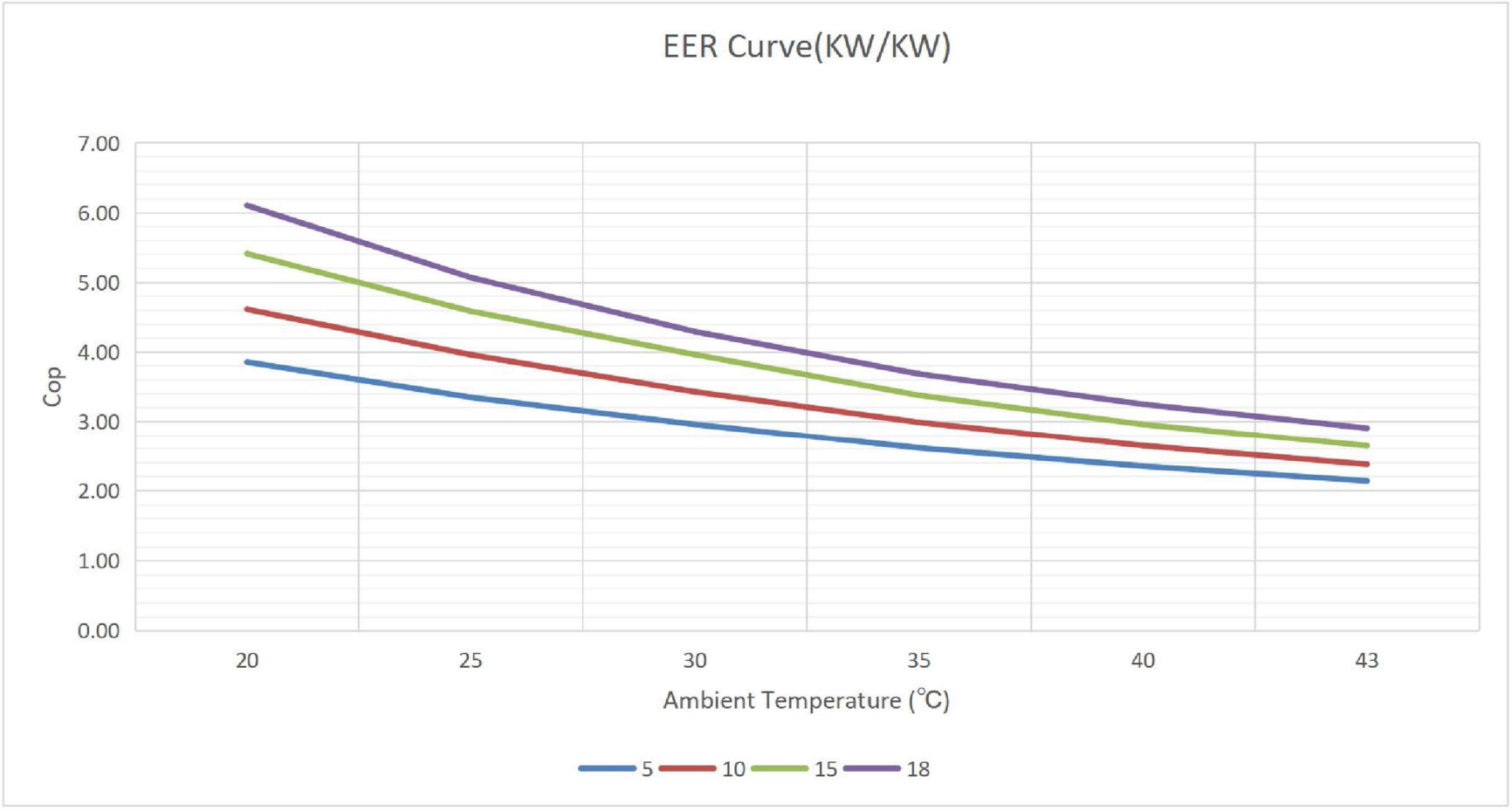
| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 2.38 | 2.44 | 2.49 | 2.53 | 2.57 | 2.59 | 2.61 | 2.63 | 2.50 | 2.54 | 2.59 | 2.48 | 2.51 | 2.53 | 2.56 | 2.40 | 2.44 | 2.42 |
| 25℃ | 2.47 | 2.53 | 2.59 | 2.63 | 2.66 | 2.68 | 2.70 | 2.72 | 2.59 | 2.63 | 2.71 | 2.60 | 2.64 | 2.67 | 2.71 | 2.55 | 2.59 | 2.58 |
| 30℃ | 2.55 | 2.62 | 2.67 | 2.71 | 2.75 | 2.77 | 2.79 | 2.81 | 2.67 | 2.75 | 2.83 | 2.73 | 2.78 | 2.82 | 2.87 | 2.70 | 2.74 | 2.75 |
| 35℃ | 2.68 | 2.75 | 2.80 | 2.85 | 2.88 | 2.90 | 2.93 | 2.94 | 2.80 | 2.88 | 2.97 | 2.87 | 2.93 | 2.98 | 3.03 | 2.87 | 2.91 | 2.94 |
| 40℃ | 2.87 | 2.94 | 3.00 | 3.05 | 3.08 | 3.11 | 3.13 | 3.15 | 2.99 | 3.02 | 3.11 | 3.01 | 3.09 | 3.15 | 3.21 | 3.04 | 3.09 | 3.13 |
| 45℃ | 3.13 | 3.21 | 3.27 | 3.32 | 3.35 | 3.38 | 3.40 | 3.42 | 3.25 | 3.26 | 3.36 | 3.25 | 3.34 | 3.41 | 3.47 | 3.29 | 3.34 | 3.39 |
| 50℃ | 3.37 | 3.45 | 3.52 | 3.57 | 3.61 | 3.63 | 3.66 | 3.68 | 3.49 | 3.52 | 3.62 | 3.51 | 3.60 | 3.68 | 3.75 | 3.55 | 3.60 | 3.66 |
| 55℃ | 3.54 | 3.80 | 3.87 | 3.92 | 3.96 | 3.99 | 4.01 | 4.03 | 3.82 | 3.88 | 3.98 | 3.86 | 3.96 | 4.04 | 4.12 | 3.90 | 3.96 | 4.02 |
| 60℃ | 3.55 | 3.81 | 4.01 | 4.07 | 4.11 | 4.13 | 4.16 | 4.17 | 4.19 | 4.04 | 4.12 | 4.24 | 4.07 | 4.16 | 4.24 | 4.31 | 4.08 | 4.14 |
| 65°C | | | 4.05 | 4.20 | 4.24 | 4.27 | 4.29 | 4.31 | 4.32 | 4.45 | 4.52 | 4.37 | 4.48 | 4.57 | 4.66 | 4.42 | 4.49 | 4.55 |
| 70°C | | | | 4.11 | 4.42 | 4.65 | 4.71 | 4.72 | 4.74 | 4.30 | 4.35 | 4.48 | 4.59 | 4.35 | 4.43 | 4.51 | 3.87 | 3.93 |
| 75°C | | | | | | | 4.84 | 4.85 | 4.87 | 5.09 | 4.78 | 4.92 | 4.32 | 4.42 | 4.50 | 3.81 | 3.87 | |



