

ABSTRACT

One of the most important aspects for captivating the ornamental fish is by keeping the water temperature stays at the optimum temperature for the ornamental fish breeding. Generally, the optimum temperature for the ornamental fish habitat is at range of 22-24°C. Heat from environment can pass thorough the glass into the water inside the aquarium. Which is affecting the the water temperature and becomes a cooling load. In this study, the writer is trying to conduct a cooling experiment for aquarium by using vapour compression refrigeration system. The cooling load of glass aquarium is 91cmx38cmx45cm, thickness 6 mm, and the maximum volume of water 150 liters which uses 18 watt water pump. The result is a cooling tool capabable to absorbs in approxiamate range of watt and decreases the water temperature to 24°C for about two hours by giving a pressure treatment limit to the refrigerant at 15 Psi, by increasing the pressure treatment limit to 30 Psi, the system is able to cool the aquarium within 90 minutes. And by giving a pressure treatment limit to the refrigerant at 50 Psi, the system is able to cool the aquarium in less than 60 minutes. And the Instrument is able to maintain the temperature at 24°C for about two hours.

Keywords: *Chiller, vapour compression refrigeration system, cooling load.*