

Calculating RCF from known RPM and Radius

General Rcf calculation equation:

$$RCF = 11.2 * R * \left(\frac{RPM}{1000}\right)^2$$

Where:

RCF = rotational centripetal force (xg)

R = radius of centrifuge from center of rotation to bottom of the tube (cm)

RPM = speed of centrifuge rotation (rotations per minute)

RCF calculation for Champion S-50D Centrifuge (standard SR8 rotor):

$$RCF = 11.2 * 14.5cm * \left(\frac{RPM}{1000}\right)^2$$

Example Calculation:

At 5000rpm, the Rcf for S-50D centrifuge is 4060xg because:

$$RCF = 11.2 * 14.5cm * \left(\frac{5000}{1000}\right)^2$$

$$RCF = 4060 \text{ xg}$$

Others:

SR4:

Max: 5000rpm = 4020xg

R = 14.36

AR-24 Rotor:

Max: 4000rpm = 2440 xg

R = 13.616

AR8:

Max: 4000rpm = 2010xg

R = 11.22

SRP:

Max: 3500rpm = 1450 xg

R = 10.57