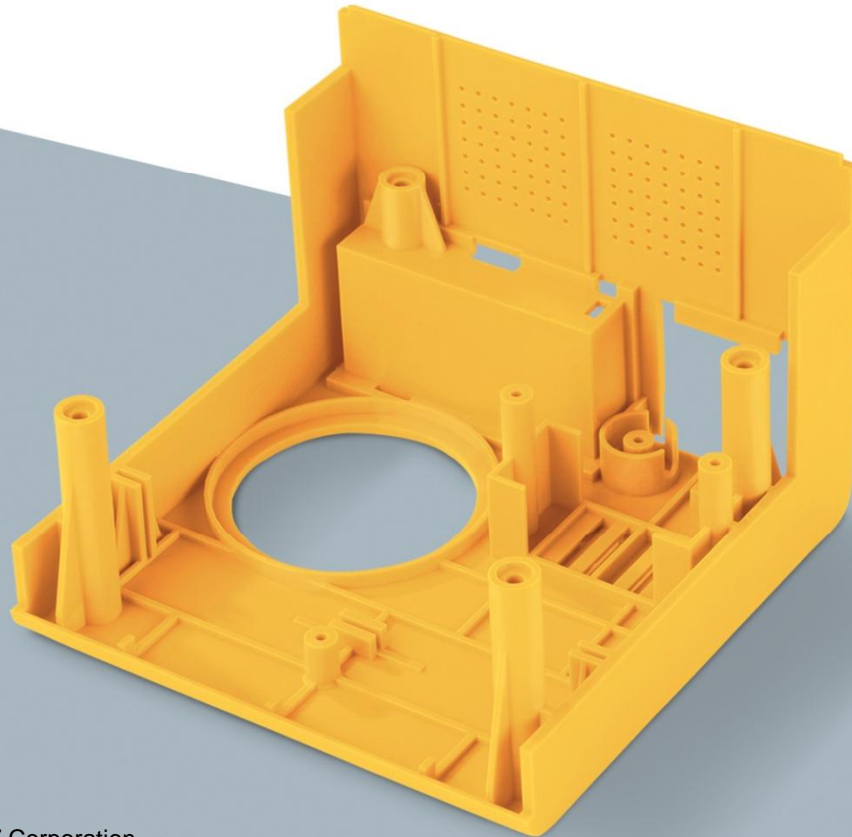


# ZBuilder™ ULTRA

ACCURATE, HIGH-RESOLUTION **PLASTIC PROTOTYPES**



Z CORPORATION®

# ZBuilder Ultra

Accurate, High-Resolution Plastic Prototypes



Z CORPORATION®

- Delivers the capabilities of a high-end rapid prototyping system at a fraction of the cost



# ZBuilder Ultra

## Applications



Z CORPORATION®

- Evaluate product designs prior to full-scale production
- Verify designs for form, fit and function
- Create concept models to improve communication and refine designs



# ZBuilder Ultra

## Overview



Z CORPORATION®

- Duplicate digital CAD models precisely
- Build true functional parts
  - Durable, uniform plastic
  - Razor-thin walls and sharp detail
  - Ultra-smooth surface finish
- Save time - 2X faster than other RP systems



