

# Quadro Ytron® ZC Disperser

HIGH SHEAR SINGLE-PASS POWDER WETTING & DISPERSING



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# QUADRO YTRON® ZC DISPERSER

## Single-Pass and Continuous In-Line High Speed Powder

### INTENSE POWDER SHEARING ACTION

The Quadro Ytron® ZC Disperser is uniquely engineered to incorporate and disperse even the most difficult-to-wet powders into a liquid stream in a single-pass.

The advanced design of the ZC Disperser's rotor-stator reactor provides for an intense shearing of powders prior to hydration, leading to high speed homogeneous results that are completely free of lumps and "fish eyes".

### DRAMATIC POWDER & BATCH TIME SAVINGS

A near-perfect vacuum is created by the hydrodynamics in the ZC's reactor housing, leading to high speed incorporation rates and achievable solids flow of up to 70% by weight, depending on the product, in a single-pass with minimal air entrainment. Since powder is completely hydrated after passing through the Disperser, product yield can be maximized and wastage is reduced or eliminated.

The high speed dispersion and hydration performance of the ZC technology often results in batch time reductions of up to 90%, with the additional benefit of eliminating dispersion aids such as pre-heating the liquid phase, or the pre-dispersion of ingredients into a non-aqueous solvent. Even with difficult products such as hydrocolloid gums, cellulose gums and carbomers, you can expect complete dispersion in a single-pass.

### SANITARY DESIGN OPTIONS

There are four (4) sanitary models available designed to meet 3-A Sanitary Standards, offering liquid throughputs from pilot scale capacity up to several hundred gallons per minute production. An optional vacuum delivery system is also available, to transfer powder to the ZC hopper with a completely dust-free operation.



Close-tolerance rotor-stator tooling

### DYNAMIC PRINCIPLES

- ZC Disperser operation is based on a close-tolerance, high shear, slotted rotor-stator design
- Rotation of the rotor creates a liquid ring seal that leads to the generation of a significant vacuum build in the reactor housing
- A strong vacuum level ensures that powders in the hopper are drawn into the reactor housing at high rates where they are sheared into the liquid phase, before hydration takes place

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# ler Dispersion

## CONTINUOUS IN-LINE DISPERSION OPTION

Quadro Ytron® ZC-Kontinuum systems are designed to continuously disperse powders into a controlled liquid stream optimizing efficiency and concentration control for critical applications. At the heart of every Kontinuum is the enhanced dispersion performance and benefits of the ZC, with the unique implementation of our new Uniform Film Interface (UFI) technology.

The UFI technology allows a high degree of control accuracy in continuous powder dispersion applications, with achievable in-line concentrations of 50% by weight or higher. The sealed environment around the UFI minimizes dusting in the process area, while improving ease of automation with the use of proximity sensors and machine isolation.

Continuous in-line dispersion can now be accomplished with a high level of confidence and consistency while working within a very compact footprint, in comparison to more traditional swing-tank alternatives. Significant savings are often found not just in manufacturing floor space, but also in product yield returns and just-in-time efficiencies for downstream processing.



## NEW ZC-EZFEED OPTION

- Ergonomic powder dump table integrated into the design
- Large enough table top to stage bags of powder for subsequent dispersion
- Stainless steel construction and gasketed hopper design are well-suited to wash down duty environments and sanitary processing
- Unique maintenance-friendly features such as tool-less disassembly and one-handed base adjustment allows COP items to be removed with ease (e.g. basic hopper and powder valve)
- Product contact areas below the powder valve can be left connected to your mixing system and easily cleaned with a typical CIP process





## APPLICATION EXAMPLES AND MODEL SPECIFICATIONS



COSMETIC/ PERSONAL CARE	FOOD & BEVERAGE	PHARMACEUTICAL	CHEMICAL
Lotions Gels Creams Deodorants Hair Gels & Sprays Mouthwash Shampoos Hair Conditioners Toothpastes Sunscreen Liquid Makeup	Jams Pet Foods Egg Substitutes Salad Dressings Syrups Condiments Gums Stabilizers	Antacids Cough Syrups Granulation Solutions Tablet Coatings Vitamin Dispersions Topical Creams Ointments Lotions Gels	Airplane De-Icer Detergents Paint Drywall Compound Oilfield Products

SPECIFICATIONS		MODEL			
		ZC0	ZC1	ZC3	ZC5
Power	(HP)	3	7.5	20	60
	(kW)	2.2	5.5	15	45
Liquid Capacity*	(gpm)	3 - 12	15 - 40	40 - 120	150 - 400
	(l/min)	11 - 45	57 - 150	150 - 450	568 - 1500
Powder Capacity*	(lbs/min)	30	60	120	1000
	(kg/min)	14	27	55	453
RPM		6500	6500	5000	2220
Inlet Fitting Size	(in)	1	1.5	2	3
	(mm)	25	38	50	75
Outlet Fitting Size	(in)	1	1.5	2	4
	(mm)	25	38	50	100
UFI Option		Yes	Yes	Yes	Yes
EZfeed Option		N/A	Yes	Yes	N/A
CIP Cleanability		Yes 	Yes 	Yes 	Yes 

\*Actual capacities will vary depending upon tooling selection and product characteristics.

SIZE REDUCTION • FLUID MIXING • PNEUMATIC TRANSFER



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