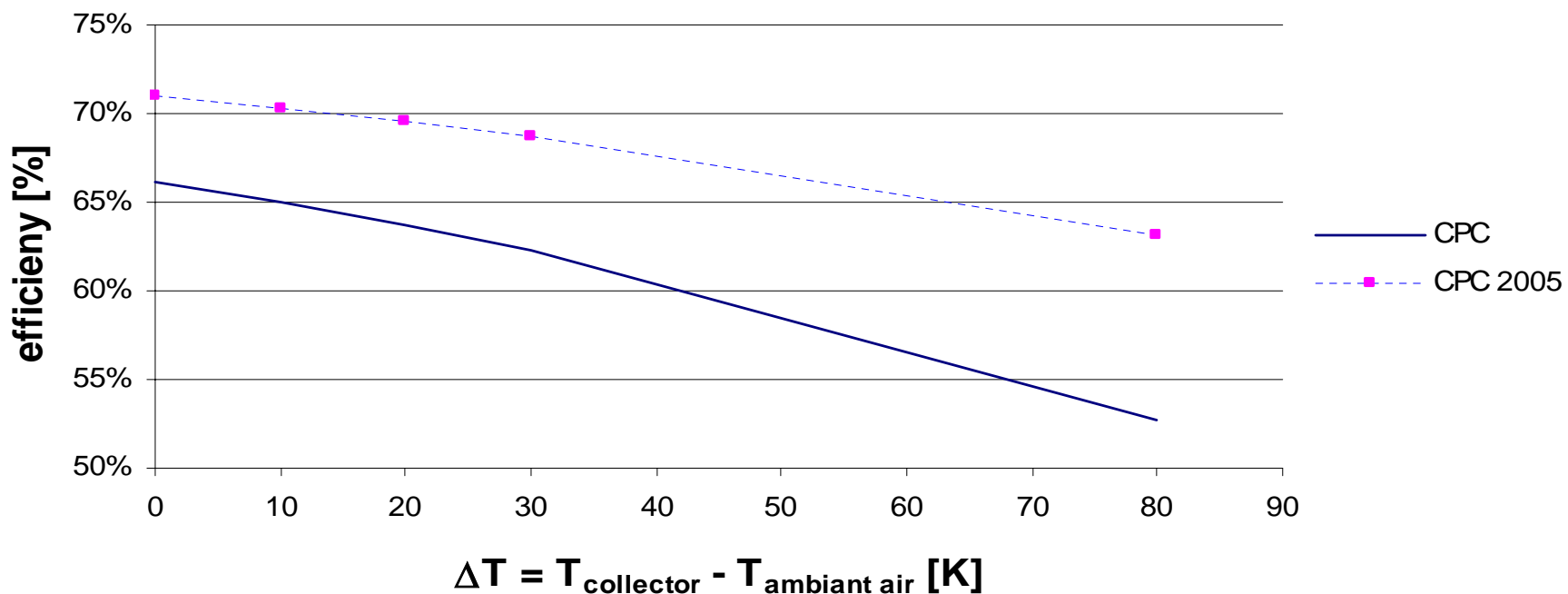




# collector efficiency for one stage machines

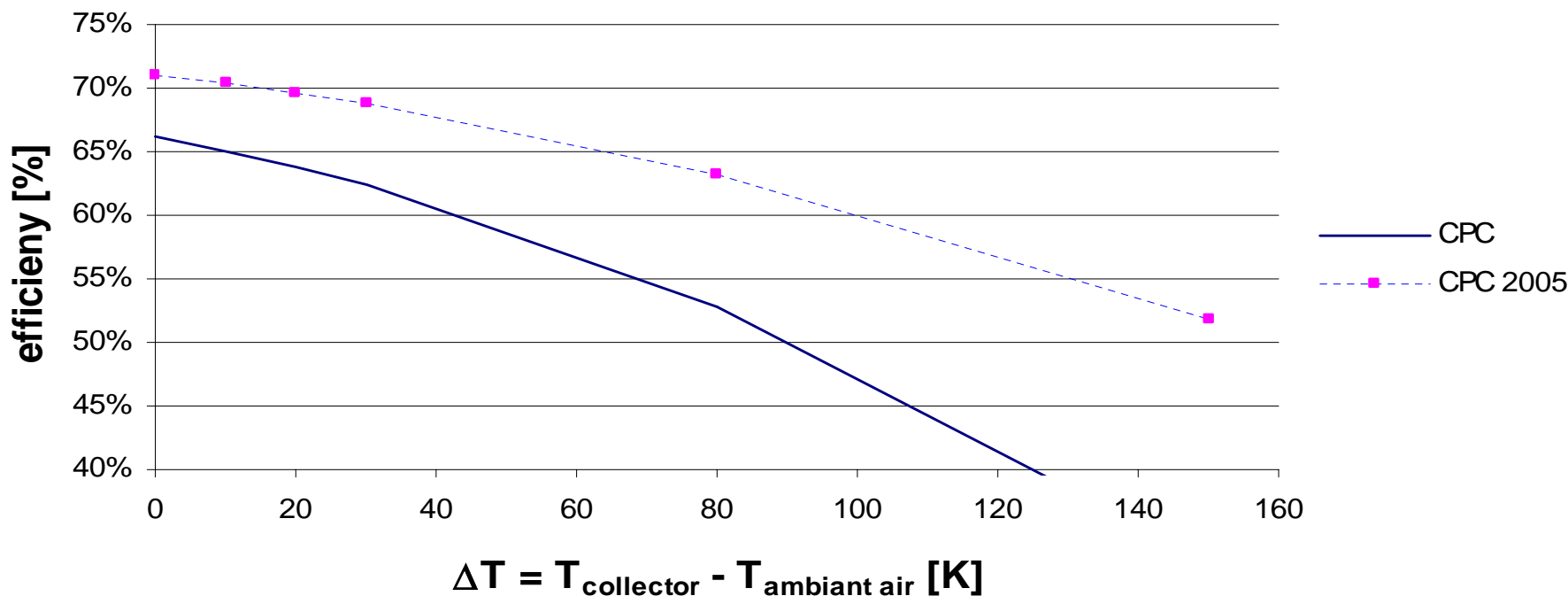
collector efficiency  
with an solar irradiation  $E_g$  of  $800 \text{ W/m}^2$