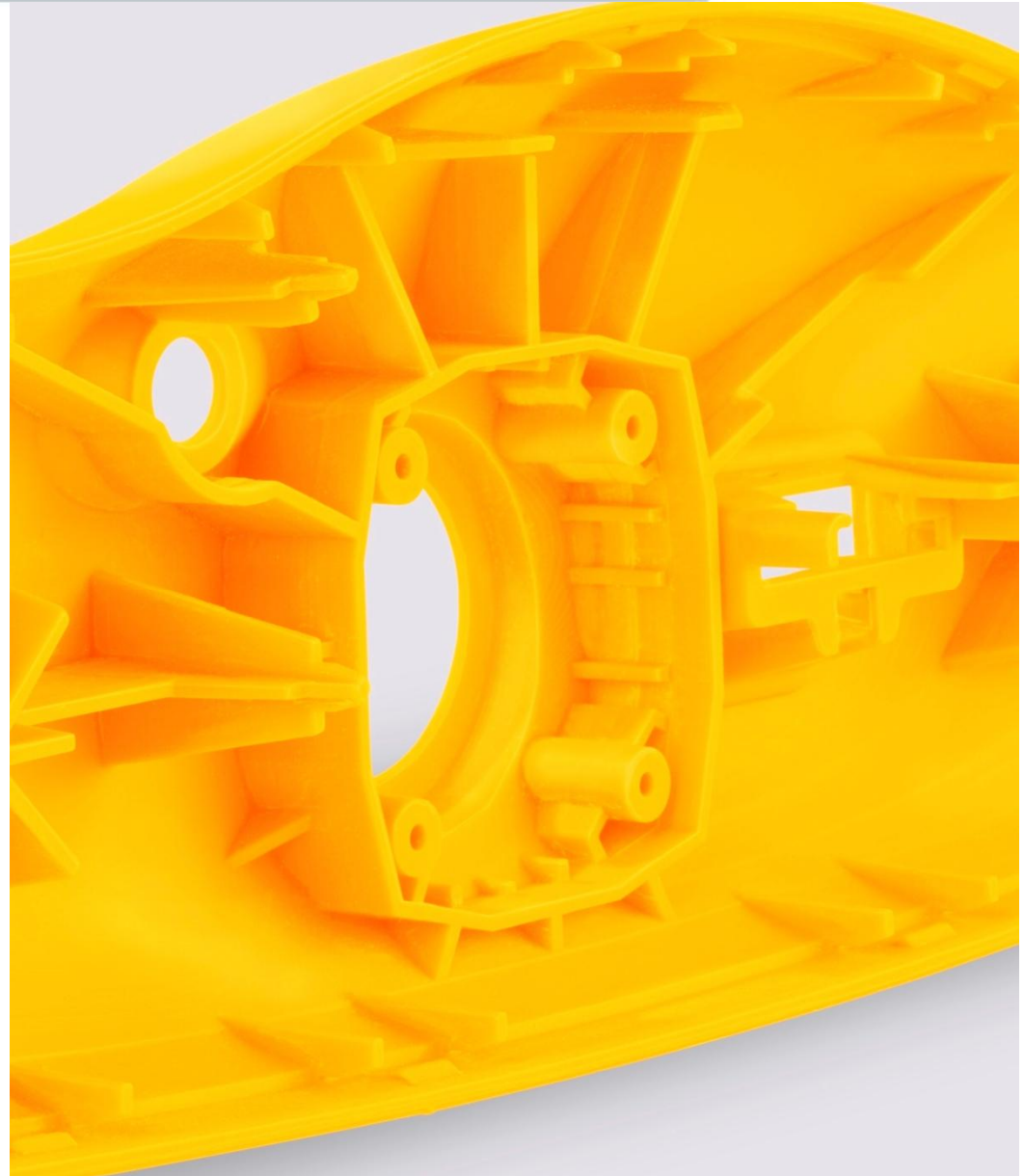
# ZBuilder Ultra

## Duplicate Digital CAD Models Precisely



Z CORPORATION®

- All features within +/- 0.008 inches\* (+/- 0.2 mm\*)
- Precision optics and motion systems for repeatability
- Only movement in the Z-direction



*\*Typical (may vary by geometry, part orientation, build parameters, and process)*

# ZBuilder Ultra

## Build True Functional Parts



Z CORPORATION®

### Durable, Uniform Plastic

- Functional parts require material properties that rival final parts
- Strong and flexible
- Consistent regardless of orientation

### Materials Performance

- Tensile Strength: 6240 PSI (43.0 MPa)
- Tensile Elongation at Break: 4.50%
- Flexural Strength: 8740 PSI (60.2 MPa)
- Flexural Modulus: 263 kSI (1810 MPa)
- Hardness: 86D
- HDT (0.45 MPa): 132.3 F (55.7 C)
- HDT (1.82 MPa): 116.3 F (46.8 C)

