

**2016 Challenger Light Sport Models  
Features & Contents**

	<b>E SERIES</b>	<b>X SERIES</b>
	<b>Challenger Light Sport EL-65</b>	<b>Challenger Light Sport XL-65</b>
Two-Seat Tandem Fuselage Length Overall	New Light Sport Design 20 ft	New Light Sport Design 20 ft
HL-100 Heavy Load Saddle Kit	Included	Included
Strengthened Attachment of Lift Struts to Main Longerons	Included	Included
Eliminate Flexing on Very Rough Surfaces	Included	Included
Heavy Duty Main Gear Load Carry Through Structure Fuselage Beefed Up Substantially	Special Order Upgrade Special Order Upgrade	Included Included
Main Landing Gear - E Series		
2024-T3 1.50" x .120" Aluminum Tube, 6" Chromoly Steel Inserts	Included	n/a
External Support Cables for Load Distribution	Included	n/a
Main Landing Gear - X Series		
Heavy Duty 7075-T651 1.25" Solid Aluminum Rod	Special Order Upgrade	Included
No Cables + Light Sport Fairings = Reduced Drag	Special Order Upgrade	Included
Main Landing Gear Leg Fairings for Speed & Looks		
Light Sport Style	Special Order Upgrade	Included
Classic Style	Included	n/a
Brakes - Stopping Power & Ground Control		
Hegar Hydraulic Discs	Special Order Option	Included
Cable Actuated, Floating Drum	Included	n/a
Oversize 6" Nose Fork for Rough Ground	Included	Included
Oversized 13x5.00-6 Aluminum Nose & Main Wheels		
Upgraded Hegar Wheels	Special Order Option	Included
Classic Azusa Wheels	Included	n/a
Oversize 13x5.00-6 Nose & Main Tires for Rough Ground	Included	Included
Oversize Fiberglass Wheel Pants to Reduce Drag	Special Order Option	Included
Low Pressure 18x8.00-6 Tires for Main Wheels	Special Order Option	No Charge Choice

## Features & Contents

## Challenger Light Sport EL-65

## Challenger Light Sport XL-65

Fairings for Speed & Looks		
Fiberglass Nose Cone	Included	Included
Fiberglass Midwing Gap Cover	New 2 pc 582 version Included	New 2 pc 582 version Included
Main Lift Strut Fairings	Included	Included
Wing Jury Strut Fairings	Special Order Option	Included
Tail Stab Strut Fairings	Special Order Option	Included
Light Sport Cabin Dimensions	Maximized	Maximized
Cabin Width (Per Person) (Cessna 172 is 39.5 for Two!)	32 in	32 in
Head Room (Std Seats) Front / Back	43 in / 40 in	43 in / 40 in
Leg Room (Std Seats) Front / Back	46 in / 44 in	46 in / 44 in
Light Sport Easy Entry Cabin	Included	Included
Wider Opening for Pilot Ingress/Egress	Included	Included
Lower Rear Siderails for Passenger Entry	Included	Included
Wraparound Windshield	Included	Included
Fully Enclosed Cabin	Included	Included
Removeable Doors	Included	Included
Choice of Tinted or Clear Lexan	Included	Included
Shoulder Harnesses - Front & Rear	Included	Included
Hinged Windscreen for Ultimate Easy Entry	Special Order Option	Special Order Option
Light Sport Prefabricated Instrument Panel	Special Order Option	Included
Precut & Predrilled via CNC	Special Order Option	Included
Mounting Hardware with Vibration Dampeners	Special Order Option	Included
Accommodates Wide Range of Instruments	Special Order Option	Included
Choice of Analogue or EIS Versions	Special Order Option	Included
Ergonomic Design to Increase Legroom	Special Order Option	Included
Instrument Package Contents		
Air Speed Indicator, Altimeter, Compass	Included	Included
Tachometer, Hour Meter, Coolant Temperature	Included	Included
Dual Exhaust Gas Temp, Dual Cylinder Head Temp	Special Order Option	Included
Slip Indicator, Dual Fuel Gauge+Senders	Special Order Option	Included
Aircraft Style Ignition Switch (Off/Left/Right/Both/Start)	Special Order Option	Included
Instrument Panel Wiring Bundle	Special Order Option	Included
Engine Wiring Bundle	Special Order Option	Included

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## Challenger Light Sport EL-65

## Challenger Light Sport XL-65

Large Wing = More Lift = Less Horsepower Required

Wing Span  
Wing Chord  
Wing Area  
Wing Loading

Classic Design  
31.5 ft (Std) / 29.5 ft (Opt)  
5.625 ft  
177 sq ft (Std) / 166 sq ft (Opt)  
5.4 lbs sq ft (Std) / 5.8 lbs sq ft (Opt)