# collector efficiency for two stage machines

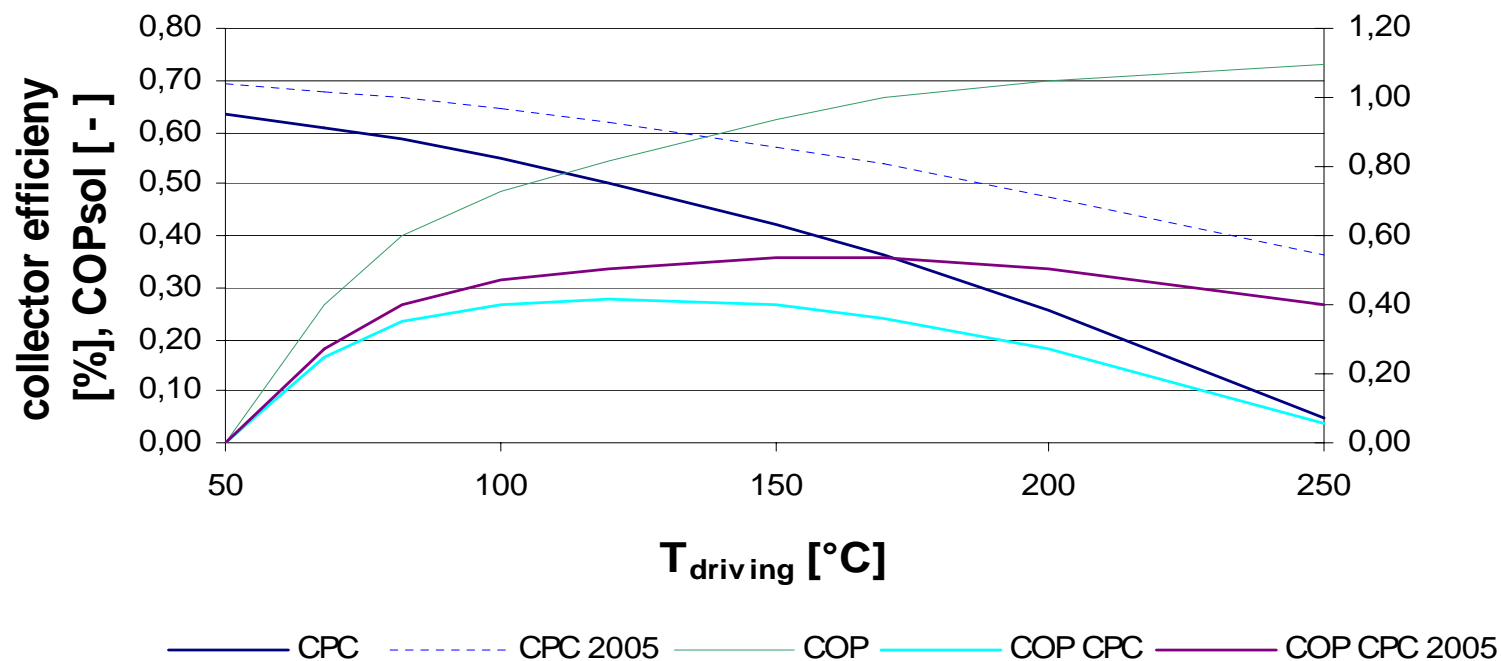
collector efficiency  
with an solar irradiation  $E_g$  of  $800 \text{ W/m}^2$





