Center-of-Mass of a Uniform Solid Cone

The center-of-mass of a solid with density ρ and total mass M is defined (with respect to a given coordinate system) as

$$\boldsymbol{R} = \frac{1}{M}\int_V \rho \boldsymbol{r} dV.$$

Find the center-of-mass of the uniform solid cone pictured below, with coordinate system specified. You may assume that the volume of the cone is given by $V = \frac{1}{3}\pi a^2 b$.