

**2018 Challenger Light Sport Models  
Features & Contents**

**E SERIES  
Challenger Light Sport EL-65**

**X SERIES  
Challenger Light Sport XL-65**

	<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 External Support Cables for Load Distribution	Included Included	n/a n/a
Main Landing Gear - X Series Heavy Duty 7075-T651 1.25" Solid Aluminum Rod No Cables + Light Sport Fairings = Reduced Drag	Special Order Upgrade Special Order Upgrade	Included Included
Main Landing Gear Leg Fairings for Speed & Looks Light Sport Style Classic Style	Special Order Upgrade Included	Included n/a
Brakes - Stopping Power & Ground Control Hegar Hydraulic Discs Cable Actuated, Floating Drum	Special Order Option Included	Included n/a
Oversize 6" Nose Fork for Rough Ground	Included	Included
Oversized 13x5.00-6 Aluminum Nose & Main Wheels Upgraded Hegar Wheels Classic Azusa Wheels	Special Order Option Included	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 Tundra Tires for Main Wheels	Special Order Option	No Charge Choice

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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		
Cabin Width (Per Person) (Cessna 172 is 39.5 for Two!)	Maximized	Maximized
Head Room (Std Seats) Front / Back	32 in	32 in
Leg Room (Std Seats) Front / Back	43 in / 40 in	43 in / 40 in
	46 in / 44 in	46 in / 44 in
Light Sport Easy Entry Cabin		
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		
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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Large Wing = More Lift = Less Horsepower Required

- Wing Span
- Wing Chord
- Wing Area
- Wing Loading

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

Fiberglass Hoerner Wingtips

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

Flaperons - Combined Ailerons & Flaps

- Optimized for Maximum Lift & Minimum Stall
- Optimized for Maximum Maneuverability

In-Flight Adjustable Pitch Trim

- Minimize Workload - Maximize Controllability

Vertical Tail & Rudder

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

Light Sport Differential 1.5:1 Aileron Bellcranks

- Reduced Adverse Yaw

Dorsal Fin

Light Sport Improved Handling = Less Rudder Activity Required

**E SERIES**

**Challenger Light Sport EL-65**

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)

Special Order Upgrade

- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade
- Special Order Upgrade

Optional

- Optional
- Optional
- Optional

7.5 in Chord x Full Span

- Included
- Included

Included

Included

New Larger X Series Tapered Tail  
10" Higher; VStab 55% More Side Area

- Larger & Beefier
- 50% Thicker
- Aft = Easy Access
- Direct = Low Friction

- Included
- Included

Included

Included

New X Series Fillet & North American Dorsal

Included

**X SERIES**

**Challenger Light Sport XL-65**

New X Series Design

- 29.5 ft Long Wing
- 5.625 ft
- 166 sq ft
- 6.4 lbs sq ft

Included

- Included
- Included
- Included
- Included
- Included
- Included

Included

- Included
- Included
- Included

7.5 in Chord x Full Span

- Included
- Included

Included

Included

New Larger X Series Tapered Tail  
10" Higher; VStab 55% More Side Area

- Larger & Beefier
- 50% Thicker
- Aft = Easy Access
- Direct = Low Friction

- Included
- Included

Included

Included

New X Series Fillet & North American Dorsal

Included

**2018 Challenger Light Sport Models**  
**Features & Contents**

Wing Tanks: 2 x 10 USgal = Total 20 USgal (75.6 liters)  
 Dual Fuel Gauge, Senders for Each Tank  
 Vented Caps, Gascolator  
 Located 4.5' Outboard of Root Tube  
 Rib Webs Integrated for Support  
 Redesigned Compression/Drag Struts for Strength  
 Increased Positive G-Load Factor  
 Increased Range & Endurance  
 Allows Baggage Compartment in Fuselage

Fuselage Tank: 10 USgal (37.8 liters)  
 Fuselage Tank: 17 USgal (64.3 liters)

Pilot Accessible Fuel Shut-Off

Internal Baggage Compartment - Fuselage  
 External Baggage - Belly Bag and/or Cargo Pod

**Control Stops**

Built-in for Rudder (at Control Horns)  
 Built-in for Ailerons (at Bellcranks)  
 Built-in for Elevators (Internal Structure)

**Assembly Easier & Quicker**

Instrument Panel Completely Prefab  
 Instrument & Engine Wiring Bundles  
 Complete Fuel System Provided  
 Assembly Manual Vastly Improved  
 Head Scratching & Guesswork

**E SERIES**

**Challenger Light Sport EL-65**

Not Available  
 Not Available  
 Not Available  
 Not Available  
 Not Available  
 Not Available  
 Not Available  
 Not Available  
 Not Available  
 Standard  
 Optional Alternative Capacity  
 Included  
 Not Available  
 Aftermarket Suppliers  
 Included  
 Included  
 Included  
 Included  
 Special Order Option  
 Special Order Option  
 Included  
 Included  
 Excluded

**X SERIES**

**Challenger Light Sport XL-65**

Included  
 Included  
 Included  
 Included  
 Included  
 Included  
 Included  
 Included  
 Included  
 Optional Extra Capacity  
 Optional Extra Capacity  
 Included  
 100 lbs / 2.7 cu ft / 18"x15" base  
 Aftermarket Suppliers  
 Included  
 Included  
 Included  
 Included  
 Included  
 Included  
 Included  
 Excluded

## 2018 Challenger Light Sport Models Features & Contents

Challenger Bespoke 582 Power Pack  
Real World Experience in Four Seasons Conditions since 2005

Purpose-Built Aviation Powerplant  
Manufacturer  
Model  
Rotary Valve Technology  
Factory New Engine Warranty