# CPC collector in solar air conditioning

$COP_{sol}$   
with a solar irradiation  $E_g$  of  $800 \text{ W/m}^2$





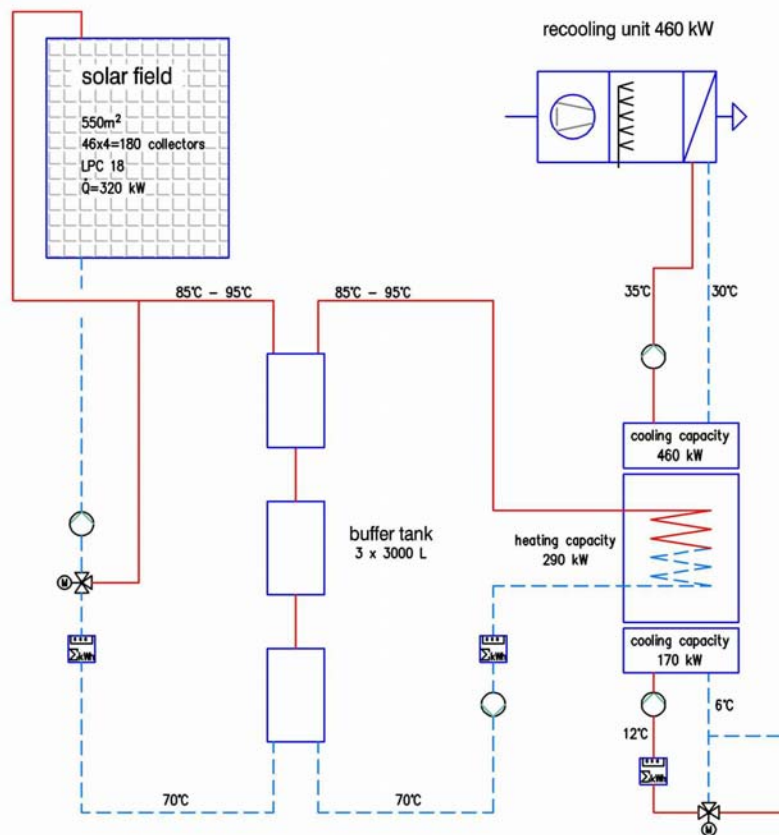
# Technology overview

Technology	Absorption cooling water- Lithiumbromid	Absorption cooling Ammonia-water	Closed adsorption H <sub>2</sub> O-Silikagel	Open sorption cooling
Heating temperature	90-120°C	100-140°C	55-100°C	55-100°C
Cooling water temperatur	30-50°C	30-50°C	25-35°C	Not required
Available cooling power	40-7000kW	10-10.000kW	70-350kW	6-300kW
COP [-]	0.6-0.7	0.6-0.7	0.6-0.7	0.5-1.0





# hydraulics for solar assisted air conditioning



- collector area
- hot water storage tank(s)







力诺瑞特太阳能  
LINUO PARADIGMA SOLAR ENERGY

# Paradigma solar thermal air conditioning systems



Friedberg, Germany  
York Absorption  
 $\text{H}_2\text{O-LiBr}$  100 kW



Köthen, Germany  
 $\text{NH}_3\text{-H}_2\text{O}$  ILK Dresden



Algorfa, Alicante, Spain  
York Absorption  
 $\text{H}_2\text{O-LiBr}$  150 kW





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LINUO PARADIGMA SOLAR ENERGY

# Linuo Paradigma solar air conditioning

model house of Shanghai insitute for communication



designed by the Shanghai institute of refrigeration and cryogenics  
Shuangliang, two stage LiBr absorption chiller, 80 kW

