



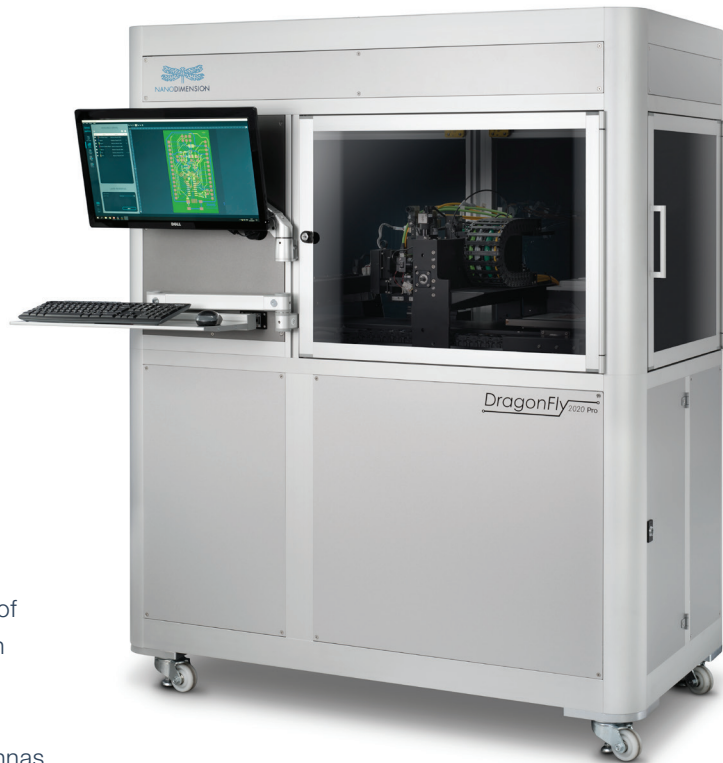
NANO DIMENSION

## DRAGONFLY™ 2020 PRO 3D PRINTER FOR PROFESSIONAL ELECTRONICS

### SAVE TIME, MINIMIZE DEVELOPMENT RISK AND GET TO MARKET FASTER WITHOUT SECURITY RISKS

Nano Dimension's DragonFly 2020 Pro 3D printer is transforming additive manufacturing for electronics development. We empower companies to take control of their entire development cycles by 3D printing their own circuit boards. From proofs of concept and to design validation and testing fixtures, in-house 3D printing of multilayer Printed Circuit Boards (PCBs), sensors, antennas, magnetic components, molded connected devices, non-planar geometries or other electronic elements, shortens design and test cycles, from months or weeks to days.

The DragonFly 2020 Pro is a multi-material 3D printer that brings together an extremely precise inkjet deposition printer, dedicated nano inks, and novel software so designers and engineers can effortlessly print conductive and insulating materials in one print job. The DragonFly Pro makes it possible to print electronic circuits directly into components to create both standard and truly revolutionary fully functional free-form electronics, within hours. In addition, the full range of PCB features can be 100% printed – including interconnections such as vias, through-holes and complex geometries – without etching, drilling, plating, or waste. The application possibilities are endless, including flexible, rigid PCBs, electronics with sophisticated features and encapsulated components.



Nano Dimension's advanced printing platform allows designers and engineers to develop separate parts of the circuit in parallel – testing and iterating on the fly to accelerate innovation of smart products and improve organizational performance. The DragonFly 2020 Pro 3D printer removes many of the complexities and bottlenecks inherent in prototyping, allowing for more agile hardware development processes at every prototyping stage. The result is reduced overall development time, fewer risks and improved design flexibility for a wide range of research and development, prototyping and custom manufacturing projects.

The DragonFly 2020 Pro 3D printer enables companies to bring better electronics to the market in terms of size, weight, and environmental impact, while keeping sensitive design information in-house and staying on budget to enable faster time-to-profit.

## PRINT METALS AND POLYMERS IN ONE PRINT JOB

Nano Dimension's extremely precise inkjet deposition system allows for simultaneous 3D printing of conductive silver nanoparticle ink (metal) and insulating ink (dielectric polymer). This sets new standards for accuracy, complexity, and speed in the fields of both 3D printed electronics and professional electronics development. Upon completion of a 3D print job,

there is no need for post-processing. Multi-material 3D printing is game-changing, allowing designers and engineers to print polymers and metals together to create a functional part. This is a revolutionary approach to making electronics with the potential to be more compact, denser, and ultimately non-planar.

<b>AgCite™ Conductive Ink For Inkjet</b>	An advanced silver nanoparticle ink designed specifically for DragonFly 2020 Pro 3D Printers. The size and distribution of the silver particles are optimized for the printing of highly conductive traces.
<b>Dielectric Ink</b>	This polymer material mimics the dielectric properties of industry FR4. The ink insulates the conductive inks, enabling the printing of the entire circuit structure. The material is stable across large frequency ranges. Designed for compatibility with Nano Dimension's AgCite™ conductive ink.
	Decomposition Temperature (Td2, Td5) 2%-341°C, 5%-376°C
	<ul style="list-style-type: none"> <li>Dielectric Constant – Dk (Permittivity) 3.2@1 MHz, 2.9@1 GHz</li> </ul>
	<ul style="list-style-type: none"> <li>Dielectric Loss – Df (Loss tangent) 0.02@1 MHz, 0.02@ 1GHz</li> </ul>

## DRAGONFLY 2020 PRO 3D PRINTER SPECIFICATIONS (\*Subject to change)

<b>Deposition Technology</b>	Piezo Drop on Demand inkjet printing
<b>Number of Printheads</b>	2 (One per material)
<b>Print Trace/Space</b>	100/125 Micron (4/5 mil)
<b>Build Volume XYZ</b>	20 cm x 20 cm x 0.3 cm (8" x 8" x 1/8")
<b>Software</b>	Proprietary
<b>Dimensions</b>	140 cm x 80 cm x 180 cm (55" x 31.5" x 71") (LxWxH)
<b>Weight</b>	500 kg (1100 lbs) TBD
<b>Power Supply</b>	200-240V AC; 50-60 Hz; 20A
<b>Accuracy</b>	0.001 mm (1 micron)
<b>Build Plate</b>	20 cm x 20 cm (8" x 8")
<b>Operating System</b>	Windows, Mac, Linux
<b>Material Compatibility</b>	Nano Dimension's conductive and dielectric inks
<b>Network Connectivity</b>	Ethernet TCP/IP 10/100/1000, Wi-Fi
<b>File Compatibility</b>	Gerber (ODB++, IPC 2581 in process)
<b>Regulatory Compliance</b>	CE/FCC/RoHS/UL (In progress)
<b>Operational Environment</b>	Temp: 17°C-26°C (66°F-79°F); Relative Humidity: 28-75%

## MAKING ADDITIVE MANUFACTURING INTELLIGENT

Nano Dimension (TASE: NNNDM, NASDAQ: NNNDM) is a leading additive electronics provider that is disrupting, reshaping, and defining the future of how cognitive connected products are made. With its unique 3D printing technologies, Nano Dimension is targeting the growing demand for electronic devices that require increasingly sophisticated features. Demand for circuitry, including PCBs - which are the heart of every electronic device - covers a diverse range of industries, including consumer electronics, medical devices, defense, aerospace, automotive, IoT and telecom. These sectors can all benefit greatly from Nano Dimension's products and services for rapid prototyping and short-run manufacturing.



\*Credit- FAPS Nuremberg