C210 Performance Specifications and Limitations

Performance figures given at MAUW and speeds in KIAS unless specified otherwise.

Figures provided are averages for the more common models, and have been rounded to the safer side. Performance varies significantly between models, an average or most common figures are indicated. REMEMBER these figures may not correspond to those for your particular model, ALWAYS Confirm performance and operating requirements in the AFM before flying.

**Structural Limitations**

- Gross weight (take-off and landing): 3400lbs - 4100lbs
- Maximum landing weight: 3400lbs - 3900lbs
- Standard empty weight: 2150lbs - 2500lbs
- Max Baggage allowance in aft compartment: 120-200lbs
- Baggage on Folded down 5/6th seat: 120lbs
- Rear Compartment with Seat Removed: 50lbs
- Flight load factor (flaps up): +3.8g – -1.52g
- Flight load factor (flaps down): +2.0g – 0g

**Engine Specifications**

- Engine (Lycoming IO-520 series) power:
  - Max – 5 minutes only: 300BHP at 2850RPM
  - Max Continuous: 285BHP at 2700RPM
- Engine (Lycoming TSIO-520 series) power:
  - Max – 5 minutes only: 310BHP at 2700RPM
  - Max Continuous: 285BHP at 2600rpm
- Engine (Lycoming TSIO-520 series) power:
  - Max – 5 minutes only: 325BHP at 2700 rpm, (flat rated) maximum continuous
- Oil capacity:
  - 10Qts normally aspirated engines,
  - 11Qts Turbo and External Filter engines
  - Do not operate on less than 7Qts minimum

**Fuel**

- Usable fuel:
  - Standard tanks: 87USG/329litres/534lbs
  - Optional Long range: 115USG
Fuel

Optional Tip tanks
Additional in each Tip Tank
16 USG/60 litres
Filler cap qty
64USG/ 384lbs

Landing Gear Pressure

Main wheel tyre pressure 55 psi
Nose wheel tyre pressure 50 psi or 88 psi depending on type (refer manual)
Nose Strut Pressure 90 psi

Maximum Speeds

Never Exceed Speed, \((V_{ne})\) 175-225kts \((200-260mph)\) (top red line)
Maximum structural cruise speed \((V_{no})\)* 170-210kts \((195-240mph)\) (top of green arc)
Maximum demonstrated crosswind component** 15kts \((20mph)\)
Maximum manoeuvering speed \((V_{a})\) 115-135 kts \((135 – 155 \text{ mph})\)

*May not be exceeded unless in smooth air conditions
**Late models only

Flap Limitation Speeds:

Note: speeds vary significantly with models.

Early models 0-10 degrees 140kts \((160mph)\) (Placarded on Flap Lever)
Early models 10-30 degrees 10-30 105kts \((120mph)\) (top of white arc)
Later models 0-10 degrees 0-10 150-160kts \((175-185mph)\) (Placarded on Flap Lever)
Later models 10-20 degrees 10-20 130kts \((160mph)\) (Placarded on Flap Lever)
Later models 20-30 degrees 20-30 115kts \((120mph)\) (top of white arc)

Gear Limitation Speeds

Gear Operating 135-165kts \((165-190mph)\)
Gear Down 135-200kts \((165-230mph)\)
### Stall Speeds

<table>
<thead>
<tr>
<th>Description</th>
<th>Speed</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stall speed, clean (Vs)</td>
<td>70-75kts</td>
<td>(80-85mph) (bottom of green arc)</td>
</tr>
<tr>
<td>Stall speed, landing config. (Vso)</td>
<td>60-65kts</td>
<td>(70-75mph) (bottom of white arc)</td>
</tr>
</tbody>
</table>

### Performance for Normal Operations

#### Takeoff

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal take-off, flaps up</td>
<td>Raise nose at 55kts (60mph), accelerate 90mph once obstacle cleared</td>
</tr>
<tr>
<td>Short field take off, Flaps 10°</td>
<td>50ft 75kts, (85mph)* accelerate 80kts, (90mph) before retracting flaps Clear of Obstacles accelerate to Vy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fuel Placard – Takeoff Fuel flow</th>
<th>RPM</th>
<th>Sea Level</th>
<th>144lbs/hr</th>
<th>138lbs/hr</th>
<th>4000ft</th>
<th>132lbs/hr</th>
<th>126lbs/hr</th>
<th>120lbs/hr</th>
<th>114lbs/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>2850RPM</td>
<td>2700RPM</td>
<td>Sea level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Airspeed</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>92kts (102mph)</td>
<td>Sea level</td>
</tr>
<tr>
<td>97kts (109mph)</td>
<td>10,000ft</td>
</tr>
</tbody>
</table>

#### Best Angle of Climb Speed (Vx)

<table>
<thead>
<tr>
<th>Description</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal climb out speed</td>
<td>Initial 90-100kts, (100-115mph) Enroute kts, (120-140mph) or as req'd for performance</td>
</tr>
<tr>
<td>Normal approach flaps 30°</td>
<td>75-85kts, (90-100mph)</td>
</tr>
<tr>
<td>Normal approach flaps up</td>
<td>80-90kts, (95-105mph)</td>
</tr>
<tr>
<td>Short field landing</td>
<td>75kts, (90mph)</td>
</tr>
</tbody>
</table>

*See more on short field performance and speeds in the Normal Operations section*

### Speeds for Emergency Operation

<table>
<thead>
<tr>
<th>Description</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Failure after take-off</td>
<td>85kts (100mph)</td>
</tr>
<tr>
<td>Forced landing</td>
<td>3000lbs 75kts (85mph) flap up 3400lbs 80kts (90mph) flap up 3800lbs 85kts (100mph) flap up</td>
</tr>
</tbody>
</table>
Precautionary landing
85kts (100mph) flap up
75kts (90mph) full flap

Cruise Performance*
(Continental IO520 series 300hp engines, C210 Centurion)

Cruise at 5000ft pressure altitude
2400 RPM 23”MP, 148KTAS, 83lbs/hr

Cruise at 10,000ft pressure altitude
2400RPM, 21”MP, 154KTAS, 79lbs/hr

Block Planning Figures**

Block Cruises, recommended performance (Planning)
2400RPM, 23” or available MP
145kts TAS
60lt/hr / 100lbs/hr
4hours safe endurance+reserve

Recommended Minimum Field Length (Planning)
700m Sea Level
900m Above 3000ft Density Altitude

*Cruise figures provided from the pilots operating handbook should be used with a contingency factor, block cruises speed and fuel flow allow for contingency and for climb and descent, and are normally applied for planning purposes.

**Where field/operations approach these margins performance figures should be consulted to confirm performance