

**2016 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

Capacity 100 lbs Max (Std)  
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

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	<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
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!