# ZBuilder Ultra

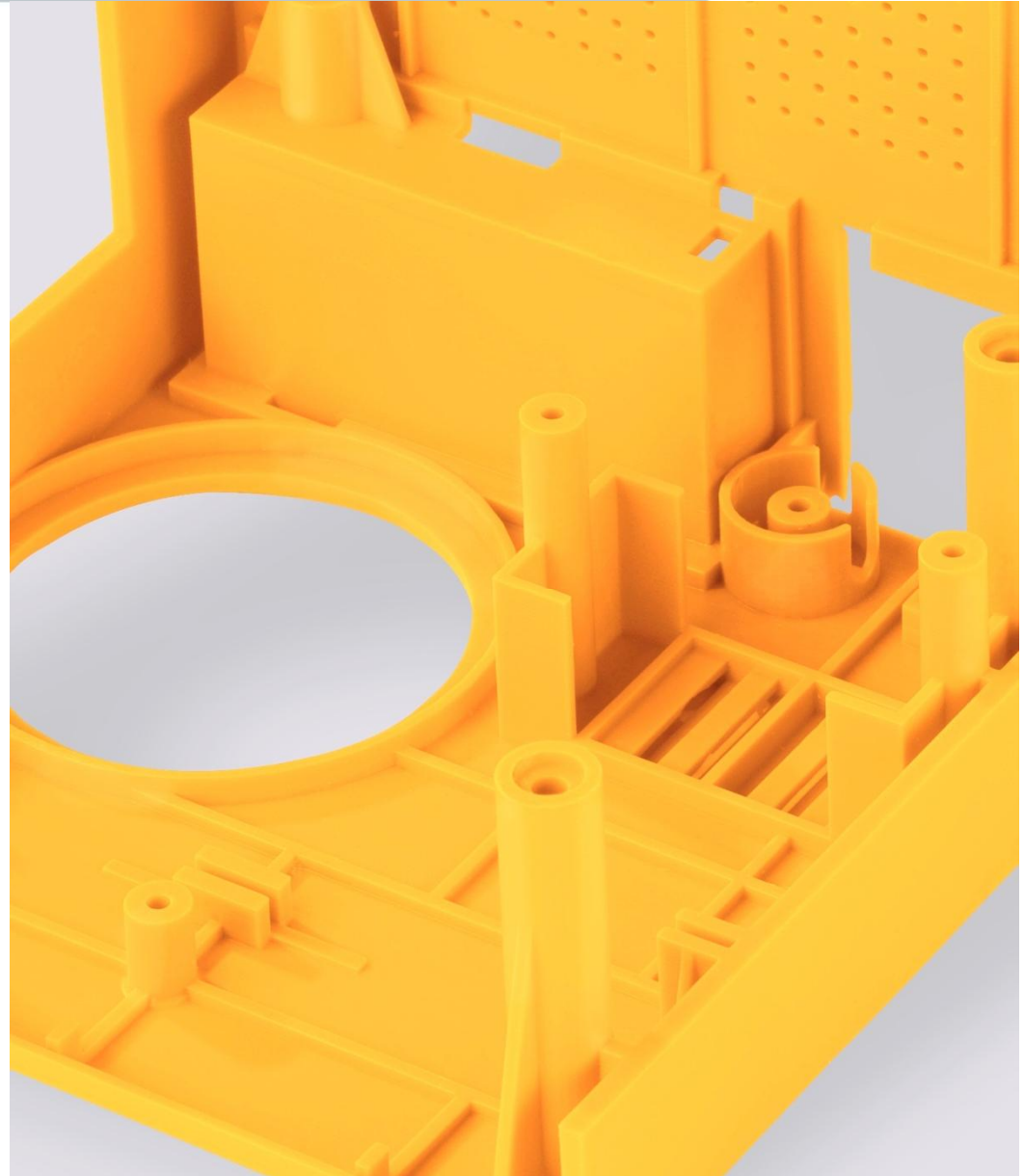
## Build True Functional Parts



Z CORPORATION®

### Razor-Thin Walls and Sharp Detail

- Minimum feature size 0.005 inches (138) microns
- X/Y resolution from highest resolution DLP engine
- Precise control of light source delivers sharp edges



