

## Challenger Light Sport Models Overview & Comparison

Overall Design Objective

Configuration Optimization Goals

Ideal Target Missions = Max Versatility

Key Design Elements

Power Pack - Engine - Dual Electronic Ignition - ASTM Certified  
Power Pack - Ancillary Systems - Purpose-Built for Challenger  
Power Pack - Reduction Drive - 2.6:1 Purpose-Built for Challenger  
Power Pack - Prop - Matched to Engine & Airframe & Missions

Oil Injection - Standard = No More Premixing

Fuel - Flexibility = Minimize Cost / Maximize Convenience  
Fuel - Flexibility = No Sourcing Worries

Wing Design - Determines Lift, Speed, Maneuverability, Ride  
Wing Area - Wide 5.625 ft Chord - More Lift for Less Engine Cost  
Wing Tips - Increased Speed & Increased Roll Rates  
Leading Edge Wrap - Increased Lift & Increased Roll Rates  
Flaperons - Increased Roll Control & Decreased Stall Speed

Vertical Tail - Increased Directional Stability = Less Rudder Work  
Differential Ailerons - Reduced Adverse Yaw = Easier Handling  
Dorsal - Balanced Stability / Maneuverability

Easy Entry Cabin - New Light Sport Design - Width is per Person

Internal Baggage Area - Fuselage - Requires Wing Tanks  
External Baggage Carrier - Belly Bag and/or Cargo Pod

Landing Gear Designed for Short, Rough Strips

## E SERIES

### Challenger Light Sport EL-65

Create Foundation for New E Series Models

Max Economy, Max Versatility  
Great Speed, Great Range, Great Endurance

Heavy Loads, High Altitudes  
Wheels, Tundra Tires, Skis, Wheel/Skis,  
Straight Floats, Amphibious Floats

New Larger X Series Tapered Tail  
New Light Sport Differential Ailerons  
New Light Sport Easy Entry Cabin  
New Light Sport Heavy Load Saddles  
Lowest Empty Weight for Amphibs  
Fuselage Fuel Tank (Std)  
External Baggage (Opt)

New Bombardier-Rotax 582 Mod 99 Blue Head  
Oil Injection, High Cap Rad, Louvres, Cabin Heat  
No Slippage, No Side Loads, No Drive Train Lash  
Warp 60" 3-Blade Carbon Fibre Ground Adjustable

Dual Oil Tanks Give 10-12 Hours Cruise

Auto Gas (Regular or Super), AvGas (100LL), Boat Gas  
Up To 10% Ethanol

Classic 31.5 ft (Std) / Classic 29.5 ft (Opt)  
177 sq ft (Std) / 166 sq ft (Opt)  
Bow Tips (Std) / Hoerner Tips (Opt)  
Scalloped LE No Wrap (Std) / Straight LE w/ Wrap (Opt)  
7.5 in Chord x Full Span

New Larger X Series Tapered Tail  
New Light Sport Differential Bellcranks  
New X Series Fillet with North American Dorsal

Width 32 in / Head Room 43 in / Leg Room 46 in

Not Available  
Aftermarket Suppliers

Classic Internal Carry Through  
Hollow Legs, Chromoly Inserts, Support Cables  
Oversize Azusa Wheels + Cable Drum Brakes

## X SERIES

### Challenger Light Sport XL-65

Create Foundation for New X Series Models

Max Capability, Max Versatility, Max Utility  
Max Speed, Max Range, Max Endurance

Max Loads, Max Altitudes  
Wheels, Tundra Tires, Skis, Wheel/Skis,  
Straight Floats, Amphibious Floats

New Larger X Series Tapered Tail  
New Light Sport Differential Ailerons  
New Light Sport Easy Entry Cabin  
New Light Sport Heavy Load Saddles  
Highest Gross Weight for Amphibs  
Dual Wing Tanks (Std)  
Fuselage Baggage Area (Std)

New Bombardier-Rotax 582 Mod 99 Blue Head  
Oil Injection, High Cap Rad, Louvres, Cabin Heat  
No Slippage, No Side Loads, No Drive Train Lash  
Warp 60" 3-Blade Carbon Fibre Ground Adjustable

Dual Oil Tanks Give 10-12 Hours Cruise

Auto Gas (Regular or Super), AvGas (100LL), Boat Gas  
Up To 10% Ethanol

New X Series 29.5 ft Long Wing (Std)  
166 sq ft (Std)  
Hoerner Fibreglass Wing Tips (Std)  
Straight Leading Edge with New Channel Wrap  
7.5 in Chord x Full Span

New Larger X Series Tapered Tail  
New Light Sport Differential Bellcranks  
New X Series Fillet with North American Dorsal

