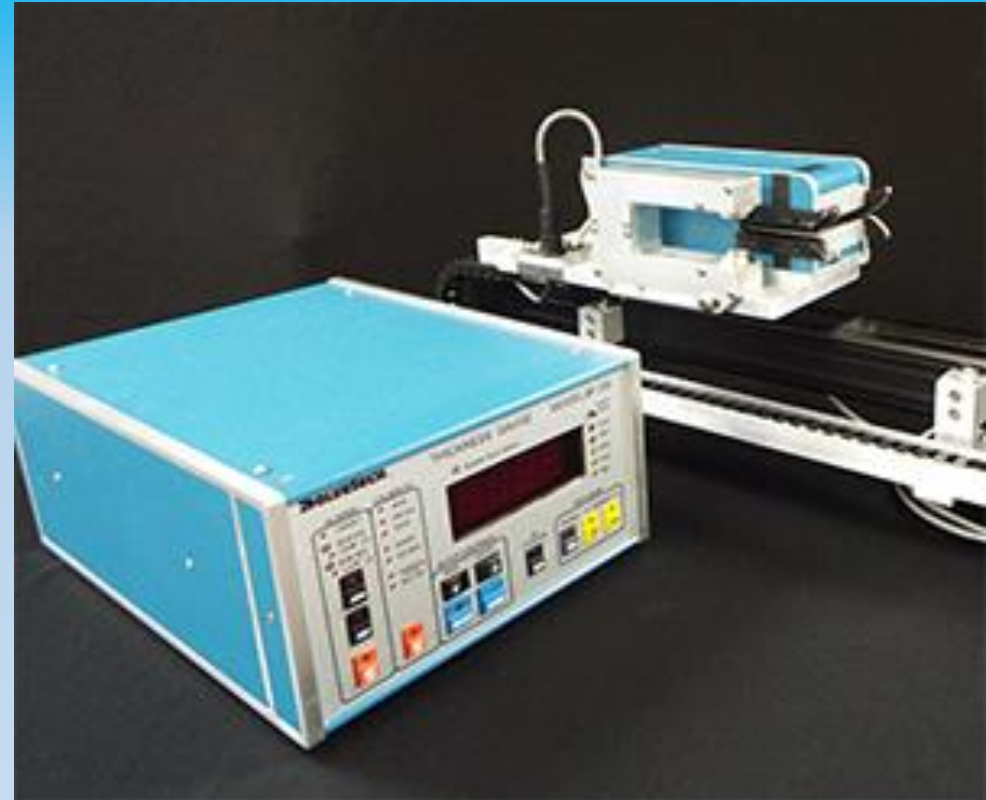


The BF200 Blown Film Gauge

SolveTech, Inc.

Agenda

- About SolveTech
- How It Works
- About the BF200
- See It Work
- Data Collection
- Summary