# ZBuilder Ultra

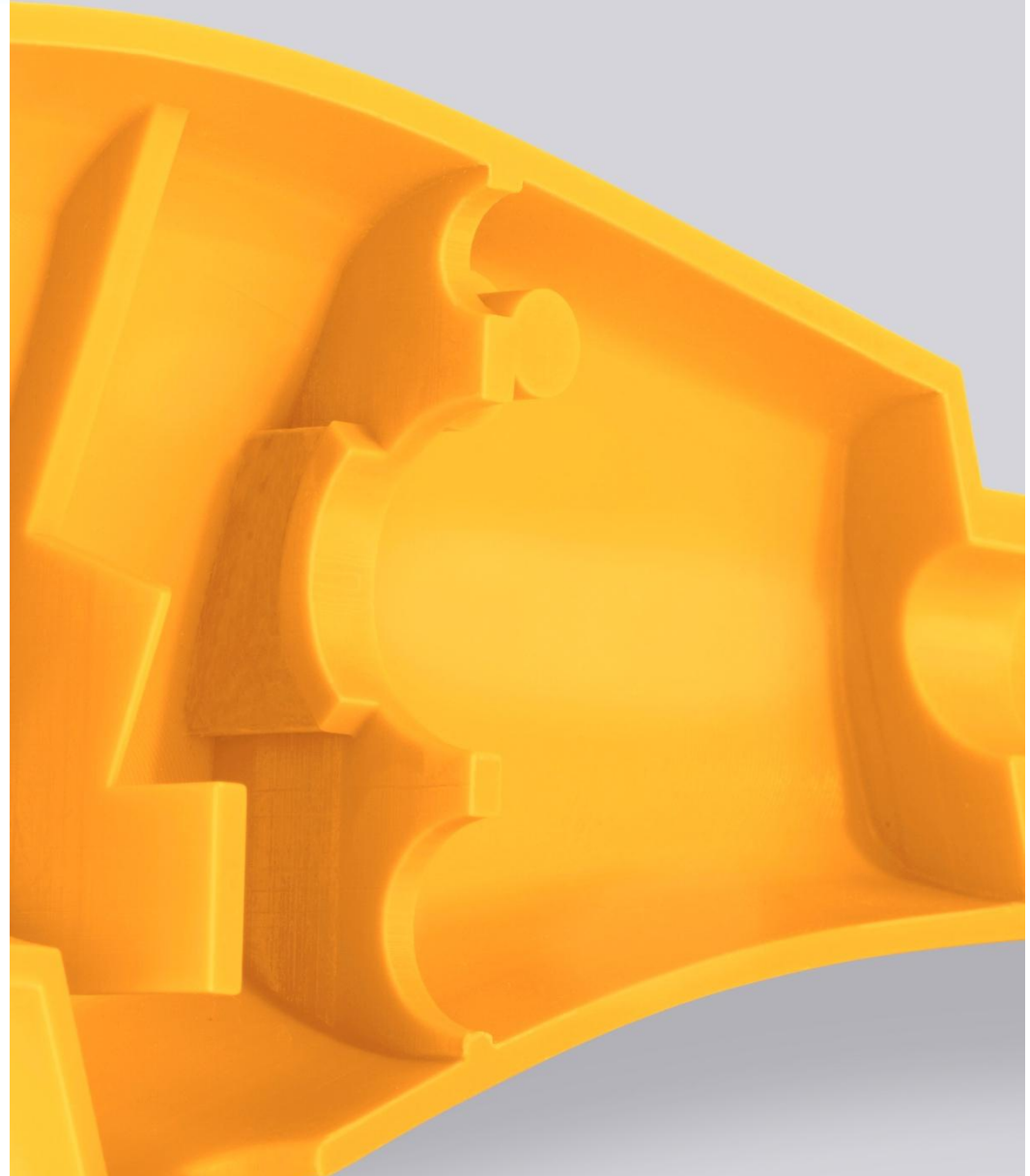
## Build True Functional Parts



Z CORPORATION®

### Ultra-Smooth Surface Finish

- Parts appear injection molded
- Precise control of each voxel (3D pixel)
- No “stair stepping”