Width 32 in / Head Room 43 in / Leg Room 46 in

100 lbs / 2.7 cu ft / 18"x15" base  
Aftermarket Suppliers

New Heavy Duty X Series Internal Carry Through  
New Heavy Duty X Series Solid Legs No Cables  
Oversize Hegar Wheels + Hydraulic Disc Brakes

**Challenger Light Sport Models  
Overview & Comparison**

|   | <b>E SERIES</b>                                   | <b>X SERIES</b>                                |
|---|---|--|
|   | <b>Challenger Light Sport EL-65</b>               | <b>Challenger Light Sport XL-65</b>            |
| Load Factors at Max Gross Weight                                  | +6G / -3G   | +6G / -3G                                      |
| Max Gross Weight  | 960 lbs   | 1060 lbs                                       |
| Empty Weight - Wheels or Skis                                     | 425 lbs   | 475 lbs  |
| Empty Weight - Amphib Floats                                      | 525 lbs   | 575 lbs  |
| Takeoff / Landing - Typical Conditions - STOL Technique           | 75 - 200 ft                                       | 75 - 200 ft                                    |
| Maximum Demonstrated Crosswind                                    | 20 mph  | 20 mph   |
| Rate of Climb - Vy - Standard Conditions                          | > 1000 fpm  | > 1000 fpm                                     |
| Service Ceiling - Standard Conditions                             | 12,500 - 14,000 ft                                | 12,500 - 14,000 ft                             |
| Minimum Sink Rate - Engine Off                                    | 350 - 450 fpm                                     | 350 - 450 fpm                                  |
| Glide Ratio - Engine Off  | 11 to 1   | 11 to 1  |
| Stall Speed (Flaperons Down)                                      | 30 mph IAS  | 34 mph IAS                                     |
| Max Speed (Vne)   | 100 mph IAS                                       | 105 mph IAS                                    |
| Max Cruise (Wheels)   | 90 mph TAS  | 95 mph TAS                                     |
| Fuel Economy - No Wind  | 20 - 25 mpg                                       | 20 - 25 mpg                                    |
| Standard Fuel Tankage   | 10 USgal Fuselage Tank                            | 20 USgal Wing Tanks                            |
| Optional Fuel Tankage   | Alternative 17 USgal Fuselage Tank                | Additional 10 or 17 USgal in Fuselage          |
| Fuel Consumption at Typical Cruise Power                          | 3.0 - 4.0 USgph = 12 - 16 L/hr                    | 3.0 - 4.0 USgph = 12 - 16 L/hr                 |
| Endurance at Typical Cruise Power                                 | 4 - 6 hrs with Optional 17 USgal Fuselage Tank    | 5 - 7 hrs with Standard 20 USgal Wing Tanks    |
| Range at Typical Cruise Power                                     | 340 - 425 sm with Optional 17 USgal Fuselage Tank | 400 - 500 sm with Standard 20 USgal Wing Tanks |
| Oil Injection System - Dual Tanks - Capacity                      | 10 -12 hrs  | 10 -12 hrs                                     |
| Electric Start + Electrical System w/ Regulator/Rectifier         | 12V DC 170W                                       | 12V DC 170W                                    |
| Aircraft Grade 6061-T6 Aluminum & Certified AN Hardware           | Standard  | Standard                                       |
| Quick-Build Kit - Factory Built Tail, Wings, Fuselage             | Standard - No Extra Charge                        | Standard - No Extra Charge                     |
| Factory Installed Full Dual Controls - Sticks, Rudders, Throttles | Standard - No Extra Charge                        | Standard - No Extra Charge                     |
| Factory Presewn / Precut Superflite Fabric                        | Standard - No Extra Charge                        | Standard - No Extra Charge                     |
| Simple Assembly - No Parts Fabrication Required - Realistic Time  | +/- 300 hrs                                       | +/- 300 hrs                                    |
| Price for Airframe: Tail, Wings, Fuselage, Instruments, Fabric    | Contact Us For Quote                              | Contact Us For Quote                           |
| Price for Power Pack: Engine, Cooling, EStart, Redrive, Prop      | Contact Us For Quote                              | Contact Us For Quote                           |
| Price for Complete Package: Just Add Paint & Pilot                | Package Discount Available                        | Package Discount Available                     |
| Kit By Section Program - Four Subkits to Spread Out Cash Flow     | Tail, Wings, Fuselage, Engine                     | Tail, Wings, Fuselage, Engine                  |
| Typical Operating Cost  | \$15-20 per hour                                  | \$15-20 per hour                               |
| Price vs Competition  | WOW!  | WOW!   |