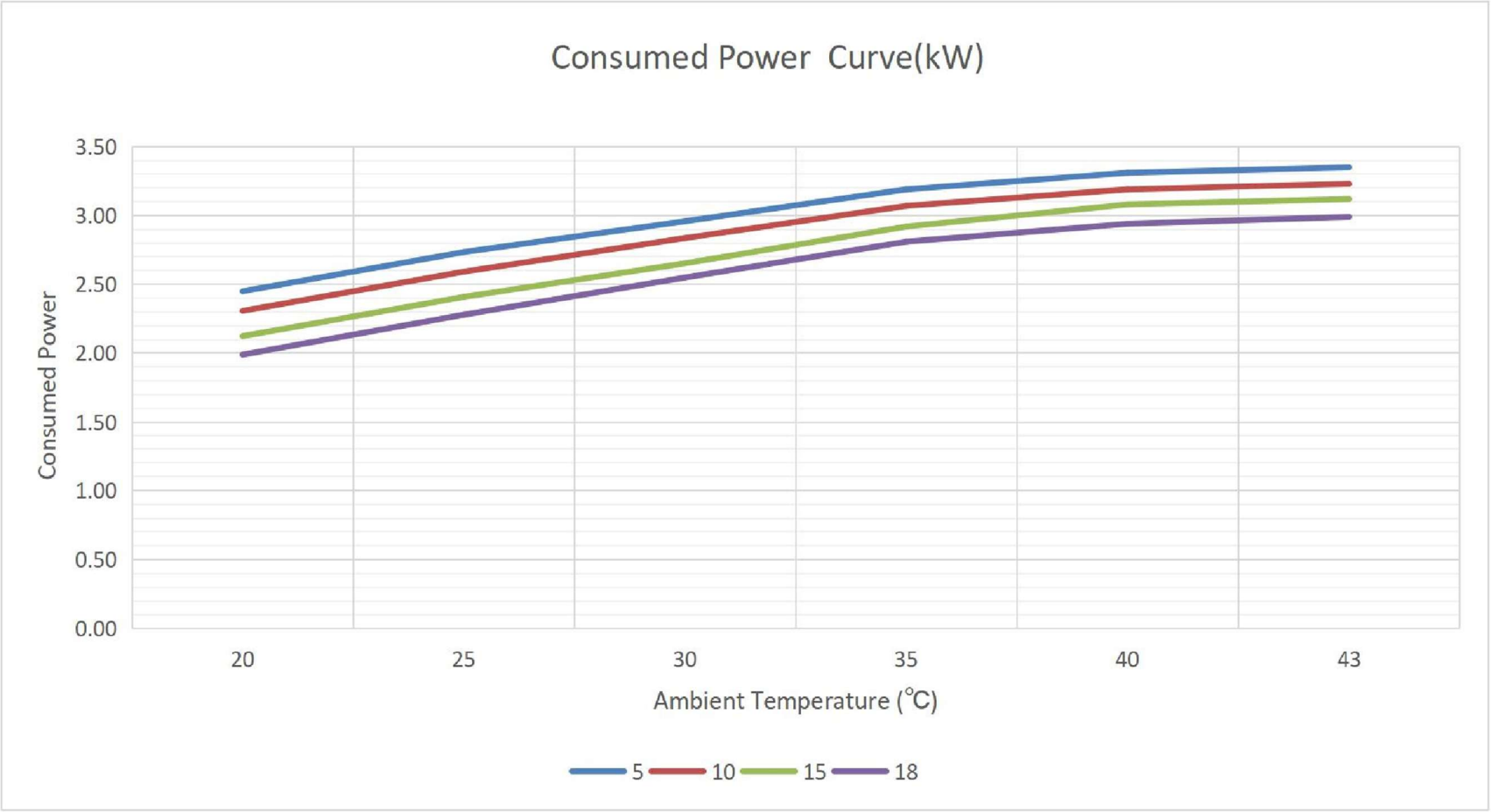
| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 9.45 | 9.16 | 8.76 | 8.35 | 7.79 | 7.18 |
| 10 | 10.65 | 10.27 | 9.73 | 9.18 | 8.45 | 7.69 |
| 15 | 11.50 | 11.05 | 10.52 | 9.87 | 9.12 | 8.26 |
| 18 | 12.15 | 11.56 | 10.95 | 10.36 | 9.56 | 8.69 |



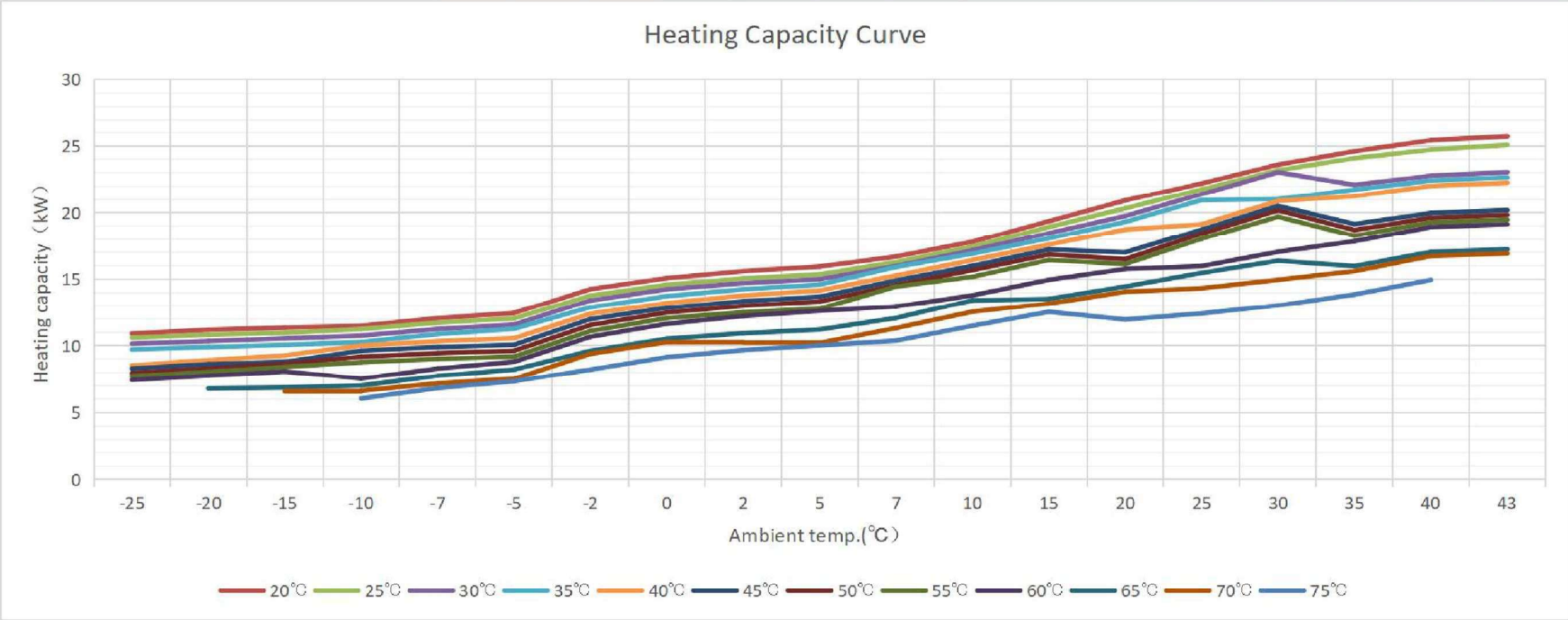
| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 3.86 | 3.35 | 2.96 | 2.62 | 2.35 | 2.14 |
| 10 | 4.62 | 3.96 | 3.43 | 2.99 | 2.65 | 2.38 |
| 15 | 5.41 | 4.59 | 3.96 | 3.38 | 2.96 | 2.65 |
| 18 | 6.11 | 5.07 | 4.29 | 3.69 | 3.25 | 2.91 |



| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 2.45 | 2.73 | 2.96 | 3.19 | 3.31 | 3.35 |
| 10 | 2.31 | 2.59 | 2.84 | 3.07 | 3.19 | 3.23 |
| 15 | 2.12 | 2.41 | 2.65 | 2.92 | 3.08 | 3.12 |
| 18 | 1.99 | 2.28 | 2.55 | 2.81 | 2.94 | 2.99 |