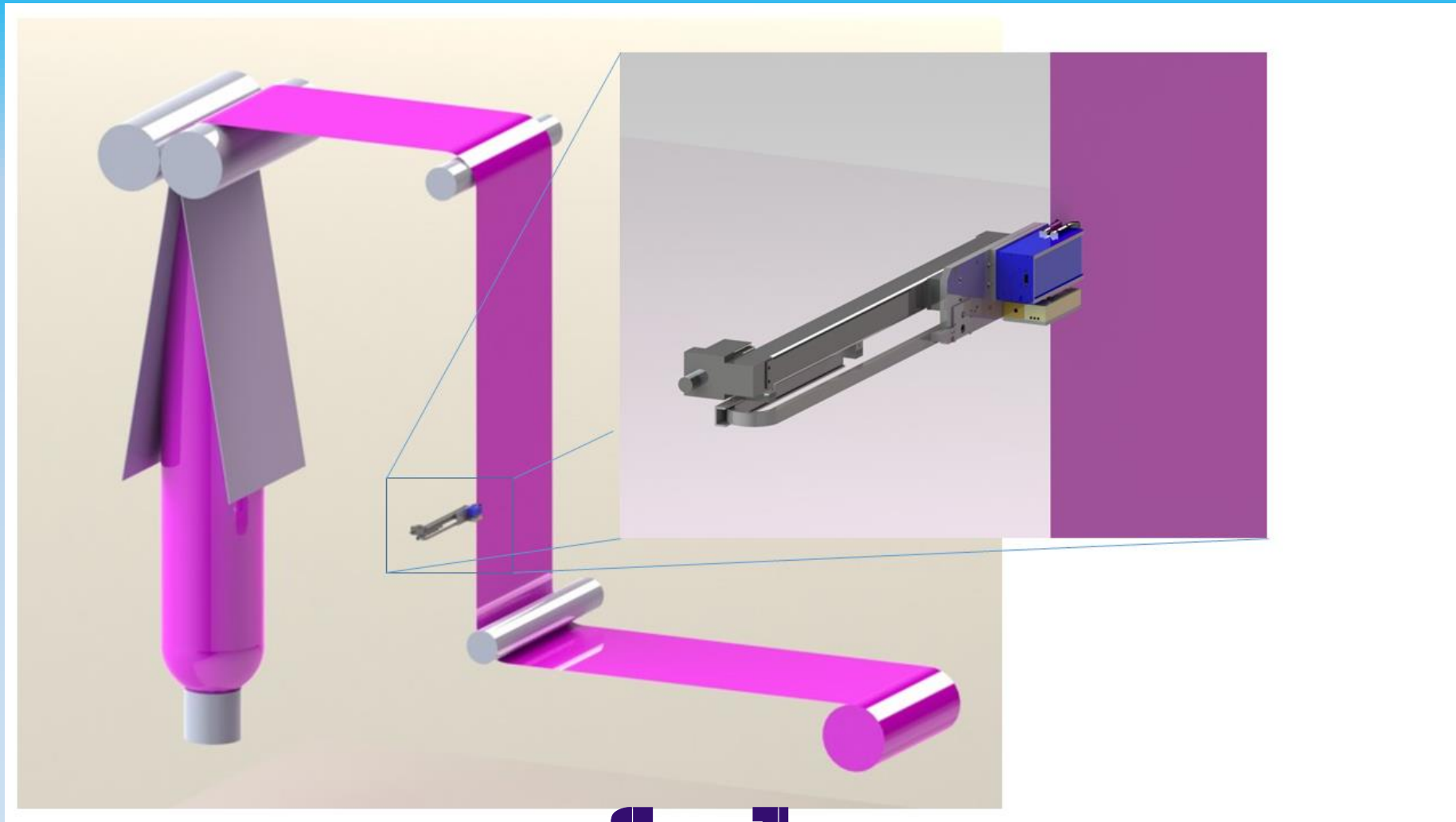


About SolveTech

- Founded in 1981 by Doug Lawrence
- Headquarters and Manufacturing in Wilmington, DE
- Focuses on capacitance gauging technology- On line and in the lab
- Very responsive to customers- attitude of service and providing value.
- Can custom engineer solutions

