Cycle maximum minimum temperature

Refrigerant-134a enters the compressor of a refrigerator as a saturated vapor at 0.12 MPa (point 1) and leaves as a superheated vapor with T = 50°C at 0.9 MPa (point 2). It is then isobarically cooled in the condenser to a saturated liquid state (point 3) and finally an expansion valve reduces the pressure to 0.12 MPa (point 4). The next few questions will be about this cycle, so it might be convenient to make a table with all the information.

What is the maximum minimum temperature that can be reached using this cooling cycle?

The minimum achievable temperature is equal or greater than the temperature at which heat is absorbed into the cycle. In this case that is at the saturation temperature of the working fluid at $P = 0.12MPa$ gives $T_{sat} = -22.32°C$.