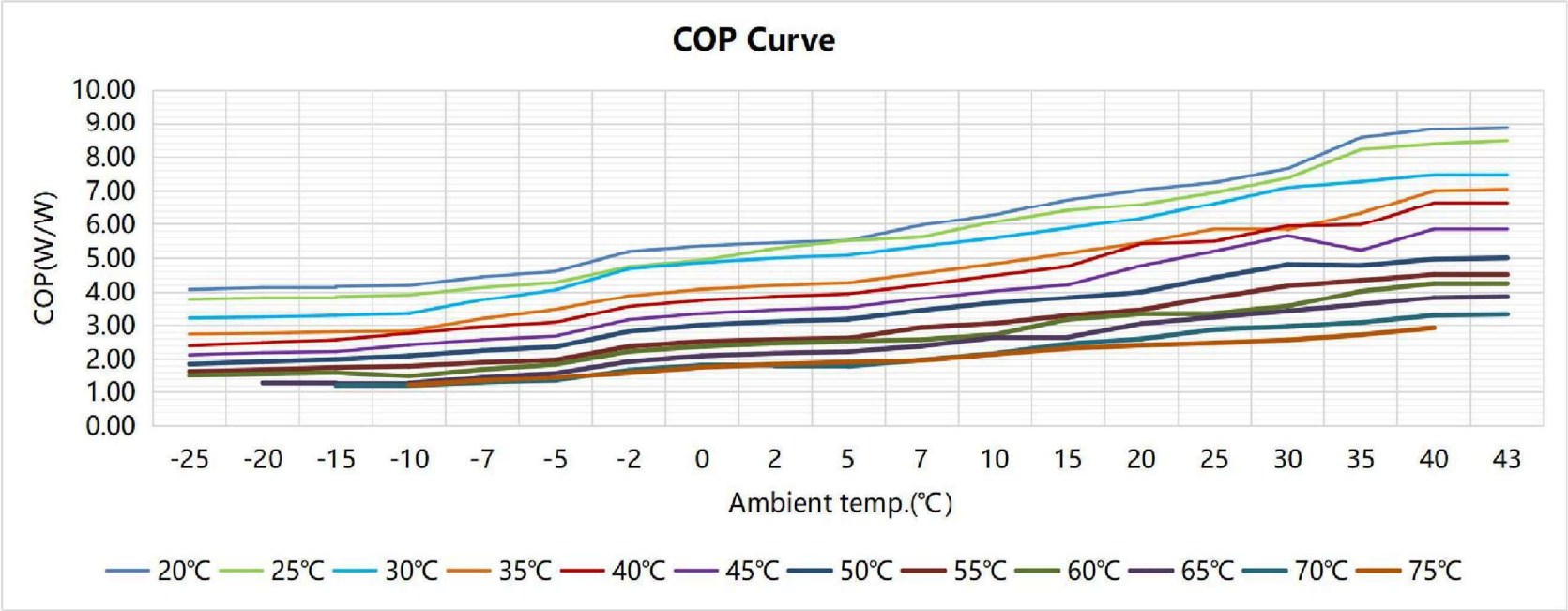


| Performance curves of 16KW R290 Full inverter Heating&Cooling Heat Pump | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Heating Capacity (kW) | | | | | | | | | | | | | | | | | | | | |
| | | 80Hz | | 75Hz | | | 70Hz | | | 65Hz | | 60Hz | | 55Hz | | 50Hz | | | | |
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | -2 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 | |
| 20℃ | 10.91 | 11.19 | 11.35 | 11.48 | 12.06 | 12.44 | 14.25 | 15.08 | 15.60 | 15.95 | 16.69 | 17.80 | 19.36 | 20.91 | 22.21 | 23.61 | 24.61 | 25.44 | 25.73 | |
| 25℃ | 10.60 | 10.82 | 10.96 | 11.24 | 11.72 | 12.04 | 13.77 | 14.58 | 15.05 | 15.36 | 16.28 | 17.44 | 18.92 | 20.32 | 21.75 | 23.19 | 24.09 | 24.73 | 25.09 | |
| 30℃ | 10.15 | 10.34 | 10.54 | 10.75 | 11.25 | 11.58 | 13.41 | 14.25 | 14.70 | 15.00 | 15.98 | 17.16 | 18.46 | 19.75 | 21.39 | 23.04 | 22.10 | 22.78 | 23.05 | |
| 35℃ | 9.71 | 9.89 | 10.06 | 10.27 | 10.87 | 11.26 | 12.88 | 13.73 | 14.25 | 14.59 | 15.92 | 16.91 | 18.07 | 19.31 | 20.95 | 21.01 | 21.74 | 22.42 | 22.66 | |
| 40℃ | 8.52 | 8.91 | 9.27 | 10.01 | 10.34 | 10.56 | 12.39 | 13.21 | 13.78 | 14.15 | 15.27 | 16.44 | 17.59 | 18.73 | 19.13 | 20.88 | 21.23 | 22.02 | 22.26 | |
| 45℃ | 8.29 | 8.61 | 8.79 | 9.62 | 9.89 | 10.07 | 11.99 | 12.84 | 13.35 | 13.69 | 14.90 | 16.00 | 17.23 | 17.01 | 18.73 | 20.51 | 19.15 | 19.97 | 20.19 | |
| 50℃ | 7.95 | 8.29 | 8.65 | 9.17 | 9.44 | 9.62 | 11.54 | 12.48 | 12.99 | 13.32 | 14.56 | 15.68 | 16.86 | 16.50 | 18.42 | 20.17 | 18.70 | 19.61 | 19.83 | |
| 55℃ | 7.71 | 8.03 | 8.41 | 8.76 | 9.01 | 9.18 | 11.10 | 12.07 | 12.49 | 12.78 | 14.45 | 15.18 | 16.44 | 16.14 | 18.03 | 19.69 | 18.27 | 19.27 | 19.48 | |
| 60℃ | 7.42 | 7.73 | 8.07 | 7.52 | 8.29 | 8.79 | 10.67 | 11.64 | 12.22 | 12.61 | 12.94 | 13.79 | 14.95 | 15.77 | 15.98 | 17.05 | 17.84 | 18.92 | 19.14 | |
| 65℃ | | 6.79 | 6.86 | 7.00 | 7.73 | 8.21 | 9.61 | 10.52 | 10.93 | 11.21 | 12.07 | 13.41 | 13.52 | 14.45 | 15.47 | 16.39 | 15.98 | 17.04 | 17.23 | |
| 70℃ | | | 6.58 | 6.62 | 7.16 | 7.51 | 9.39 | 10.27 | 10.23 | 10.21 | 11.32 | 12.54 | 13.17 | 14.06 | 14.32 | 14.95 | 15.61 | 16.74 | 16.93 | |
| 75℃ | | | | 6.05 | 6.81 | 7.32 | 8.21 | 9.14 | 9.67 | 10.02 | 10.38 | 11.49 | 12.53 | 11.96 | 12.41 | 13.02 | 13.86 | 14.95 | | |



