



KERONE
Kerone Engineering Solutions Limited



50⁺ Years
Of experience

MICROWAVE **SPICES DRYER**



ISO 9001:2015 | ISO 14001:2015 | ISO 45001:2018

ABOUT US

Kerone Engineering Solutions Ltd is a global leader in advanced industrial heating, drying, cooling & end to end process engineering solutions. With over five decades of proven expertise, we specialize in designing, manufacturing, and delivering highly customized, cutting-edge systems tailored to the evolving needs of industries worldwide.

Our commitment to engineering excellence, sustainability, digitalization, and technological innovation has positioned us as a trusted partner for businesses across multiple sectors. By integrating Artificial Intelligence (AI), Machine Learning (ML), and Internet of Things (IoT) technologies into our systems, Kerone ensures smarter automation, real-time monitoring, predictive maintenance, and data-driven process optimization—empowering our clients to achieve greater productivity, efficiency, and reliability.



50+

Years of Experience



10,000+

Satisfied Clients



500+

Employee



100+

Experts



50+

Global Presence



50+ Years Manufacturing Excellence



Great Sale Support



Highly Customized Product



Adherence to Standards



Sound Infrastructure



Team of experts Delivering Quality



Timely Delivery



Cost Effective Solutions



INDUSTRIES WE SERVE

- ✓ Food Processing & Agro-Processing
- ✓ Chemicals & Petrochemicals
- ✓ Pharmaceuticals
- ✓ Textiles, Automotive & Aerospace
- ✓ Paper & Packaging
- ✓ Ceramics & Glass
- ✓ Rubber & Plastics
- ✓ Environmental & Waste Management
- ✓ Oil, Gas & Steel Industries



- ✓ Industry Expertise – Over 50 years of global engineering leadership.
- ✓ Custom Solutions – Tailored engineering that meets unique industrial requirements.
- ✓ Global Reach – Trusted by industries across continents with proven reliability.
- ✓ Digital & Smart Systems – AI/ML-powered automation, IoT-based monitoring, and predictive insights.
- ✓ Cutting-Edge Technology – Continuous innovation in heating, drying, and advanced processing.
- ✓ Energy Efficiency – AI-optimized designs for lower energy consumption and sustainability.

QUALITY & COMPLIANCE

At Kerone, quality and compliance are non-negotiable. All our solutions are engineered in adherence to international standards and industry best practices, ensuring maximum safety, durability, reliability, and efficiency. With integrated digital technologies, we enable smarter quality control and compliance tracking across all operations.





Powered by AI/ML & IoT

Microwave Spices Dryer

A Microwave Spices Dryer is an advanced industrial drying system that utilizes microwave energy to remove moisture from spices, herbs, and condiments with exceptional precision and efficiency. Unlike conventional drying methods that rely on external heat transfer, microwave drying works by penetrating the spice material at a molecular level, causing water molecules to vibrate and generate heat from within. This results in a rapid, uniform drying process that significantly reduces processing time while maintaining the natural color, aroma, and essential oil content of the spices. The technology ensures that even the most delicate aromatic compounds and volatile oils – which are often destroyed by prolonged exposure to high external heat – are preserved intact, resulting in a final product that is far superior in quality, fragrance, and market value compared to conventionally dried spices.

Designed for high-capacity industrial operations, these machines are engineered with food-grade stainless steel construction, continuous conveyor belt systems, and intelligent control panels that allow operators to precisely regulate temperature, microwave power, and conveyor speed. The system is capable of handling a wide variety of spices – from whole seeds like cumin and coriander to ground powders like turmeric and chili – making it a versatile and essential component in modern spice processing plants. Its hygienic design, low energy consumption compared to traditional tunnel dryers, and consistent output quality make it a preferred choice for food manufacturers worldwide.

Key Features

- **Uniform Drying**
Microwave energy penetrates evenly throughout the product, ensuring consistent moisture removal without hot or cold spots.
- **Precise Temperature Control**
Digital PLC control system allows accurate adjustment of temperature (typically 40°C–120°C) to suit different spice varieties.
- **Continuous Conveyor System**
Belt conveyor design enables non-stop, high-volume production with adjustable feed speed for flexible throughput.
- **Sterilization Capability**
Simultaneously dries and sterilizes spices by eliminating bacteria, mold, and pathogens without chemical additives.
- **Energy Efficient**
Converts up to 80–90% of microwave energy directly into heat within the product, reducing overall energy consumption significantly.

Advantages

- **Preserves Quality**
Retains natural color, flavor, aroma, and essential oils of spices far better than conventional heat drying
- **No Pre-heating Required**
Machine reaches operational efficiency almost instantly, saving startup time and energy
- **Dual Functionality**
Drying and sterilization achieved in a single pass, reducing the need for additional equipment
- **Faster Processing**
Drying time reduced by 50–70% compared to traditional hot-air tunnel dryers
- **Consistent Output**
Uniform final moisture content ensures product standardization and longer shelf life

Applications

Industry	Description
Spice Processing Industry	Drying and sterilizing whole and ground spices like turmeric, chili, cumin, pepper, cardamom, and coriander
Food Manufacturing	Dehydrating herb blends, seasoning mixes, and flavoring powders used in packaged food production
Tea & Herbal Products	Drying green tea, chamomile, mint, tulsi, and other loose-leaf herbal products
Ayurvedic & Nutraceutical	Processing dried roots, bark, and botanical powders for supplements and wellness products
Agricultural Processing	Post-harvest moisture reduction of seed spices to meet export-grade quality standards
Pharmaceutical Industry	Drying medicinal herbs and plant-based raw materials used in herbal medicine formulations



Technical Specifications

Parameter	Specification Range	Description
Microwave Frequency	915 MHz / 2450 MHz	Standard industrial microwave frequencies for deeper penetration in bulk loads
Microwave Power Output	10 kW – 200 kW	Adjustable power levels to suit different spice types and batch requirements
Operating Temperature	40°C – 120°C	Precise temperature range suitable for heat-sensitive to standard spice drying
Drying Capacity	50 kg/h – 2000 kg/h	Varies by machine model; scalable for small to large industrial operations
Final Moisture Content	8% – 13% (adjustable)	Target moisture level configurable based on spice type and storage requirements
Belt Width	500 mm – 1500 mm	Available in multiple widths to handle varying product volumes
Thermal Efficiency	≥ 80%	High energy conversion rate from microwave to heat within the product
Sterilization Standard	Reduces bacteria by 99%+	Meets food safety sterilization norms for export-grade spice processing
Power Supply	380V / 3-Phase / 50Hz	Standard industrial power supply (customizable for regional specifications)



THANK YOU

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