New X Series Design  
29.5 ft Long Wing  
5.625 ft  
166 sq ft  
6.4 lbs sq ft

X Series Wing Design for Increased Lift, Speed, Strength

Airfoil Camber Increased & Straight Leading Edge  
Light Weight Leading Edge Channel Wrap  
Flush Gussets on Leading & Trailing Edges  
Bottom Ribs & Rib Channels  
Greatly Increased Stiffness  
Improved Roll Responsiveness

Special Order Upgrade  
Special Order Upgrade  
Special Order Upgrade  
Special Order Upgrade  
Special Order Upgrade  
Special Order Upgrade

Included  
Included  
Included  
Included  
Included  
Included

Fiberglass Hoerner Wingtips

Boxed Wing Tip Structure  
Reduced Drag for Higher Speed  
Improved Roll Responsiveness

Optional  
Optional  
Optional  
Optional

Included  
Included  
Included  
Included

Flaperons - Combined Ailerons & Flaps

Optimized for Maximum Lift & Minimum Stall  
Optimized for Maximum Maneuverability

7.5 in Chord x Full Span  
Included  
Included

7.5 in Chord x Full Span  
Included  
Included

In-Flight Adjustable Pitch Trim

Minimize Workload - Maximize Controllability

Included  
Included

Included  
Included

Vertical Tail & Rudder

Size Compared To Classic Tail  
Tubing Size & Tailpost Weldments  
Rudder Cable Diameter  
Rudder Cable Turnbuckles  
Rudder Cable Routing  
Increased Directional Stability & Control  
Balanced Stability & Maneuverability

New Larger X Series Tapered Tail  
10" Higher; 25% More Area  
Larger & Beefier  
50% Thicker  
Aft = Easy Access  
Direct = Low Friction  
Included  
Included

New Larger X Series Tapered Tail  
10" Higher; 25% More Area  
Larger & Beefier  
50% Thicker  
Aft = Easy Access  
Direct = Low Friction  
Included  
Included

Light Sport Differential Aileron Bellcranks

Reduced Adverse Yaw

Included  
Included

Included  
Included

Dorsal Fin

New X Series Fillet & North American Dorsal

New X Series Fillet & North American Dorsal

Light Sport Improved Handling = Less Rudder Activity Required

Included

Included

## Features & Contents

## Challenger Light Sport EL-65

## Challenger Light Sport XL-65

Wing Tanks: 2 x 10 USgal = Total 20 USgal	Not Available	Included
Dual Fuel Gauge, Senders for Each Tank	Not Available	Included
Vented Caps, Gascolator	Not Available	Included
Located 4.5' Outboard of Root Tube	Not Available	Included
Rib Webs Integrated for Support	Not Available	Included
Redesigned Compression/Drag Struts for Strength	Not Available	Included
Increased Positive G-Load Factor	Not Available	Included
Increased Range & Endurance	Not Available	Included
Allows Baggage Compartment in Fuselage	Not Available	Included
Fuselage Tank: 10 USgal	Standard	Optional Extra Capacity
Fuselage Tank: 17 USgal	Optional Alternative Capacity	Optional Extra Capacity
Pilot Accessible Fuel Shut-Off	Included	Included
Control Stops		
Built-in for Rudder (at Control Horns)	Included	Included
Built-in for Ailerons (at Bellcranks)	Included	Included
Built-in for Elevators (Internal Structure)	Included	Included
Assembly Easier & Quicker	Included	Included
Instrument Panel Completely Prefab	Special Order Option	Included
Instrument & Engine Wiring Bundles	Special Order Option	Included
Complete Fuel System Provided	Included	Included
Assembly Manual Vastly Improved	Included	Included
Head Scratching & Guesswork	Excluded	Excluded

## Features & Contents

Challenger Bespoke 582 Power Pack  
10 Years Experience in Canadian Four Seasons Conditions

### Purpose-Built Aviation Powerplant

Manufacturer  
Model  
Source of Included Engine  
Warranty on Included Engine

Designed for Upright & Inverted Mounting  
Motor Mount with 8 Lord Mounts  
Heavy Duty Crankshaft & Bearings  
Hydro-Damper on Flywheel to Reduce Vibration

Dual Electronic Ignition  
Two Spark Plugs Per Cylinder

Oil Injection System - Dual Tanks

Dual Bing 54 Carburetors  
Mikuni Fuel Pump  
Fuel Pump Mount  
Fuel Lines & Fittings  
Fuel Filtration