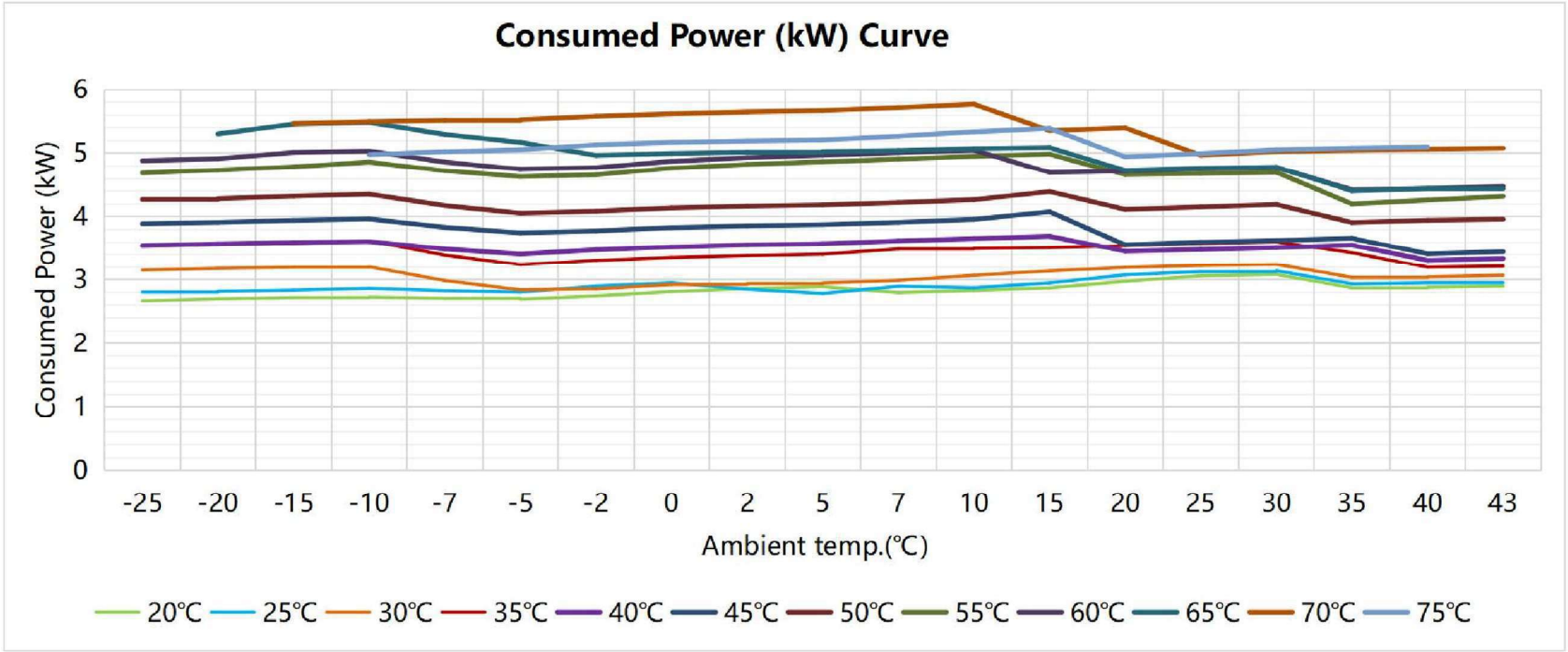
**COP (kW/kW)**

| | | 80Hz | | 75Hz | | | 70Hz | | | 65Hz | | 60Hz | | 55Hz | | 50Hz | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | -2 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 4.09 | 4.15 | 4.17 | 4.21 | 4.45 | 4.62 | 5.19 | 5.36 | 5.45 | 5.52 | 5.97 | 6.29 | 6.74 | 7.03 | 7.25 | 7.66 | 8.56 | 8.82 | 8.87 |
| 25℃ | 3.78 | 3.84 | 3.86 | 3.93 | 4.14 | 4.29 | 4.75 | 4.94 | 5.28 | 5.52 | 5.62 | 6.07 | 6.42 | 6.60 | 6.96 | 7.38 | 8.21 | 8.38 | 8.48 |
| 30℃ | 3.22 | 3.25 | 3.30 | 3.36 | 3.77 | 4.07 | 4.69 | 4.87 | 5.00 | 5.09 | 5.35 | 5.59 | 5.88 | 6.18 | 6.63 | 7.10 | 7.28 | 7.48 | 7.51 |
| 35℃ | 2.75 | 2.77 | 2.81 | 2.84 | 3.20 | 3.48 | 3.89 | 4.09 | 4.21 | 4.28 | 4.56 | 4.83 | 5.14 | 5.45 | 5.85 | 5.83 | 6.34 | 7.01 | 7.05 |
| 40℃ | 2.40 | 2.49 | 2.58 | 2.77 | 2.96 | 3.10 | 3.56 | 3.75 | 3.88 | 3.96 | 4.22 | 4.50 | 4.76 | 5.42 | 5.49 | 5.95 | 5.98 | 6.65 | 6.67 |
| 45℃ | 2.13 | 2.20 | 2.23 | 2.43 | 2.58 | 2.69 | 3.17 | 3.35 | 3.46 | 3.53 | 3.81 | 4.04 | 4.22 | 4.78 | 5.20 | 5.65 | 5.23 | 5.85 | 5.86 |
| 50℃ | 1.86 | 1.94 | 2.00 | 2.11 | 2.26 | 2.37 | 2.83 | 3.02 | 3.12 | 3.18 | 3.45 | 3.67 | 3.84 | 4.01 | 4.43 | 4.81 | 4.78 | 4.97 | 5.01 |
| 55℃ | 1.64 | 1.70 | 1.76 | 1.80 | 1.91 | 1.98 | 2.38 | 2.53 | 2.59 | 2.63 | 2.94 | 3.06 | 3.30 | 3.46 | 3.85 | 4.19 | 4.35 | 4.52 | 4.51 |
| 60℃ | 1.52 | 1.57 | 1.61 | 1.49 | 1.70 | 1.85 | 2.23 | 2.39 | 2.48 | 2.54 | 2.58 | 2.73 | 3.18 | 3.34 | 3.36 | 3.57 | 4.03 | 4.26 | 4.27 |
| 65℃ | | 1.28 | 1.26 | 1.28 | 1.46 | 1.59 | 1.93 | 2.11 | 2.18 | 2.23 | 2.39 | 2.64 | 2.66 | 3.05 | 3.25 | 3.43 | 3.63 | 3.84 | 3.87 |
| 70℃ | | | 1.20 | 1.21 | 1.30 | 1.36 | 1.68 | 1.83 | 1.81 | 1.80 | 1.98 | 2.17 | 2.46 | 2.61 | 2.88 | 2.97 | 3.09 | 3.30 | 3.33 |
| 75℃ | | | | 1.22 | 1.36 | 1.45 | 1.60 | 1.77 | 1.86 | 1.92 | 1.97 | 2.15 | 2.32 | 2.42 | 2.48 | 2.58 | 2.73 | 2.93 | |

