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CRDM SLS (Selective Laser Sintering) Service for Plastic Parts

SLS Parts are great value for money and ideal for visual aids, jigs & fixtures, fit, function and assembly prototypes as well as direct ALM production parts, all direct from 3D CAD with no tooling.

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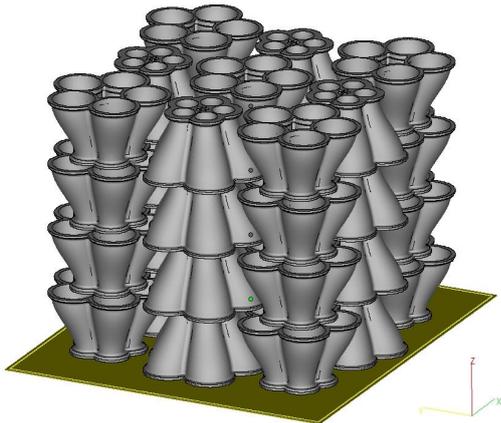
Outstandingly consistent, high quality parts time after time - achieved by using 0.1mm build layer resolution and 'in process' Advanced Temperature Control (ATC).

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As a large capacity SLS facility, CRDM has the scale of operation to offer a fast turnaround 2 - 3 day delivery service and competitive pricing due to our high throughput and high build densities (making the machines more efficient).

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SLS machines have a 3D build volume - parts can be stacked or arranged vertically. This means large numbers of parts can be made in each build, plus they can all be the same or different. But the more parts in a build, the more efficient it is and so the price we can give is better !



SLS Parts from CRDM ...

- SLS is our fastest prototyping technology
- PA12 (Nylon) or PA12-GF parts tough functioning parts
- Typically 2 - 3 day turn around (order today, build tonight, ship tomorrow!)
- ALM Production parts (high volumes of parts from 3D build volume) with vibro finishing part

processing

- Significantly better surface definition when component is built with 0.1mm rather than 0.15mm or 0.2mm layers
- (0.1mm layer thickness is standard for CRDM SLS parts)
- Manufacturing SLS Parts since 1997
- Over 900 hours per week
- Over 40,000 parts per annum
- Purpose Built SLS Facility
- Batch to batch repeatability

Available Materials:

PA12 Polyamide (Duraform) & PA12-GF (Duraform GF)

The **PA12 and PA12-GF 30% GF Nylon** materials used in the **SLS (Selective Laser Sintering)** system offers the

most durable prototype parts from any RP system. The tough Nylon 12 is heat resistant up to 150°C and is the obvious choice for functional prototypes that are to be used in working situations.

With an improved accuracy and smoother surface quality this system now suits all manufacturing sectors. The GF 30% material offers a much stiffer and slightly higher HTD, when a more rigid structure is required. Please download the CRDM [Tolerance Standards](#) PDF for SLS tolerances.

SLS - Selective Laser Sintering prices are generally lower than SLA modeling due to the reduced post finishing required from this powder based system. The self supporting powder system also has the advantage of a multiple build option where large numbers of the same component can be built in one build, drastically reducing the individual part cost. This has applications for direct manufacturing and low-volume prototype runs.

High Performance SLS Materials

CARBONMIDE

CRDM has introduced a new generation of structural **SLS (Selective Laser Sintering)** materials to complement the Duraform materials.

One of these is **Carbonmide**. A naturally black, carbon filled, light weight, material which was originally designed for wind tunnel usage. The 0.05mm long carbon strand makes up 50% of the total density, the remainder being Polyamide (Nylon 12).

Strength and stability under wind-load and vibration makes this the preferred **SLS (Selective Laser Sintering)** material for F1 and aerospace use. Coupled with its high heat deflection temperature of 175°C **Carbonmide** is well suited to the most arduous task.

Carbonmide's light weight, high UTS characteristics, excellent surface finish, and resistance to wear, compared to standard **SLS (Selective Laser Sintering) PA12** and **SLS PA12-GF**, also lends the technology to the low-volume direct manufacture of parts for race-cars and motorcycles, without the weight penalty.

Carbonmide offers an alluring, black, sparkling look, appreciable in many design applications.

Carbonmide

is particularly suited to applications which require superior mechanical properties, extremely high performance.

Aluminium Filled Polyamide (PA12-AL)

PA12-AL is made up of 50% fine aluminum powder suspended in PA12 Polyamide (Nylon 12).

A Typical application for **PA12-AL** is the manufacture of stiff parts of metallic appearance for applications in automotive manufacture (e.g. wind tunnel tests or parts that are not safety relevant), for tool inserts for injection moulding small production runs, for illustrative models (metallic appearance), and for jig manufacture, among other aspects.

The surfaces of parts made from **PA12-AL** can be finished by grinding, polishing, or coating. An additional advantage is that low tool-wear machining is possible, e.g. milling, drilling, or turning.

DURAFORM EX

This impact-resistant plastic offers the toughness of injection-moulded polypropylene and ABS.

Duraform EX's

finer powder grain size results in a much smoother surface finish and the extra strength makes

Duraform EX

perfect for 'living hinges' (please discuss any live hinge requirements with one of our engineers before ordering) and functional prototypes that require end-use performance properties, and is suitable for Rapid Manufacturing.

Available Technology

CRDM Ltd operates **6 X SLS (Selective Laser Sintering)** machines.

With this large capacity we are now offering a lead time of just **2-3 days** and a maximum build area of 380mm X 350mm X 400mm.

Available Finishes

Chrome Plating & Vacuum Metalising – Bright, Satin, Silver or Gold

Full Painting and Graphics Service - References to Pantone, NCS, Ral, and VDI or Moldtech specified by you.

[How SLS - Selective Laser Sintering works](#)