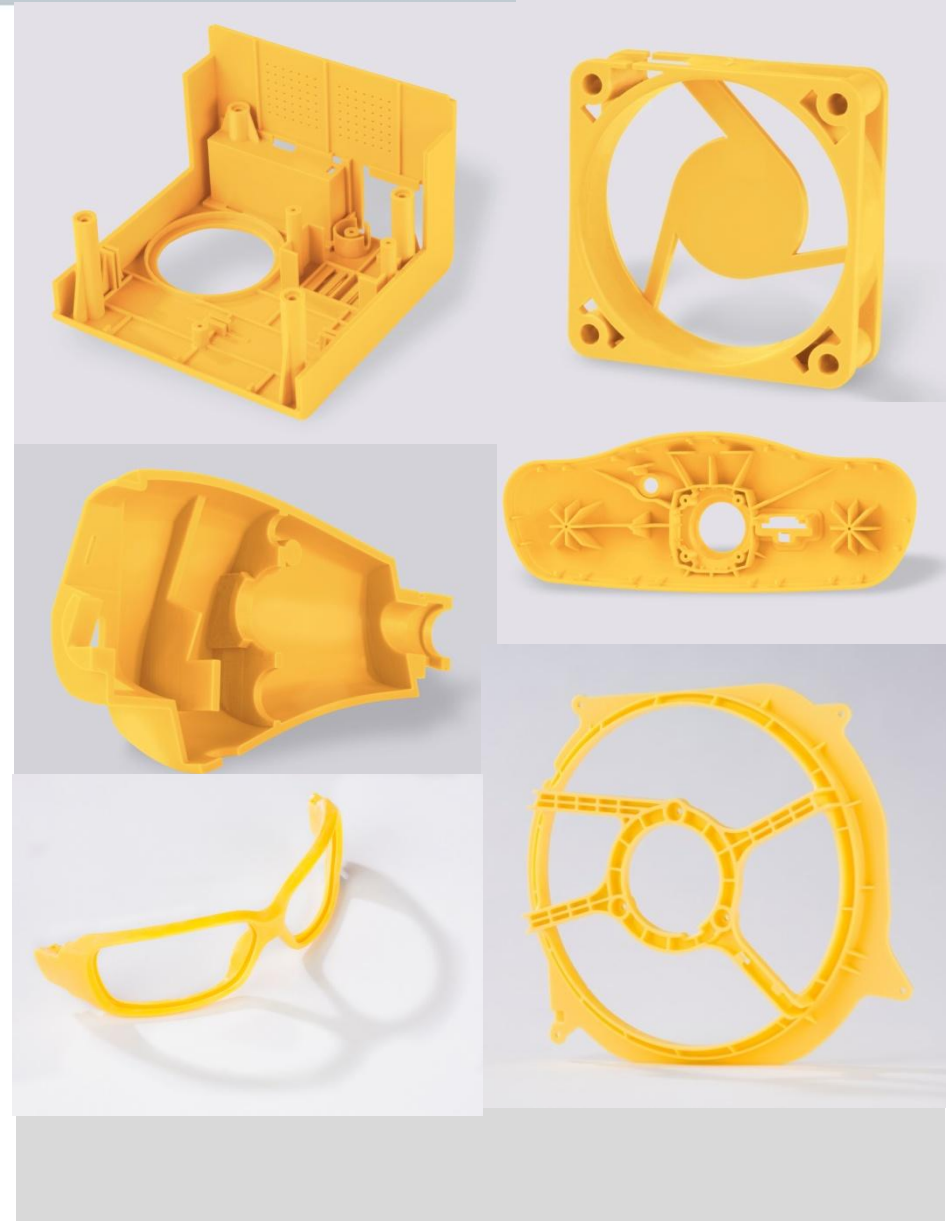
# ZBuilder Ultra

Save Time - 2X Faster Than Other RP Systems



Z CORPORATION®

- Build prototypes quickly, for verifying designs the next day
- Speed is independent of how many parts are in the build; the entire cross-section is imaged at once
- Only seconds per exposure