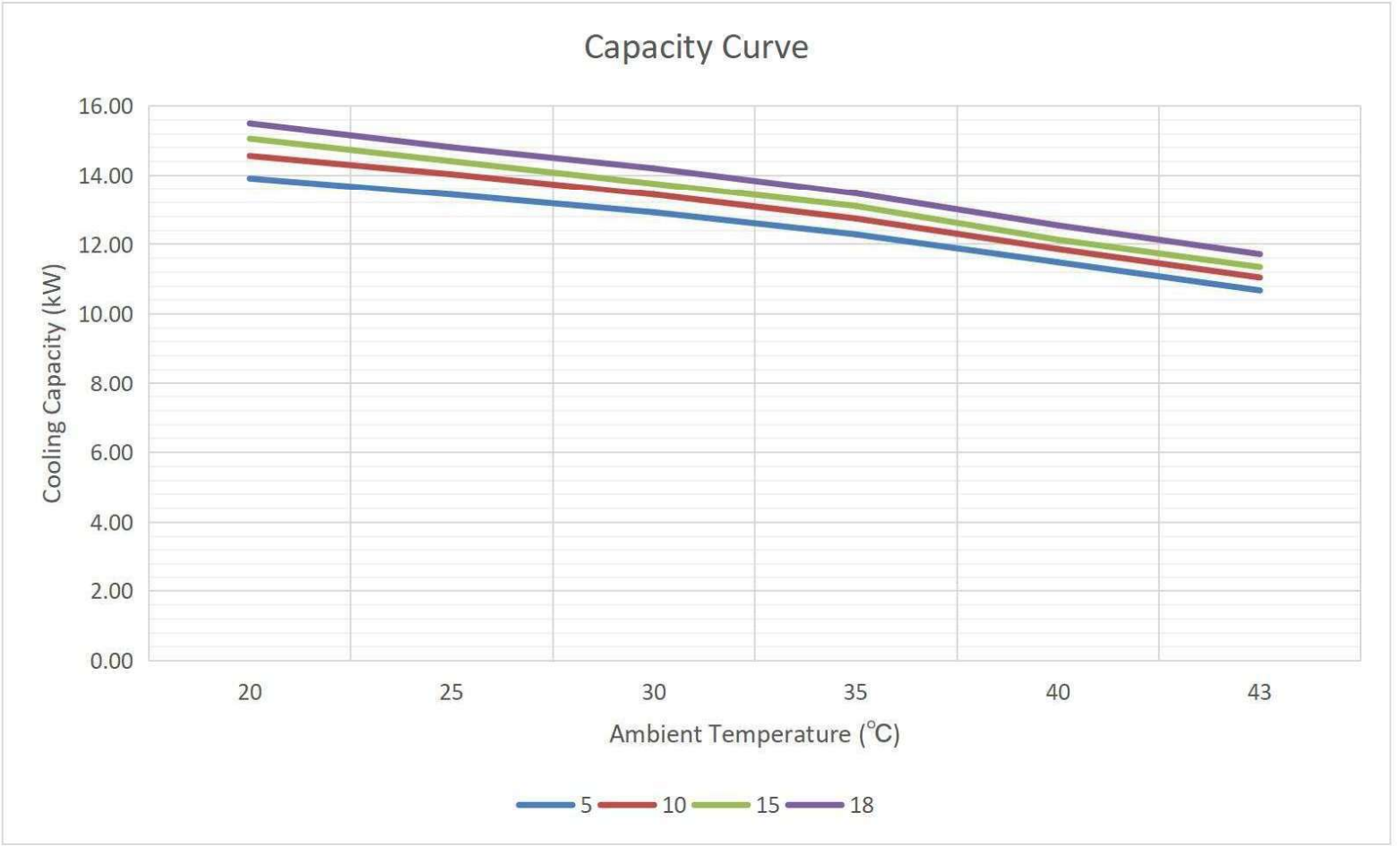


**Consumed Power (kW)**

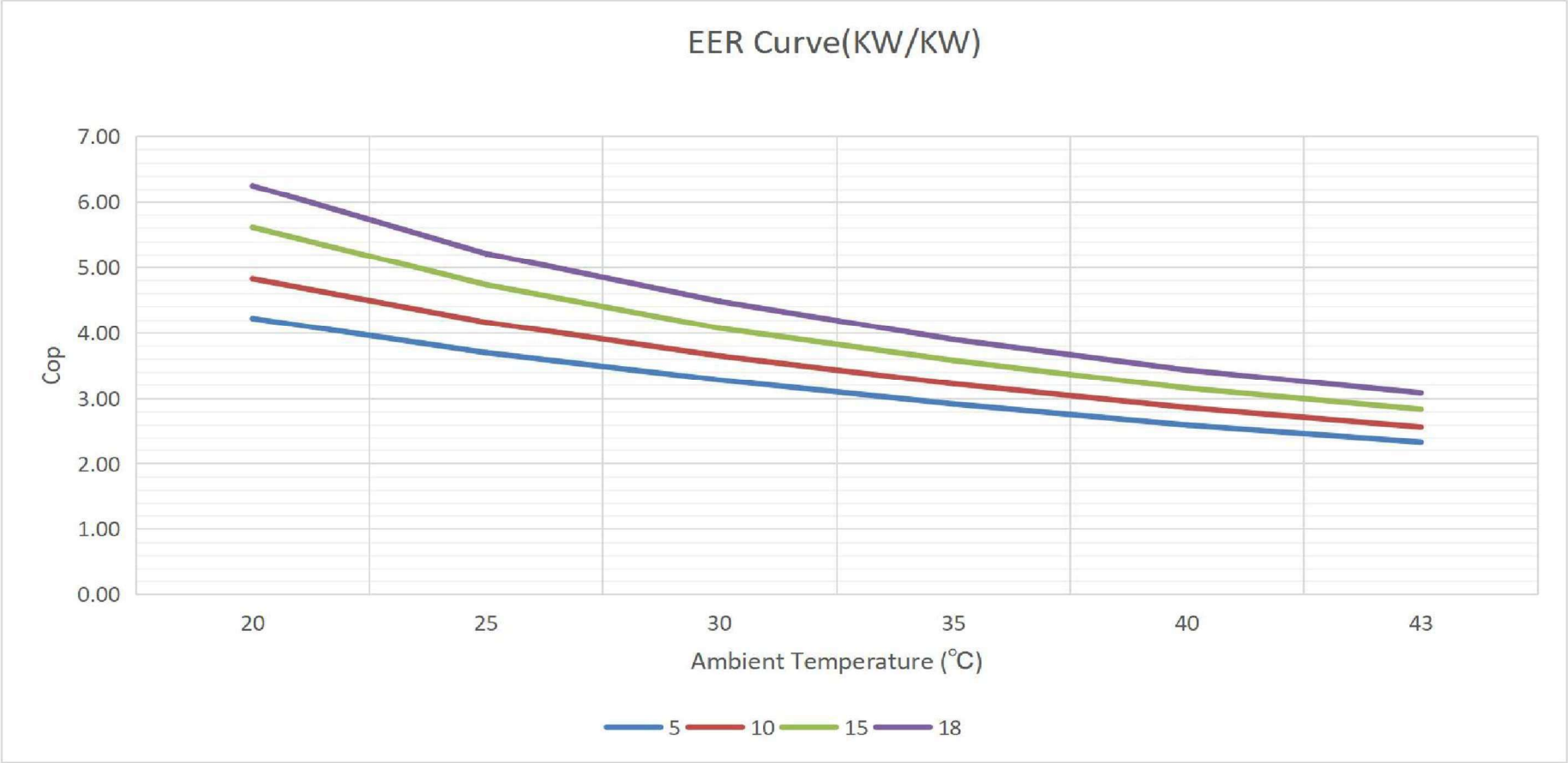
| | | 80Hz | | 75Hz | | | 70Hz | | | 65Hz | | 60Hz | | 55Hz | | 50Hz | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | -2 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 2.67 | 2.70 | 2.72 | 2.73 | 2.71 | 2.69 | 2.75 | 2.81 | 2.86 | 2.89 | 2.80 | 2.83 | 2.87 | 2.97 | 3.06 | 3.08 | 2.87 | 2.88 | 2.90 |
| 25℃ | 2.81 | 2.82 | 2.84 | 2.86 | 2.83 | 2.81 | 2.90 | 2.95 | 2.85 | 2.78 | 2.90 | 2.87 | 2.95 | 3.08 | 3.13 | 3.14 | 2.93 | 2.95 | 2.96 |
| 30℃ | 3.15 | 3.18 | 3.20 | 3.20 | 2.99 | 2.84 | 2.86 | 2.93 | 2.94 | 2.95 | 2.99 | 3.07 | 3.14 | 3.19 | 3.23 | 3.24 | 3.04 | 3.05 | 3.07 |
| 35℃ | 3.54 | 3.57 | 3.58 | 3.62 | 3.39 | 3.24 | 3.31 | 3.35 | 3.39 | 3.41 | 3.49 | 3.50 | 3.51 | 3.54 | 3.58 | 3.60 | 3.43 | 3.20 | 3.22 |
| 40℃ | 3.54 | 3.57 | 3.60 | 3.61 | 3.49 | 3.41 | 3.48 | 3.52 | 3.55 | 3.57 | 3.62 | 3.66 | 3.69 | 3.46 | 3.48 | 3.51 | 3.55 | 3.31 | 3.34 |
| 45℃ | 3.89 | 3.91 | 3.94 | 3.96 | 3.83 | 3.75 | 3.78 | 3.83 | 3.86 | 3.87 | 3.91 | 3.96 | 4.08 | 3.56 | 3.60 | 3.63 | 3.66 | 3.41 | 3.45 |
| 50℃ | 4.27 | 4.28 | 4.32 | 4.35 | 4.17 | 4.06 | 4.09 | 4.14 | 4.17 | 4.18 | 4.22 | 4.27 | 4.39 | 4.11 | 4.15 | 4.19 | 3.91 | 3.94 | 3.96 |
| 55℃ | 4.69 | 4.73 | 4.79 | 4.86 | 4.72 | 4.63 | 4.66 | 4.76 | 4.83 | 4.87 | 4.91 | 4.95 | 4.99 | 4.66 | 4.68 | 4.70 | 4.20 | 4.26 | 4.32 |
| 60℃ | 4.88 | 4.91 | 5.01 | 5.04 | 4.86 | 4.75 | 4.78 | 4.87 | 4.93 | 4.97 | 5.01 | 5.05 | 4.70 | 4.72 | 4.76 | 4.77 | 4.42 | 4.44 | 4.48 |
| 65℃ | | 5.30 | 5.46 | 5.48 | 5.30 | 5.17 | 4.97 | 5.00 | 5.02 | 5.03 | 5.04 | 5.07 | 5.09 | 4.73 | 4.76 | 4.78 | 4.41 | 4.44 | 4.45 |
| 70℃ | | | 5.47 | 5.50 | 5.51 | 5.53 | 5.58 | 5.62 | 5.65 | 5.67 | 5.71 | 5.77 | 5.35 | 5.40 | 4.97 | 5.03 | 5.05 | 5.07 | 5.08 |
| 75℃ | | | | 4.98 | 5.02 | 5.06 | 5.13 | 5.17 | 5.19 | 5.21 | 5.27 | 5.34 | 5.39 | 4.94 | 5.00 | 5.06 | 5.08 | 5.10 | |



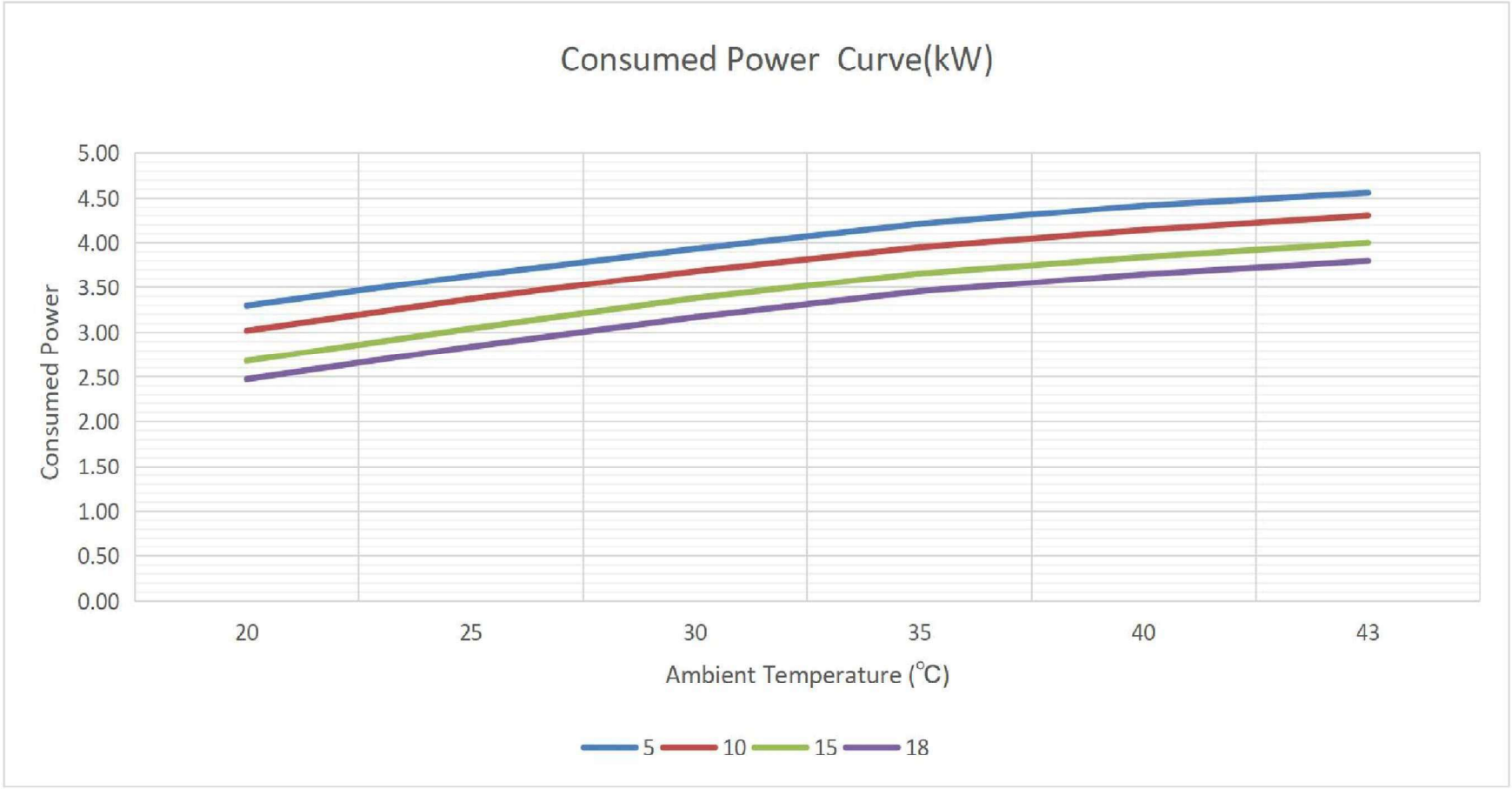
| | | 70Hz | 65Hz | 60Hz | 55Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 13.91 | 13.44 | 12.92 | 12.28 | 11.48 | 10.67 |
| 10 | 14.56 | 14.03 | 13.44 | 12.74 | 11.86 | 11.04 |
| 15 | 15.06 | 14.41 | 13.75 | 13.10 | 12.13 | 11.35 |
| 18 | 15.50 | 14.81 | 14.20 | 13.47 | 12.54 | 11.72 |



| | | 70Hz | 65Hz | 60Hz | 55Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 4.22 | 3.70 | 3.29 | 2.92 | 2.60 | 2.34 |
| 10 | 4.83 | 4.16 | 3.65 | 3.23 | 2.86 | 2.57 |
| 15 | 5.62 | 4.74 | 4.07 | 3.59 | 3.16 | 2.84 |
| 18 | 6.25 | 5.22 | 4.48 | 3.90 | 3.44 | 3.09 |



