



# IRD Crystallizing & Drying System



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Sunwell Infrared Rotary Drum (IRD) Crystallizing/Drying System is ideal for processors of PET sheet, film extrusion and injection molding using post-industrial or post-consumer regrind as well as for processors of polyester fiber. The infra-red rays cause molecular heat oscillation acting directly to the core of the particles from the inside-out so the moisture inside the particles are quickly heated and vaporized into the circulating ambient air which removes the humidity. A stainless steel rotary drum with an internal helix transports the materials with a tumbling action to expose all particle surfaces to infrared rays. The output needed is dependent on the drum diameter and length as well as the radiation power. Exposure time and temperature are controlled by the speed and the IR power applied during the process. It provides continuous processing of PET flake, reducing moisture from over 4,000 ppm to less than 200 ppm in 10-15 minutes even could drop to 50 ppm below if combine with desiccant drying system, compared to 5-6 hours for conventional systems. The

short exposure to heat in the IRD preserves Intrinsic Viscosity properties. It has significant benefit for PET material crystallizing and drying.

Advantages in comparison to conventional systems

- Up to 60% less energy than conventional drying systems
- Time and space savings
- Faster start-up and quicker shut down
- Fully continuous process
- Careful material treatment
- No segregation of products with different bulk densities
- High efficiency
- Simple handling and installation

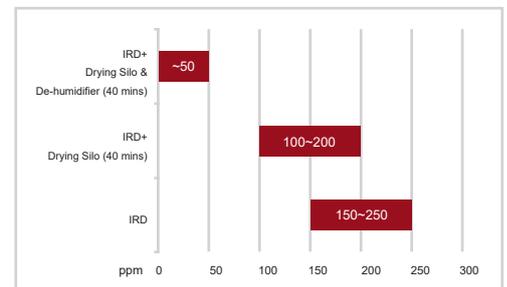
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MAXIMUM PROFITABILITY**

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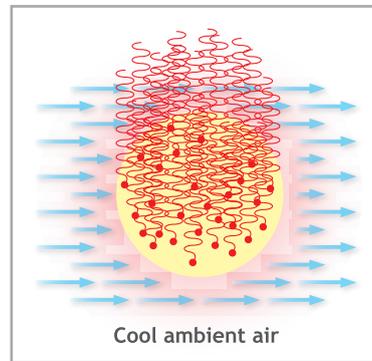
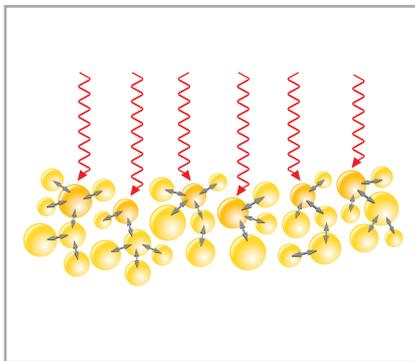
Model	IRD150-270	IRD180-270	IRD180-360	IRD180-450
Drum Size (Dia. x L mm)	1500 x 2700	1800 x 2700	1800 x 3600	1800 x 4500
Feeder Size (Dia. x L mm)	139 x 650	139 x 650	139 x 650	139 x 650
Output Capacity (kgs/hr)	~500	~800	~1200	~1500
Temp. Control Zones	3	3	4	5
Heater Banks	3	3	4	5
Infrared Lamps Power (kW)	135	135	180	225
Feeding Power (kW)	0.75	0.75	0.75	0.75
Drum Turning Power (kW)	0.75 x 2	0.75 x 2	0.75 x 2	0.75 x 2
Cooling Blower (kW)	2.2	3.7	3.7	5.5
Extraction Fan (kW)	2.2	3.7	3.7	5.5

## Moisture after Handling (%)

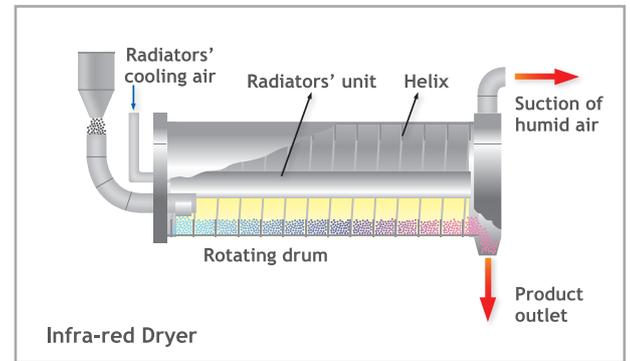


150-200ppm after IRD  
 100-200ppm after IRD + Drying Silo (40 Minutes)  
 Below 50ppm after IRD+ Drying Silo and Dehumidifier (40Minutes)

## Principle & Functions



## Infrared Rotary Drum (IRD) Process



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