The aim of our study was to assess the combined impact of UVR (280–400 nm) and temperature on the first larval stage (Zoea I) of three crab species from the Patagonian coast: *Cyrtograpsus altimanus*, *C. angulatus*,and *Leucippa pentagona*. We determined the survival response of newly hatched Zoea I after being exposed for 8–10 h under a solar simulator (Hönle SOL 1200) at 15 and 20 °C. There was no mortality due to Photosynthetic Active Radiation (PAR, 400–700 nm) or ultraviolet-A radiation (UV-A, 315–400 nm), and all the observed mortality was due to ultraviolet-B radiation (UV-B, 280–315 nm). The data of larval mortality relative to exposure time was best fit using a sigmoid curve. Based on this curve, a threshold (Th) and the lethal dose for 50% mortality (LD_{50}) were determined for each species. Based on the Th and LD_{50}, *C. altimanus* was found to be the most resistant species, while *L. pentagona* was found to be the most sensitive to UV-B. For both species of *Cyrtograpsus*, mortality was significantly lower at 20 °C than at 15 °C; however, no significant differences between the two temperature treatments were found in *L. pentagona*. Bioaccumulation of UV-absorbing compounds in the gonads and larvae of *C. altimanus*, and to a lesser extent in *C. angulatus*, might have contributed for counteracting the impact of UV-B. However, most of the resilience to UV-B observed with the increase in temperature might be due to an increase in metabolic activity caused by a repair mechanism mediated by enzymes.