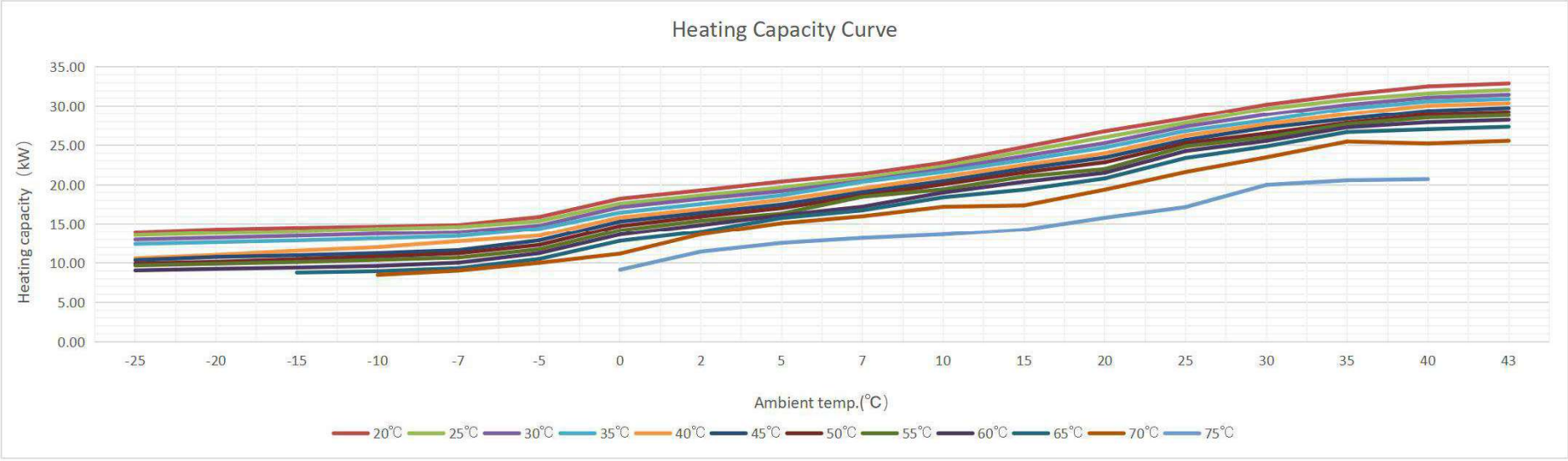
| | | 70Hz | 65Hz | 60Hz | 55Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 3.29 | 3.63 | 3.93 | 4.21 | 4.42 | 4.56 |
| 10 | 3.02 | 3.37 | 3.68 | 3.95 | 4.14 | 4.30 |
| 15 | 2.68 | 3.04 | 3.38 | 3.65 | 3.84 | 4.00 |
| 18 | 2.48 | 2.84 | 3.17 | 3.45 | 3.65 | 3.80 |



## Performance curves of 20KW R290 Full inverter Heating&Cooling Heat Pump

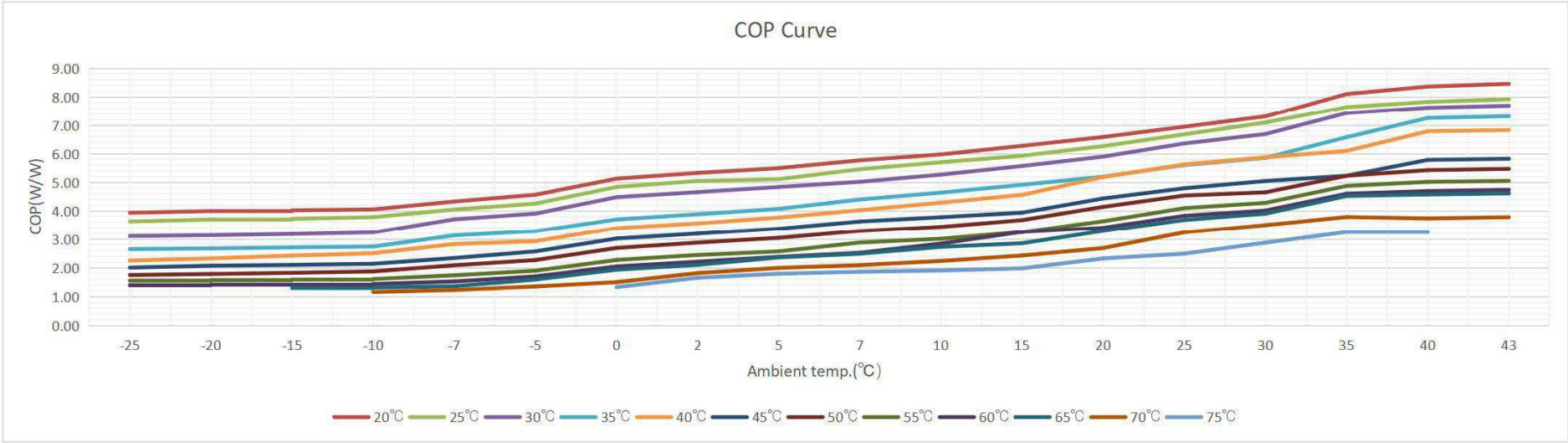
### Heating Capacity (kW)

| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 13.95 | 14.31 | 14.52 | 14.68 | 14.88 | 15.91 | 18.23 | 19.28 | 20.40 | 21.35 | 22.77 | 24.76 | 26.75 | 28.40 | 30.19 | 31.48 | 32.53 | 32.90 |
| 25℃ | 13.56 | 13.84 | 14.02 | 14.38 | 14.62 | 15.40 | 17.61 | 18.65 | 19.65 | 20.82 | 22.30 | 24.20 | 25.99 | 27.82 | 29.65 | 30.81 | 31.62 | 32.08 |
| 30℃ | 12.98 | 13.23 | 13.48 | 13.75 | 13.98 | 14.81 | 17.14 | 18.22 | 19.19 | 20.44 | 21.95 | 23.61 | 25.25 | 27.36 | 28.90 | 30.16 | 31.10 | 31.47 |
| 35℃ | 12.42 | 12.65 | 12.87 | 13.14 | 13.46 | 14.41 | 16.47 | 17.56 | 18.66 | 20.36 | 21.63 | 23.10 | 24.69 | 26.79 | 28.17 | 29.66 | 30.60 | 30.94 |
| 40℃ | 10.58 | 11.02 | 11.56 | 12.01 | 12.78 | 13.50 | 15.85 | 16.89 | 18.10 | 19.53 | 21.02 | 22.49 | 23.96 | 26.21 | 27.67 | 28.97 | 30.05 | 30.39 |
| 45℃ | 10.35 | 10.76 | 10.98 | 11.25 | 11.63 | 12.88 | 15.33 | 16.42 | 17.50 | 19.06 | 20.46 | 22.03 | 23.43 | 25.65 | 27.21 | 28.35 | 29.38 | 29.75 |
| 50℃ | 9.91 | 10.15 | 10.47 | 10.83 | 11.23 | 12.30 | 14.76 | 15.96 | 17.04 | 18.62 | 20.05 | 21.56 | 22.83 | 25.24 | 26.47 | 27.83 | 28.93 | 29.22 |
| 55℃ | 9.68 | 9.89 | 10.11 | 10.39 | 10.68 | 11.74 | 14.20 | 15.43 | 16.34 | 18.48 | 19.41 | 21.03 | 21.98 | 24.84 | 26.00 | 27.65 | 28.51 | 28.80 |
| 60℃ | 9.05 | 9.24 | 9.41 | 9.62 | 10.03 | 11.25 | 13.65 | 14.88 | 16.12 | 17.22 | 19.01 | 20.37 | 21.50 | 24.25 | 25.54 | 27.25 | 27.91 | 28.20 |
| 65°C | | | 8.77 | 8.95 | 9.33 | 10.50 | 12.83 | 14.02 | 15.79 | 16.76 | 18.41 | 19.37 | 20.79 | 23.37 | 24.84 | 26.65 | 27.01 | 27.32 |
| 70°C | | | | 8.47 | 9.02 | 10.01 | 11.18 | 13.67 | 15.13 | 16.01 | 17.21 | 17.38 | 19.37 | 21.60 | 23.45 | 25.45 | 25.20 | 25.54 |
| 75°C | | | | | | | 9.13 | 11.44 | 12.55 | 13.19 | 13.65 | 14.28 | 15.82 | 17.18 | 19.98 | 20.56 | 20.70 | |