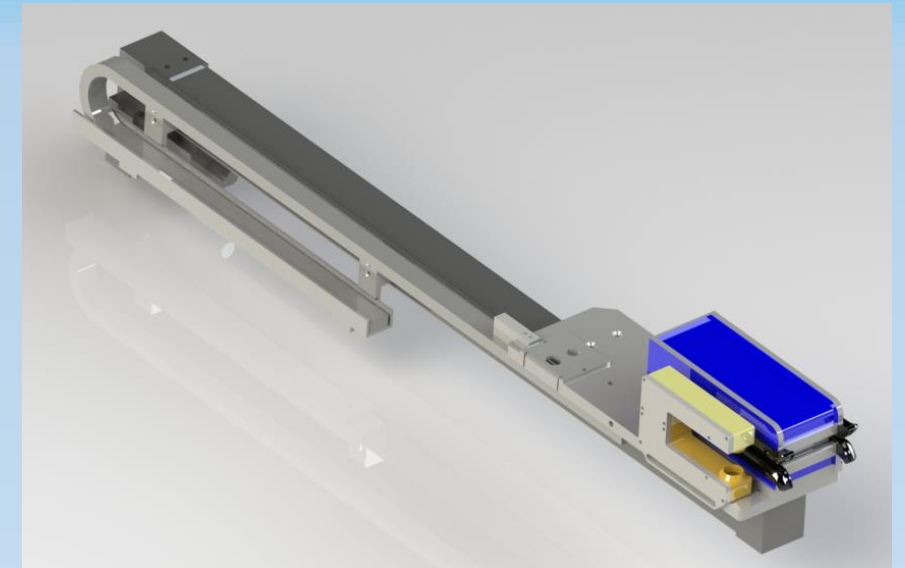


BF200 Location- After the Lay Flat



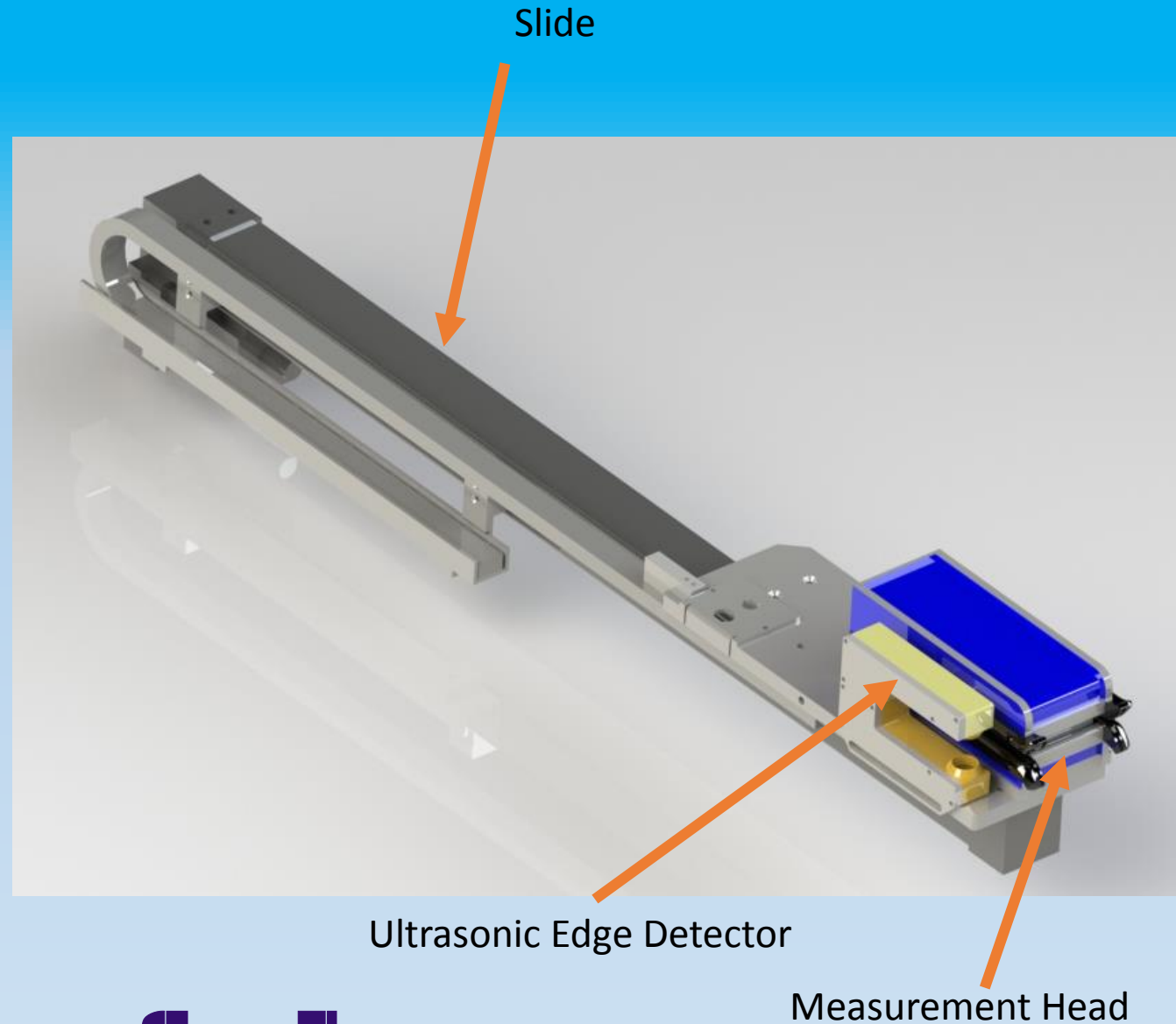
About the BF200

- Created with industrial durability to withstand harsh environments
- Highly accurate, repeatable and stable.- Best on the market in all of these categories
- Measures one spot along the edge and allows the film to rotate through.
- Tracks the die or haul off rotation to create a profile



BF200

- Automatically finds and tracks the edge of film
- Easily accommodates different bubble sizes
- Simply press a button to put the gauge on line

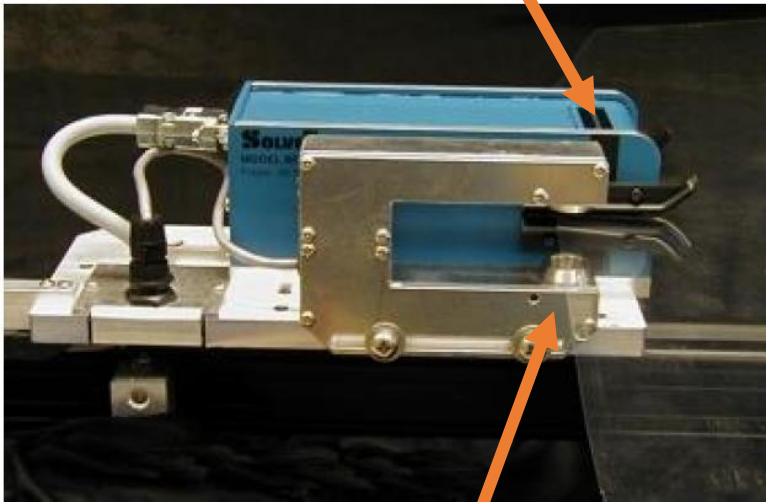


Our Technology