Fuel Requirements  
Ethanol Flexibility

Exhaust System - 3pc Side Mount - Dual Ball Joints  
Exhaust Mounts - Purpose-Built for Challenger

Engine Cooling Technology  
Dexcool Long Life Coolant for Aluminum Block Engines  
Ceramic Water Pump Shaft Seal  
Thermostatically Controlled Coolant Bypass Circuit  
Cooling System - High Capacity Updraft Radiator

Cabin Heater for Liquid Cooled Power Pack  
Radiator Louvres (Top & Bottom) for Four Season Ops

Winter Preheating = Inconvenient & Time Consuming

## Challenger Light Sport EL-65

Engine, Mounts, Cooling, Redrive, Prop  
Proven Reliability

Certified ASTM Compliant  
Bombardier-Rotax  
65 hp 582 Mod 99 Blue Head  
Factory New  
18 Months or 100 Hours

Included  
Included  
Included  
Included

Included  
Included

Capacity 10-12 Hours

Included  
Included  
Included  
Included  
Filter

Auto (Reg or Prem), AvGas (100LL), Marina  
Up To 10% Ethanol ("E10")

Included  
Included

Liquid  
Increased Longevity  
Included  
Included  
Included

Optional All Season Kit  
Optional All Season Kit

Not Required

## Challenger Light Sport XL-65

Engine, Mounts, Cooling, Redrive, Prop  
Proven Reliability

Certified ASTM Compliant  
Bombardier-Rotax  
65 hp 582 Mod 99 Blue Head  
Factory New  
18 Months or 100 Hours

Included  
Included  
Included  
Included

Included  
Included

Capacity 10-12 Hours

Included  
Included  
Included  
Included  
Gascolator

Auto (Reg or Prem), AvGas (100LL), Marina  
Up To 10% Ethanol ("E10")

Included  
Included

Liquid  
Increased Longevity  
Included  
Included  
Included

Optional All Season Kit  
Optional All Season Kit

Not Required

## Features & Contents

## Challenger Light Sport EL-65

## Challenger Light Sport XL-65

Purpose-Built 2.6-to-1 Reduction Drive	Included	Included
Allows Inverted Engine Mount to Reduce Drag	Included	Included
Allows Larger Optimum Diameter Prop for Max Thrust	Included	Included
Lowers Prop RPM to Increase Efficiency & Reduce Noise	Included	Included
Cog Belt = No Slippage, No Side Loads, No Drive Train Lash	Included	Included
Propellor Matched to Engine, Redrive, Airframe	Warp Drive 60" 3-Blade Carbon Fibre	Warp Drive 60" 3-Blade
Blade Pitch Setting	Ground Adjustable	Ground Adjustable
Blade Construction	100% Carbon Fibre	100% Carbon Fibre
Blade Design	Wide Tip for Max Thrust	Wide Tip for Max Thrust
Upgraded Blades with Nickel Leading Edge Protection	Optional Prop Upgrade	Optional Prop Upgrade
Upgraded Machined Aluminum HP-L Hub	Optional Prop Upgrade	Optional Prop Upgrade
12V 170W DC Electrical System	Included	Included
Regulator/Rectifier, 4ga Wiring, Solenoid	Included	Included
582 Electric Start System by GPL (MAG End)	Standard	Standard
Backup Recoil (Pull) Starter Field Installable	Standard	Standard
582 Electric Start System by QCU (PTO End)	Special Order Option	Special Order Option
Backup Recoil (Pull) Starter Mounted Full Time	Special Order Option	Special Order Option
Power Pack Efficacy	Engine + Redrive + Prop	Engine + Redrive + Prop
Normal Operation Range	Smooth from Low Idle to Takeoff Thrust	Smooth from Low Idle to Takeoff Thrust
Power Band Characteristics	Wide Not Peaky	Wide Not Peaky
Time Limit at Full Throttle	No Time Limit	No Time Limit
Horsepower & Torque	Curves Peak Concurrently At Takeoff Power	Curves Peak Concurrently At Takeoff Power
Power vs 503 Power Pack	Horsepower +30% / Torque + 34%	Horsepower +30% / Torque + 34%
Specific Fuel Consumption vs 503 Power Pack	-22.7%	-22.7%
Propeller Tip Speeds	Very Low for Max Efficiency and Min Noise	Very Low for Max Efficiency and Min Noise
Idle	Idle 650 rpm 115 mph 0.15 mach	Idle 650 rpm 115 mph 0.15 mach
Cruise	Cruise 2075 rpm 370 mph 0.48 mach	Cruise 2075 rpm 370 mph 0.48 mach
Takeoff	Takeoff 2375 rpm 425 mph 0.55 mach	Takeoff 2375 rpm 425 mph 0.55 mach