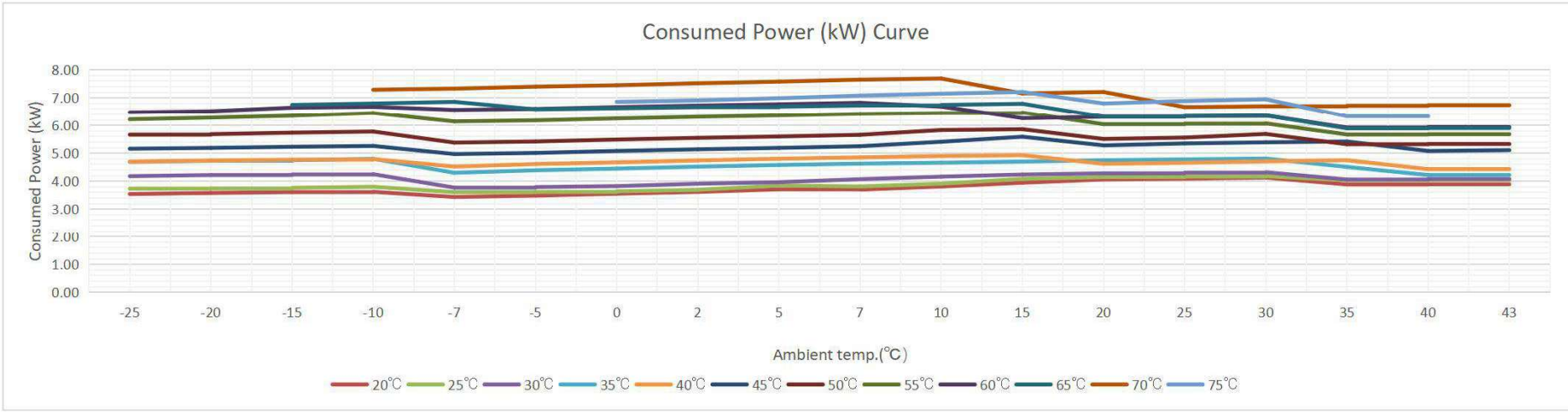
## COP（kW/kW）

| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 3.94 | 4.00 | 4.02 | 4.06 | 4.33 | 4.57 | 5.13 | 5.33 | 5.50 | 5.77 | 5.97 | 6.27 | 6.58 | 6.94 | 7.31 | 8.10 | 8.36 | 8.46 |
| 25℃ | 3.63 | 3.70 | 3.72 | 3.78 | 4.05 | 4.26 | 4.84 | 5.05 | 5.11 | 5.46 | 5.70 | 5.93 | 6.27 | 6.68 | 7.09 | 7.64 | 7.83 | 7.92 |
| 30℃ | 3.11 | 3.14 | 3.18 | 3.24 | 3.71 | 3.91 | 4.48 | 4.66 | 4.84 | 5.02 | 5.27 | 5.57 | 5.90 | 6.36 | 6.69 | 7.43 | 7.62 | 7.69 |
| 35℃ | 2.65 | 2.67 | 2.71 | 2.74 | 3.13 | 3.28 | 3.70 | 3.88 | 4.07 | 4.40 | 4.64 | 4.92 | 5.20 | 5.60 | 5.86 | 6.58 | 7.25 | 7.31 |
| 40℃ | 2.25 | 2.32 | 2.42 | 2.51 | 2.83 | 2.93 | 3.39 | 3.56 | 3.77 | 4.03 | 4.29 | 4.56 | 5.19 | 5.63 | 5.88 | 6.10 | 6.78 | 6.83 |
| 45℃ | 2.01 | 2.07 | 2.10 | 2.14 | 2.34 | 2.57 | 3.02 | 3.19 | 3.37 | 3.63 | 3.78 | 3.94 | 4.44 | 4.79 | 5.05 | 5.23 | 5.78 | 5.82 |
| 50℃ | 1.75 | 1.79 | 1.83 | 1.87 | 2.09 | 2.27 | 2.69 | 2.88 | 3.04 | 3.29 | 3.44 | 3.68 | 4.14 | 4.54 | 4.65 | 5.23 | 5.43 | 5.47 |
| 55℃ | 1.56 | 1.57 | 1.59 | 1.61 | 1.74 | 1.90 | 2.27 | 2.45 | 2.57 | 2.88 | 3.01 | 3.25 | 3.64 | 4.10 | 4.28 | 4.88 | 5.02 | 5.05 |
| 60℃ | 1.40 | 1.42 | 1.42 | 1.44 | 1.53 | 1.70 | 2.05 | 2.21 | 2.38 | 2.52 | 2.84 | 3.25 | 3.41 | 3.83 | 4.02 | 4.60 | 4.70 | 4.74 |
| 65℃ | | | 1.30 | 1.32 | 1.36 | 1.59 | 1.93 | 2.10 | 2.36 | 2.49 | 2.73 | 2.85 | 3.29 | 3.68 | 3.91 | 4.53 | 4.58 | 4.61 |
| 70℃ | | | | 1.16 | 1.23 | 1.35 | 1.50 | 1.82 | 2.00 | 2.09 | 2.24 | 2.43 | 2.69 | 3.24 | 3.50 | 3.79 | 3.74 | 3.78 |
| 75℃ | | | | | | | 1.33 | 1.66 | 1.80 | 1.86 | 1.91 | 1.98 | 2.33 | 2.49 | 2.87 | 3.25 | 3.26 | |