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  
Dual K&N Carb Air Filter  
Mikuni Fuel Pump  
Fuel Pump Mount  
Fuel Lines & Fittings  
Fuel Filtration

Throttle Assembly with 3-Way Splitter  
Dual Choke Cables with Lever

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  
Coolant Expansion Tank with Mount

Cabin Heater for Liquid Cooled Power Pack  
Radiator Louvres (Top & Bottom) for Four Season Ops  
Winter Preheating = Inconvenient & Time Consuming

## E SERIES

### Challenger Light Sport EL-65

Engine, Mounts, Cooling, Redrive, Prop  
Proven Reliability, Proven Performance

Certified ASTM Compliant  
Bombardier-Rotax  
65 hp 582 Mod 99 Blue Head  
Increased Power, Lower Fuel Consumption  
18 Months or 100 Hours

Included  
Included  
Included  
Included

Included  
Included

Capacity 10-12 Hours

Included  
Included  
Included  
Included  
Included  
Filter

Included  
Included

Included  
Included

Liquid  
Increased Longevity  
Included  
Included  
Included  
Included

Optional All Season Kit  
Optional All Season Kit  
Not Required

## X SERIES

### Challenger Light Sport XL-65

Engine, Mounts, Cooling, Redrive, Prop  
Proven Reliability, Proven Performance

Certified ASTM Compliant  
Bombardier-Rotax  
65 hp 582 Mod 99 Blue Head  
Increased Power, Lower Fuel Consumption  
18 Months or 100 Hours

Included  
Included  
Included  
Included

Included  
Included

Capacity 10-12 Hours

Included  
Included  
Included  
Included  
Included  
Gascolator

Included  
Included

Included  
Included

Liquid  
Increased Longevity  
Included  
Included  
Included  
Included

Optional All Season Kit  
Optional All Season Kit  
Not Required

**2018 Challenger Light Sport Models**  
**Features & Contents**

Purpose-Built 2.6-to-1 Reduction Drive  
 Allows Inverted Engine Mount to Reduce Drag  
 Allows Larger Optimum Diameter Prop for Max Thrust  
 Lowers Prop RPM to Increase Efficiency & Reduce Noise  
 Cog Belt = No Slippage, No Side Loads, No Drive Train Lash

Propellor Matched to Engine, Redrive, Airframe  
 Blade Pitch Setting  
 Blade Construction  
 Blade Design  
 Upgraded Blades with Nickel Leading Edge Protection  
 Upgraded Machined Aluminum HP-L Hub

12V 170W DC Electrical System  
 Regulator/Rectifier, 4ga Wiring, Solenoid

582 Electric Start System by GPL (MAG End)  
 Backup Recoil (Pull) Starter Field Installable

582 Electric Start System by QCU (PTO End)  
 Backup Recoil (Pull) Starter Mounted Full Time

Flexible Fuel Choices for Economy & Convenience  
 Fuel with Ethanol is Acceptable

Power Pack Efficacy  
 Normal Operation Range  
 Power Band Characteristics  
 Time Limit at Full Throttle  
 Horsepower & Torque  
 Power vs 503 Power Pack  
 Specific Fuel Consumption vs 503 Power Pack  
 Propeller Tip Speeds  
 Idle - Min (Engine @ 1690)  
 Idle - Max (Engine @ 2600)  
 Cruise - Mid (Engine @ 5400)  
 Takeoff - Max (Engine @ 6175)

**E SERIES**

**Challenger Light Sport EL-65**

Included  
 Included  
 Included  
 Included  
 Included

Warp Drive 60" 3-Blade Carbon Fibre  
 Ground Adjustable  
 100% Carbon Fibre  
 Wide Tip for Max Thrust  
 Optional Prop Upgrade  
 Optional Prop Upgrade

Included  
 Included

Standard  
 Standard

Special Order Option  
 Special Order Option

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

Engine + Redrive + Prop  
 Smooth from Low Idle to Takeoff Thrust  
 Wide Not Peaky  
 No Time Limit  
 Curves Peak Concurrently At Takeoff Power  
 Horsepower +30% / Torque + 34%  
 -22.7%  
 Very Low for Max Efficiency and Min Noise  
 Prop @ 650 rpm Tips @ 115 mph 0.15 mach  
 Prop @ 1000 rpm Tips @ 175 mph 0.23 mach  
 Prop @ 2075 rpm Tips @ 370 mph 0.48 mach  
 Prop @ 2375 rpm Tips @ 425 mph 0.55 mach

**X SERIES**

**Challenger Light Sport XL-65**

Included  
 Included  
 Included  
 Included  
 Included

Warp Drive 60" 3-Blade Carbon Fibre  
 Ground Adjustable  
 100% Carbon Fibre  
 Wide Tip for Max Thrust  
 Optional Prop Upgrade  
 Optional Prop Upgrade

Included  
 Included

Standard  
 Standard

Special Order Option  
 Special Order Option

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

Engine + Redrive + Prop  
 Smooth from Low Idle to Takeoff Thrust  
 Wide Not Peaky  
 No Time Limit  
 Curves Peak Concurrently At Takeoff Power  
 Horsepower +30% / Torque + 34%  
 -22.7%  
 Very Low for Max Efficiency and Min Noise  
 Prop @ 650 rpm Tips @ 115 mph 0.15 mach  
 Prop @ 1000 rpm Tips @ 175 mph 0.23 mach  
 Prop @ 2075 rpm Tips @ 370 mph 0.48 mach  
 Prop @ 2375 rpm Tips @ 425 mph 0.55 mach