- Capacitance Thickness Gauging System
 - Measures material thickness using an electric field without contact
- Proprietary Technology with Market Leading Performance
- No Nuclear Radiation or X-Rays = No Regulatory Headaches
- Customizable to Material Needs
- Industrially Durable
 - 25+ year life!
- Refined over 34 years of constant development

How It Works

Measurement Footprint



BF200 Measurement Head on Head Positioning Slide

Detects the edge of the film

MEASUREMENT PRINCIPLE: GENERAL THEORY

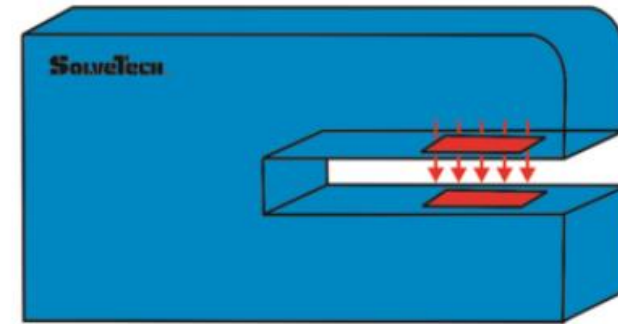


Figure 1

Simplified Measurement Head (Single Channel) showing an electric field between two measurement electrodes

