Characterization of solar ultraviolet irradiance variations over multi-decadal time scales requires the merging of multiple satellite data sets. Comparison of individual irradiance data sets from different instruments show both absolute offsets and time-dependent differences that vary between spectral ranges. A composite spectral UV irradiance data set has been created with daily spectra covering the wavelength range 120-400 nm for the time period November 1978 – August 2005. A reference irradiance spectrum is used to remove absolute biases between instruments, and the optimal irradiance data set is selected for each spectral and temporal interval. The long-term behavior of the merged composite irradiance data set is consistent with expectations based on other solar activity indicators. There is no difference between the minimum values for solar cycles 21 and 22 within the uncertainty of the data, and the maximum irradiance values for Cycle 23 are slightly lower than those observed for Cycles 21 and 22. We have recently extended this data set through 2009 using measurements from the SORCE SOLSTICE and SIM instruments, as well as NOAA-17 SBUV/2 data. Results for the Cycle 23 minimum will be presented and compared with our previous data.