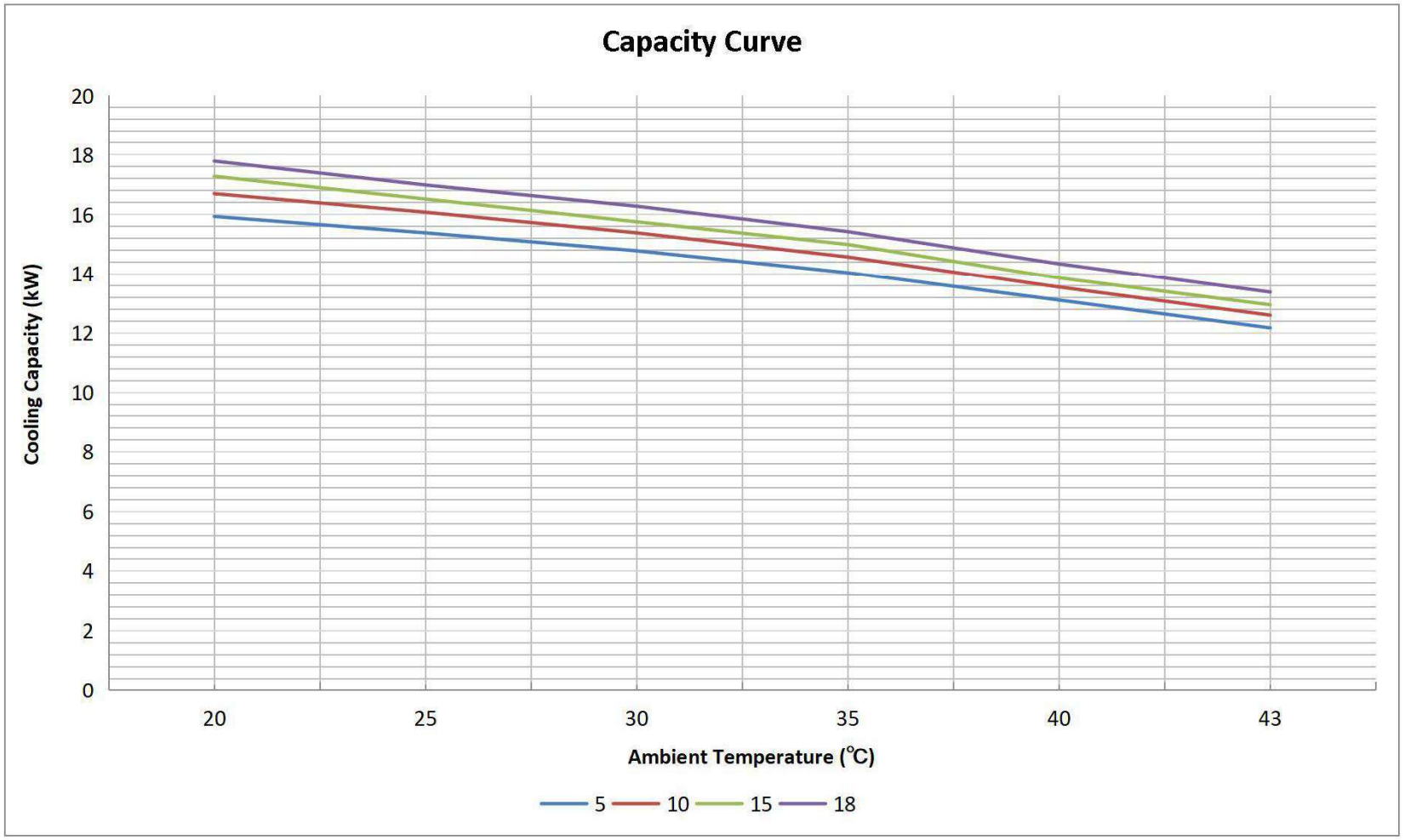


## Consumed Power (kW)

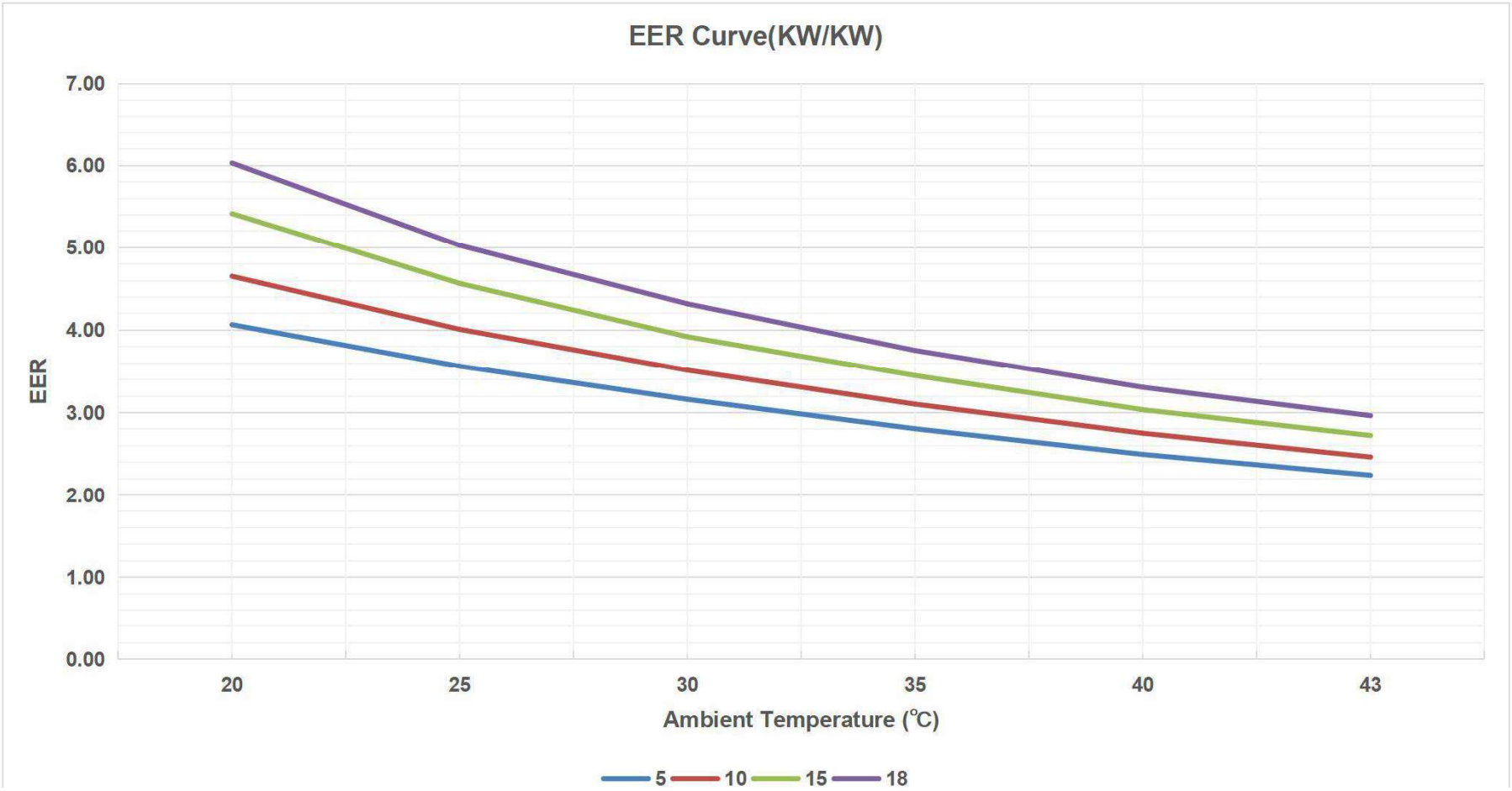
| | | 90Hz | | 85Hz | | 80Hz | | 75Hz | | 70Hz | | 65Hz | | 60Hz | | 55Hz | | 50Hz |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | -25 | -20 | -15 | -10 | -7 | -5 | 0 | 2 | 5 | 7 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 43 |
| 20℃ | 3.54 | 3.58 | 3.61 | 3.62 | 3.44 | 3.48 | 3.55 | 3.62 | 3.71 | 3.70 | 3.81 | 3.95 | 4.06 | 4.09 | 4.13 | 3.88 | 3.89 | 3.89 |
| 25℃ | 3.73 | 3.74 | 3.76 | 3.80 | 3.61 | 3.62 | 3.64 | 3.69 | 3.84 | 3.81 | 3.91 | 4.08 | 4.15 | 4.17 | 4.18 | 4.03 | 4.04 | 4.05 |
| 30℃ | 4.18 | 4.22 | 4.24 | 4.25 | 3.77 | 3.79 | 3.82 | 3.91 | 3.96 | 4.07 | 4.16 | 4.24 | 4.28 | 4.30 | 4.32 | 4.06 | 4.08 | 4.09 |
| 35℃ | 4.69 | 4.73 | 4.75 | 4.80 | 4.30 | 4.39 | 4.45 | 4.52 | 4.58 | 4.63 | 4.66 | 4.70 | 4.75 | 4.78 | 4.81 | 4.51 | 4.22 | 4.23 |
| 40℃ | 4.70 | 4.74 | 4.77 | 4.79 | 4.52 | 4.61 | 4.67 | 4.74 | 4.80 | 4.85 | 4.90 | 4.93 | 4.62 | 4.66 | 4.71 | 4.75 | 4.43 | 4.45 |
| 45℃ | 5.16 | 5.19 | 5.23 | 5.26 | 4.97 | 5.01 | 5.08 | 5.14 | 5.19 | 5.25 | 5.41 | 5.59 | 5.28 | 5.35 | 5.39 | 5.42 | 5.08 | 5.11 |
| 50℃ | 5.67 | 5.68 | 5.74 | 5.78 | 5.38 | 5.42 | 5.49 | 5.55 | 5.60 | 5.66 | 5.83 | 5.86 | 5.51 | 5.56 | 5.69 | 5.32 | 5.33 | 5.34 |
| 55℃ | 6.22 | 6.28 | 6.35 | 6.45 | 6.14 | 6.18 | 6.25 | 6.31 | 6.36 | 6.42 | 6.45 | 6.47 | 6.04 | 6.06 | 6.07 | 5.67 | 5.68 | 5.70 |
| 60℃ | 6.48 | 6.52 | 6.65 | 6.68 | 6.57 | 6.61 | 6.67 | 6.73 | 6.77 | 6.83 | 6.69 | 6.26 | 6.31 | 6.33 | 6.36 | 5.92 | 5.94 | 5.95 |
| 65℃ | | | 6.75 | 6.80 | 6.86 | 6.59 | 6.63 | 6.67 | 6.69 | 6.73 | 6.75 | 6.79 | 6.32 | 6.34 | 6.36 | 5.89 | 5.90 | 5.92 |
| 70℃ | | | | 7.29 | 7.33 | 7.40 | 7.45 | 7.52 | 7.58 | 7.65 | 7.69 | 7.16 | 7.21 | 6.67 | 6.70 | 6.72 | 6.74 | 6.75 |
| 75℃ | | | | | | | 6.86 | 6.91 | 6.99 | 7.08 | 7.15 | 7.21 | 6.80 | 6.89 | 6.95 | 6.33 | 6.35 | |



| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 15.94 | 15.39 | 14.79 | 14.05 | 13.12 | 12.18 |
| 10 | 16.70 | 16.08 | 15.39 | 14.58 | 13.56 | 12.61 |
| 15 | 17.28 | 16.52 | 15.76 | 15.00 | 13.87 | 12.96 |
| 18 | 17.79 | 16.99 | 16.28 | 15.43 | 14.35 | 13.39 |



| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 4.07 | 3.56 | 3.16 | 2.80 | 2.49 | 2.24 |
| 10 | 4.65 | 4.01 | 3.51 | 3.10 | 2.75 | 2.46 |
| 15 | 5.41 | 4.56 | 3.92 | 3.45 | 3.04 | 2.72 |
| 18 | 6.03 | 5.03 | 4.32 | 3.75 | 3.31 | 2.96 |



| | | 80Hz | 75Hz | 70Hz | 65Hz | |
|---|---|---|---|---|---|---|
| Ambient (℃) / Outlet (℃) | 20 | 25 | 30 | 35 | 40 | 43 |
| 5 | 3.92 | 4.32 | 4.68 | 5.01 | 5.26 | 5.43 |
| 10 | 3.59 | 4.01 | 4.38 | 4.70 | 4.93 | 5.12 |
| 15 | 3.19 | 3.62 | 4.02 | 4.35 | 4.57 | 4.76 |
| 18 | 2.95 | 3.38 | 3.77 | 4.11 | 4.34 | 4.52 |