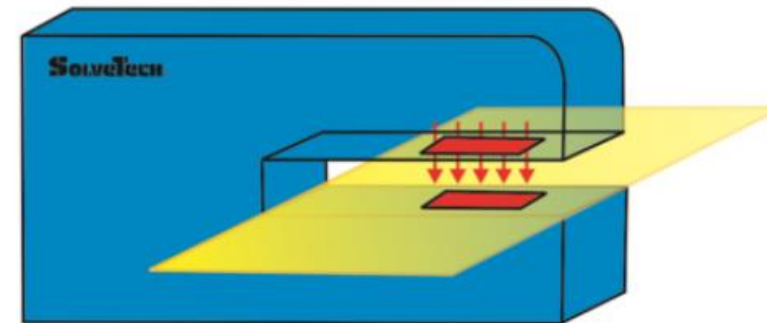


Figure 2

When a material is placed in the gap, it will respond to the electric field. The gauge contains a circuitry which is sensitive to this response.

BF200 Video

The BF200 On Line Blown Film Gauging System

SolveTech, Inc.

www.gauging.com

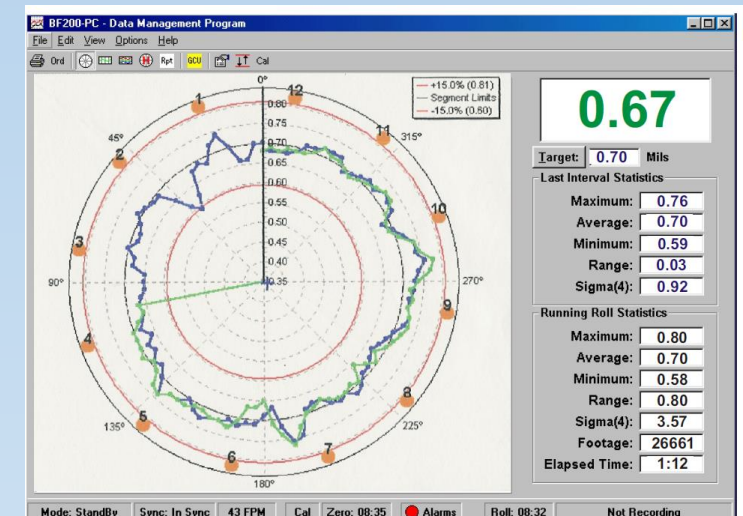
info@gauging.com

Calibration and Recipes

- Each material will respond to the electric field differently
- Therefore, we need to calibrate for each formulation and create a recipe.
- Once a recipe is created, this calibration can be used again and again for a given material.
- 4 Methods:
 - Gauge by Weight- Most Accurate- Required for thin films
 - Calipers- Quick and fairly accurate
 - Reference Frame- For customers who run one material
 - Run in %Plus mode- See % variability without calibrating

Monitor Your Line Like Never Before

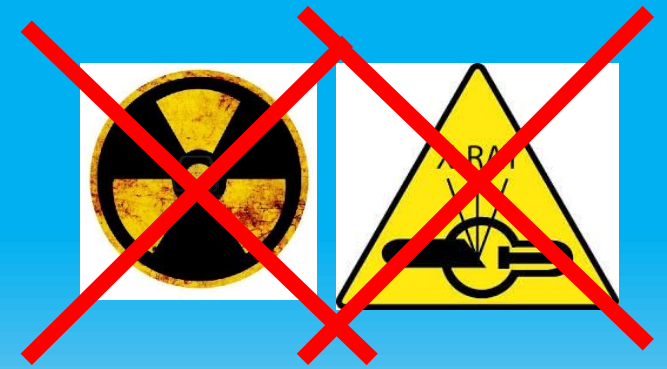
- Takes data every 2 or 3 degrees of rotation
- Creates detailed polar plot
- Much more frequent data the lab analysis alone
- See the profile relative to the die bolts
- Feed back control possible in certain situations



