# **Leaders in Innovative Casting Technology**

# Graphicast.

# TAKING INNOVATIVE CASTING TECHNOLOGY TO YOUR BOTTOM LINE

# **Experience the Graphicast Advantage!**

- High Perfomance Zinc Alloy Material •
- Low Cost Graphite Mold Approximately \$2500
- Economic Advantage With Volumes As Low As 200/Yr.
  - Tool Up Faster Than Die Casting
  - ISO Certified Made In The USA •

Learn How You Can Benefit from the Graphicast Advantage.

Call Today for Info or a Quote! (603) 532-4481

## **Try our Free Online Estimator**

Scan this QR code or go online to: **Graphicast.com**/estimator







Graphicast.com



# **Complex Part Geometries - Low Volume Part Production**

Every part presents its manufacturing challenges. If looking to cast a part, take advantage of the process and incorporate as many cast features as possible. Below are things to consider when designing a casting for the graphite mold process at Graphicast.

### **Casting Design**

- Less than 7 pounds or 32 cubic inches
- Should fit on a legal size sheet of paper, approximately 8.5" x 14"

#### **Machining Capabilities**

- True position of holes .002" or bilaterally of +/ .001".
- True position of tapped holes .010" or a bilateral tolerance of +/-.005"
- Surface to surface: under 6.00" +/-.0005", over 6.00" +/-.001"

- Minimum wall thickness .125" or 3mm
- Minimum draft angle 2°
- Our process relies on large gate areas to fill part cavity
- Size tolerance on hole +/-.0005" up to 2.00" diameter. over 2.00" +/-.00075".
- Flatness & parallelism .0005".
- Machined surface finish min. 32 Ra
- Concentricity .0005"

ZA-12 Physical Properties vs. Other Casting Materials					
Materials	ZA-12	Other Casting Materials			
Properties	Zn/11Al/.75 Cu Graphicast Process	Alumir Sand Cast	num 356-T6 Permanent Mold	Bronze 85-5-5-5 Sand Cast	Class 30 Iron
Tensile Strength (psi x 10 <sup>3</sup> )	50	33	38	37	34
Yield Strength (0.2% offset, psi x 10 <sup>3</sup> )	31	24	27	17	-
% Elongation (in 2 inches)	2-3	3.5	5	30	-
Brinell Hardness (500 kg load)	110-125	70	80	65	180-225
Density (lb/in <sup>3</sup> )	.22	.10	.10	.32	.26
Young's Modulus (psi x 10 <sup>5</sup> )	12	10.5	10.5	13.5	13-16
Fatigue Strength (psi x 10 <sup>3</sup> @ 5 x 10	<sup>8</sup> cycles) <b>15</b>	8.5	13	11	14
Thermal Expansion (µ inch/inch/°F@	68°-212° F) <b>13.4</b>	11.9	11.9	10.1	6
Thermal Conductivity (BTU/ft/hr/ft <sup>2</sup>	@ 68° F) <b>67</b>	87	92	40	26
Electrical Conductivity (% Cu)	28	39	41	15	-

NOTE: Figures are correct, but are not warranted in any way by Graphicast, Inc. For structural applications above 200° F, or for detailed fatigue, impact, or creep strength properties, contact Graphicast.



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### Additional Value Added Processing

- In house dot peen part marking
- In house part tumbling
- In house pin, Pem, bushing, bearing and light assembly
- Out sourced paint, plate and protective finishes
  - Powder coat 
    Paint
  - Chromate 
    Cerakote
  - E coat

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