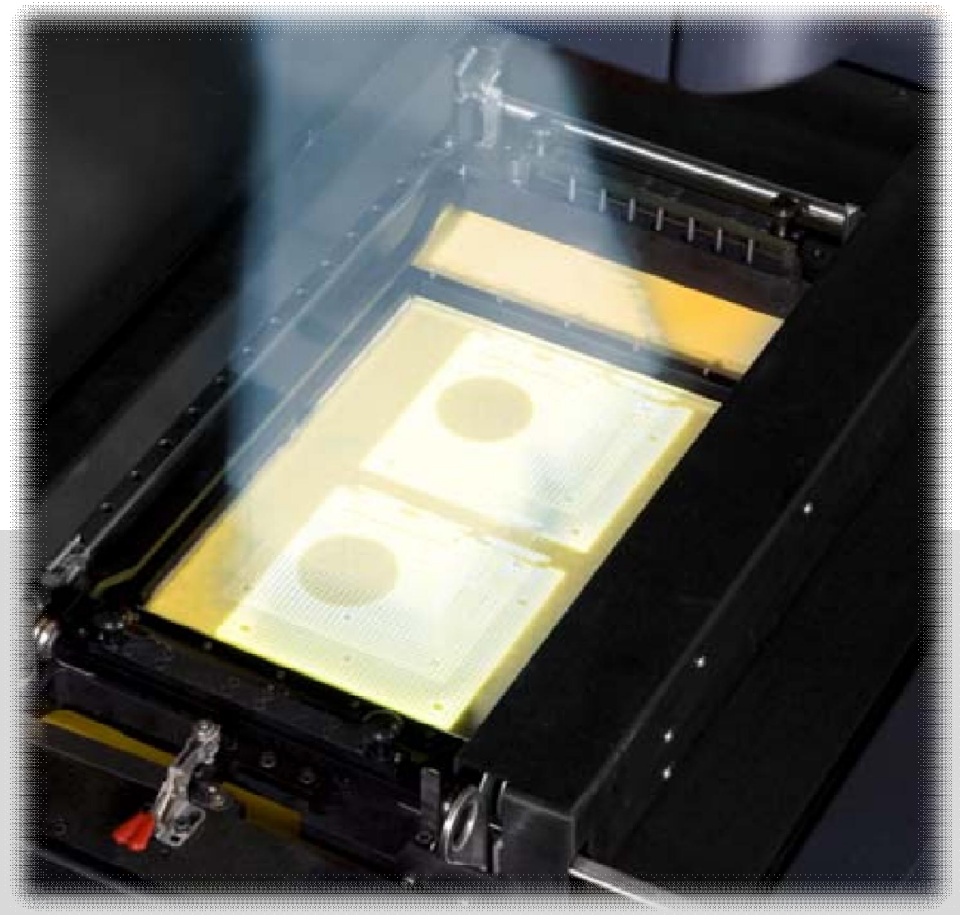
# ZBuilder Technology

## How it Works



Z CORPORATION®

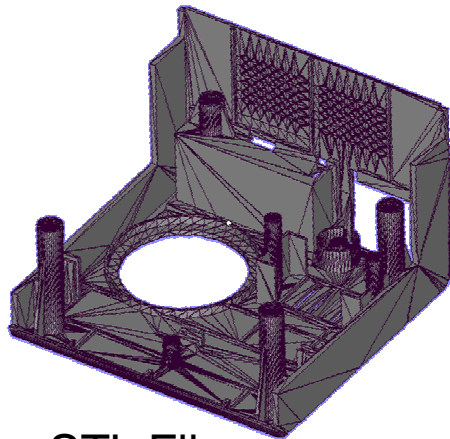
- High-resolution DLP system instead of complex laser technology
- Highly controlled exposure for each voxel
- Exposed photopolymer solidifies into robust solid plastic