Benefits for a Blown Film Producer

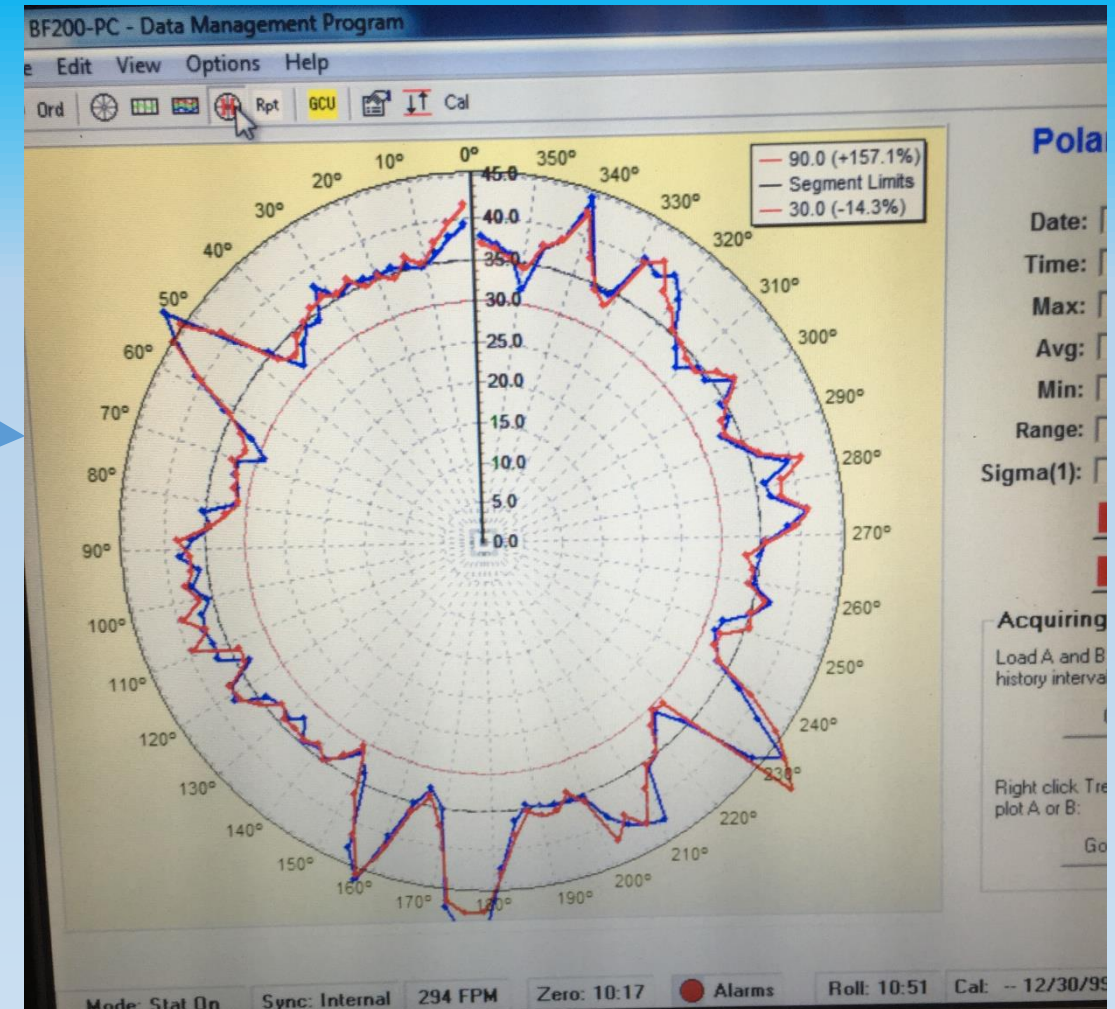
- Allows for monitoring of the film during production
- Create roll reports to send to customers
- Use it to make adjustments to the extruder
 - The BF200 can overlay die bolt patterns so you can easily see where to make adjustments-> Set up quickly
- Possible down gauging to save material
- Speed product change over
- Predict maintenance issues and cleaning
- Reduce scrap by finding defects quickly
- Provides traceability

What sets the BF200 Apart?



