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Precision Wavelength Measurements And Identifications Of EUV Lines From Highly Charged L-Shell yttrium Ions ROSHANI SILWAL, Clemson University, JOAN DREILING, National Institute of Standards and Technology, JOHN GILLASPY, National Science Foundation, ENDRE TAKACS, Clemson University, YURI RALCHENKO, National Institute of Standards and Technology — We present the measurements of extreme-ultraviolet spectra of the L-shell ions of highly charged yttrium (Y^{29+}-Y^{36+}) created and trapped in the electron beam ion trap (EBIT) of the National Institute of Standards and Technology. Few Na-like, Mg-like and Al-like yttrium lines (Y^{26+}-Y^{28+}) are reported as well. In order to reach the desired ionization stages, the beam energy was systematically varied from 2.3 keV to 6 keV during the experiment. A flat-field grazing-incidence spectrometer was used to record the spectra in the wavelength range of 4.022 nm to 19.957 nm. The wavelength calibration was provided by the previously measured lines of neon, xenon, oxygen and iron. A total of 63 new spectral lines (allowed and forbidden) corresponding to the Δn=0 transitions within n=2 and 3 have been identified using collisional-radiative simulations of the non-Maxwellian EBIT plasma. The total uncertainties assigned to the measured wavelengths vary between 0.001 nm to 0.003 nm and include contributions from calibration uncertainties, statistical uncertainties from the line fits, and estimated systematic uncertainties.

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