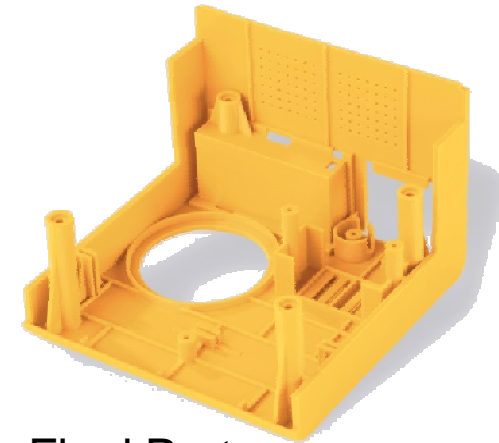
# ZBuilder Ultra Process



Z CORPORATION®



STL File



Final Part

## Desktop PC

- Prepare parts in Magics
- Generate build files in Perfactory® RP

## ZBuilder Ultra

- Machine builds part on supports where necessary

## Finishing

- Supports are removed and part is washed

# ZBuilder Ultra

## Specifications



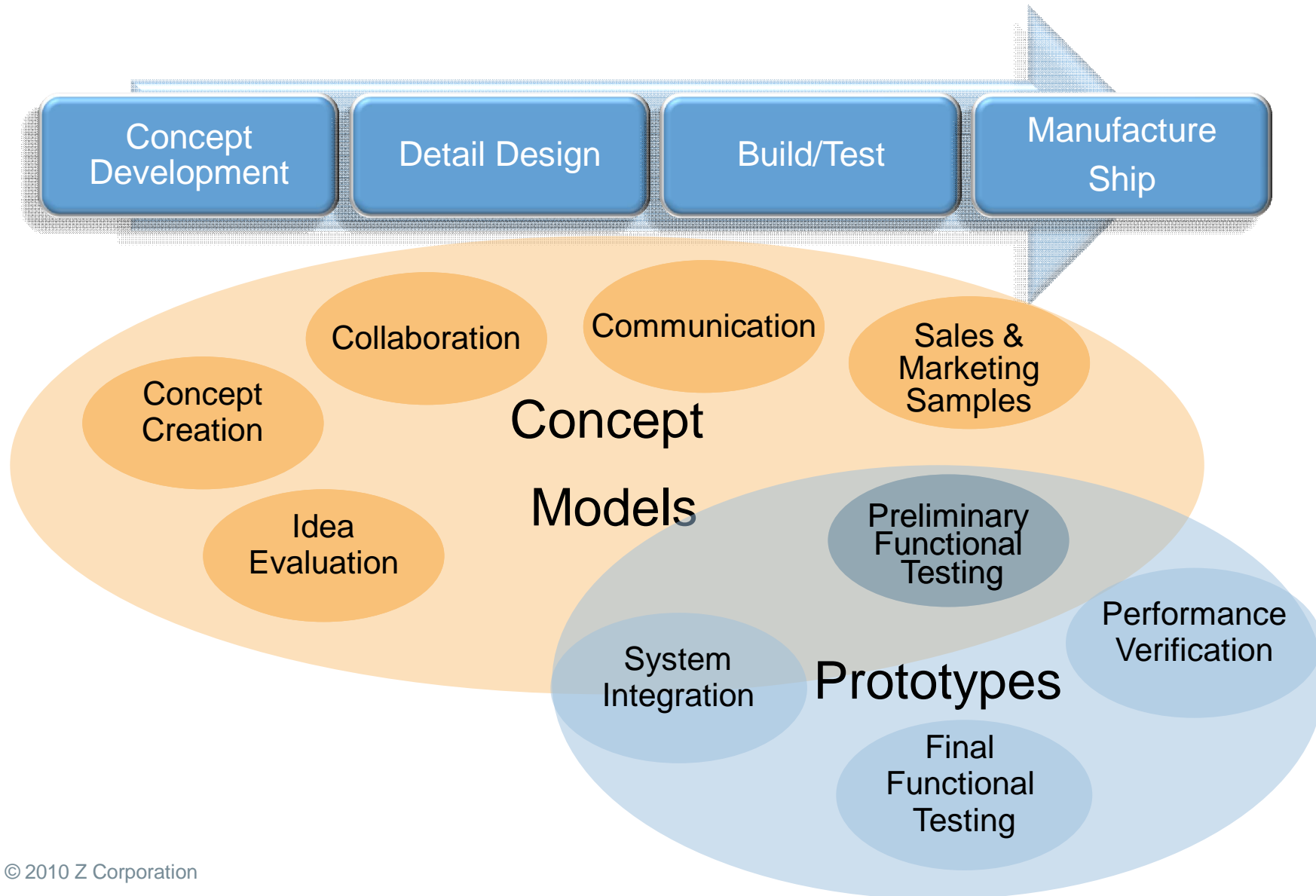
Z CORPORATION®

- X/Y Resolution: 0.005 inches (138 microns)
- Z Resolution: 50 – 100 microns (adjustable)
- Minimum feature size: 0.005 inches (138 microns)
- Accuracy: +/- 0.008 inches\* (+/- 0.2 mm\*)
- Vertical Build speed: up to 0.5 inch/hour (12.7 mm/hour)
- Build Size: 10.2 x 6.3 x 7.5 inches (260 x 160 x 190 mm)
- *\*Typical (may vary by geometry, part orientation, build parameters, and process)*
- Input File Formats: stl, 3ds, dxf, obj, wrl, zpr
- Dimensions: 28 x 30.5 x 71 inches (71.1 x 77.5 x 180.3 cm), with optional stand
- Weight: 360 lbs (163 kg)
- Power Requirement: 115V, 10A; 230V, 6A
- Regulatory Compliance: CE, CSA

# Part Use in the Design Process



Z CORPORATION®



# Part Attributes - Thickness



Z CORPORATION®

- Moderate to Bulky
  - .150” and up



- Thin Walled
  - .050” to .300”



Z Printer

Z Builder

# Part Attributes – Mechanical Properties



Z CORPORATION®

- High Strength
  - 44 MPa Flexural Strength
- High Stiffness
  - 10,700 MPa Flexural Modulus
- High Strength
  - 60 MPa Flexural Strength
- High Flex
  - 1810 MPa Flexural Modulus

