BMW E46 Gear Ratio / Cruising RPM calculator

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Gear Ratio Calculator

This calculator is for finding your maximum speed for each gear. You can either enter the values manually or use the presets on the right. The presets on the right only change the Transmission Ratios, Final Drive Ratio and Engine Redline for the specific models. You you need to enter in your tire size, the E46 Profiles do not change it. These are specifications for US cars only. Other countries have different ratios for the same car. This will also calculate your highway cruising engine RPMs for a given speed.

| Reset Wheel Size | Calculate | Select an E46 Profile. Clicking on the model changes the Transmission Ratio, Final Drive Ratio and the Engine Redline (Does not update Tire Size) |
|---|-------------------|---|
| Tire Width (in mm) [Example: (225 / 45 - 17)] | 225 | - Default Manual Gear Ratios |
| Tire Aspect Ratio [Example: (225 / 45 - 17)] | 45 | 323i 323ci 323cic 323iT |
| Wheel Size (in inches) [Example: (225 / 45 - 17)] | 17 | 328i 328ci |
| Transmission Ratios | | 325i 325ci 325cic 325iT 325xi/T |
| 1st Gear | 4.21 | 330i 5spd 330ci 5spd 330ci 5spd |
| 2nd Gear | 2.49 | 330xi 5spd |
| 3rd Gear | 1.66 | 330i 6spd 330ci 6spd 330cic 6spd |
| 4th Gear | 1.24 | 330xi 6spd |
| | | 330i ZHP 330cic ZHP 330cic ZHP |
| 5th Gear | 1.00 | M3 / M3 convertible |
| 6th Gear | | - Default Automatic Gear Ratios |
| Final Drive Ratio | 3.73 | 323i/ 325i/ 328i All Models |
| Engine Redline RPM | 7000 | 330i All Models (except ZHP) |
| Max Speed in each Gear | MPH at Redline | 330i ZHP All Models Tire Sizes |
| Max Speed in 1st Gear | 33.12 | 225 / 45 - 17 245 / 40 - 17 225 / 40 - 18 |
| Max Speed in 2nd Gear | 55.99 | 255 / 35 - 18 255 / 40 - 18 255 / 35 - 19 |
| Max Speed in 3rd Gear | 83.99 | Select Different Final Drive |
| Max Speed in 4th Gear | 112.44 | E46 Ratios (non M3) |
| Max Speed in 5th Gear | 139.4200 | 2.93 3.07 3.15 3.23 3.38 3.46 3.64 3.73 3.91 |
| Max Speed in 6th Gear | | E46 M3 Ratios * 3.91 and 4.10 are aftermarket |
| Calculate your RPMs based upon your Cruising | | 3.62 *3.91 *4.10 |
| Speed | | Select Different Redline |
| Cruising Speed (Enter speed you drive on the HWY) | 70 MPH | 6500 RPM - Standard E46 |
| Engine RPM at Cruising Speed | 3514 RPM | 6800 RPM - E46 330i ZHP |
| Reset | Calculate | 7000 RPM - Software Upgraded |
| | | 8000 RPM - E46 M3 |

^{*} These results are based on mathematical formulas. Your actual speed may vary. Top speeds are theoretical. I am not responsible for any inaccuracies provided in these calculations. They are only provided for entertainment / informational purposes.

E-mail me questions / comments / or corrections to my info.