UV-Vortex-1L R&D system for UV sanitation or UV-modifications of nutrient powders in the Ni-enriched air flow.

for evaluation tests in food, pharmaceutical, cosmetic, bio-medical, and technical applications.

The work principle:
Powder is moved around the central UV lamp by the Ni-enriched air flow with a pre-selected flow density providing a full UV exposure to a powder flow. It is only for homogeneous and preferably one component powders or small seeds.

Applications:
1: The full UVC spectra of the lamp lines and its continuum allows to sanitize powder particles.

2: UVC, UVB and UVA lines, directly or by filtered lines can be used to modify powder nutrient properties. Example: increasing a few 100-times as much the vitamin D3 content in mushroom powders.

Available UVC Sources:
1- a 254 nm low pressure 30 cm long low-pressure Mercury vapour lamp.
2-Pulsed (UV) light source as per a special order.

Evaluation tests
are necessary for finding optimal UV doses and circulation parameters for each powder for each of above purposes since powders vastly differ in particle sizes, its shapes, moisture content, colors, UV absorption, micro-biological contaminations and its spread within the bulk of powder, plus in oil content, density in g/cm^3.

UV chamber:
• diameter-30cm, height is 50cm, volume - 45l, polished stainless steel, a powder collector at its bottom,
• a manually driven quartz cleaner and Ultrasonic quartz cleaner,

Controls:
• an adjustable speed of powder circulation with Volt and Amp- controls,
• viewing the powder flow through the UV absorbing top window,
• a timer,
• T°C controllers.

Maintenance:
top flange, blower, collector, return tubes are de-assembled for cleaning.

Safety features:
1: no UVC leaks,
2. Pre-filled Nitrogen gas fully excludes the powder igniting.

El connection:
208-240 VAC, 1-phase, 50-60 Hz, max ca. 50W.

Size, Weight, Enclosure Material:
60cm wide x 40cm high x 53cm deep,
Polished stainless-steel, weight 42 kg.

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