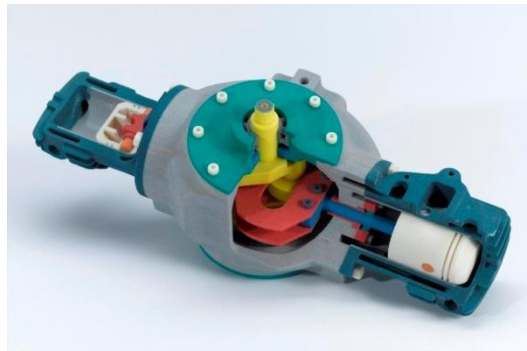


# Part Attributes - Appearance



Z CORPORATION®

- Full Color
  - Concept Models, Sales and Mktg samples



- Monochrome
  - Engineering Prototypes



Z Printer

Z Builder

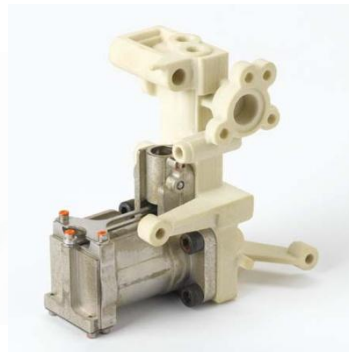
# Part Attributes – Cost



Z CORPORATION®



Draft



Basic Functional



Presentation



# Other considerations



## Usage/Throughput

- Multiple models per day
- Few models per week

## Facilities

- Office (or shop/lab)
- Shop/Lab



# Part Costs



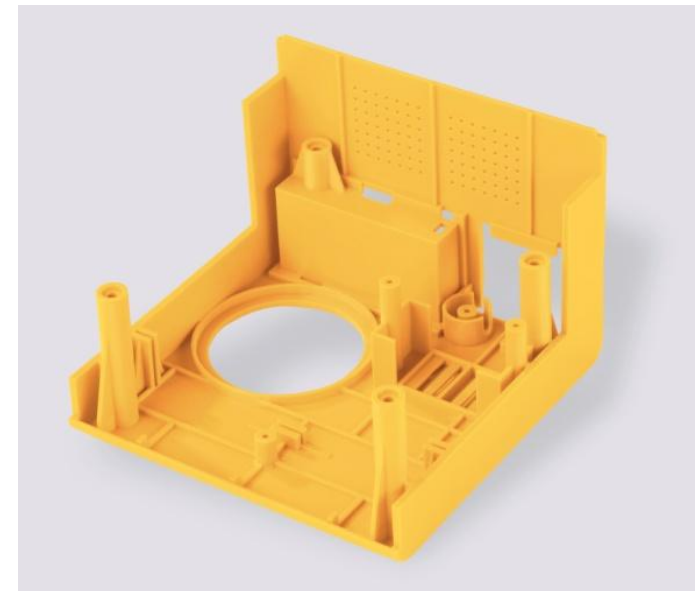
Z CORPORATION®

Average part cost is about 0.5€ per cm<sup>3</sup>. (0.4€-0.8€ possible)

- This includes supports and residual resin
- Does not include bulb and PSA amortization
- Competitive to Dimension, below the cost of Objet

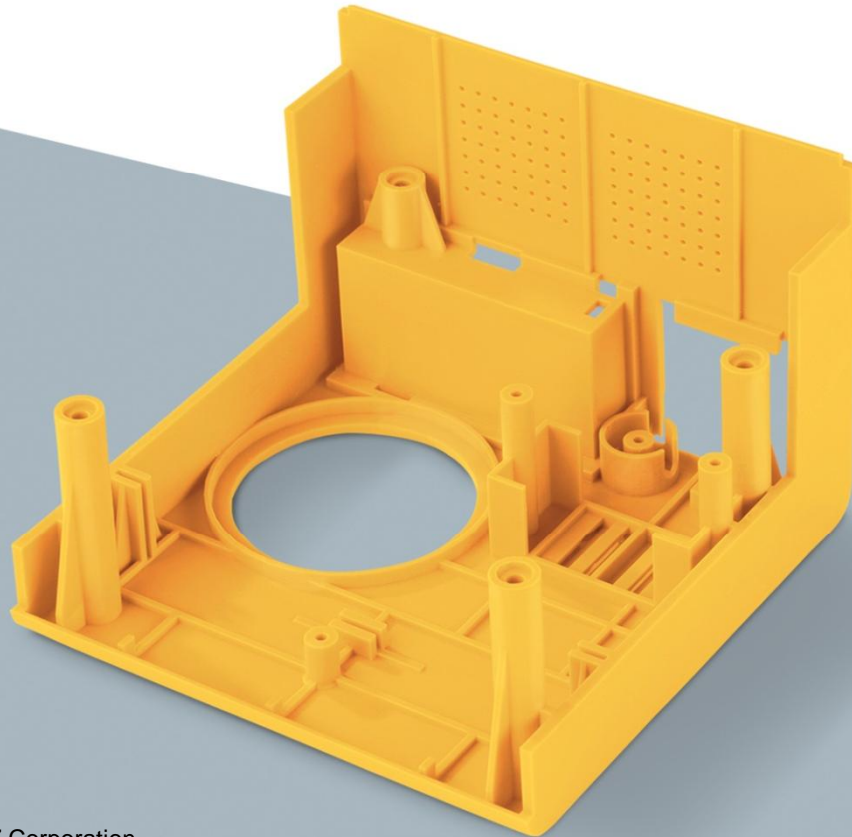
## Example: Neverlate Clock Housing

- Actual material used: 182g
- Price for material: 235/kg
- Cost of part: 42.77€ (0.54€ per cm<sup>3</sup>)



# ZBuilder™ ULTRA

ACCURATE, HIGH-RESOLUTION **PLASTIC PROTOTYPES**



Z CORPORATION®