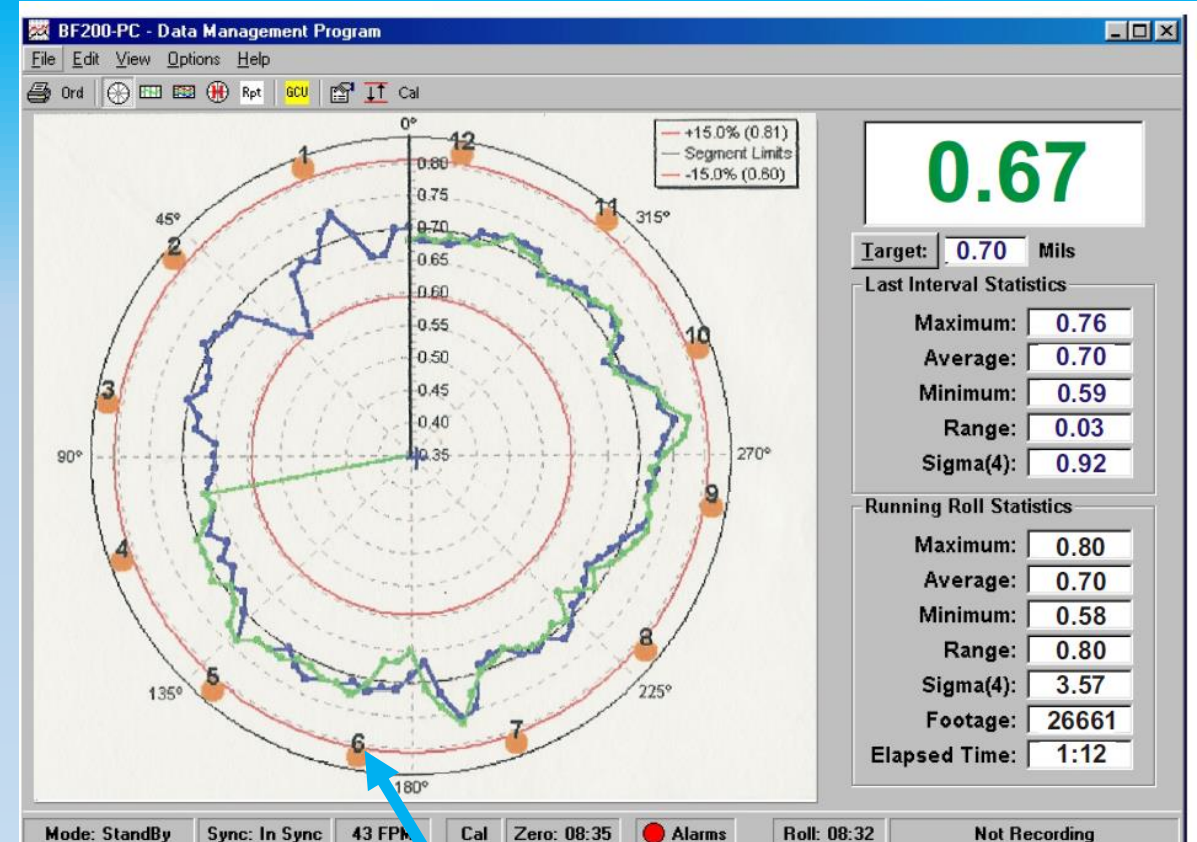
- Vs. On the Bubble
 - Much less capital cost- approximately 12% to 25% of the price
 - Much easier to retrofit and install
 - Easier to keep running and maintain.
 - Delivers an actual thickness, not just variability
 - No need for gravimetrics
- Vs Other After the Lay Flat Gauges
 - No nuclear source or X-rays = No regulatory headaches
 - Better accuracy-critical for thin films- (0.01 Mils)
 - Delivers an actual thickness, not just variability
 - Highly Durable- 120,000 run hours between failures on average (based on 5 million run hours)
 - Stable
 - Linear- Highly simplifies recipe count

Blown Film- Bubble Profile



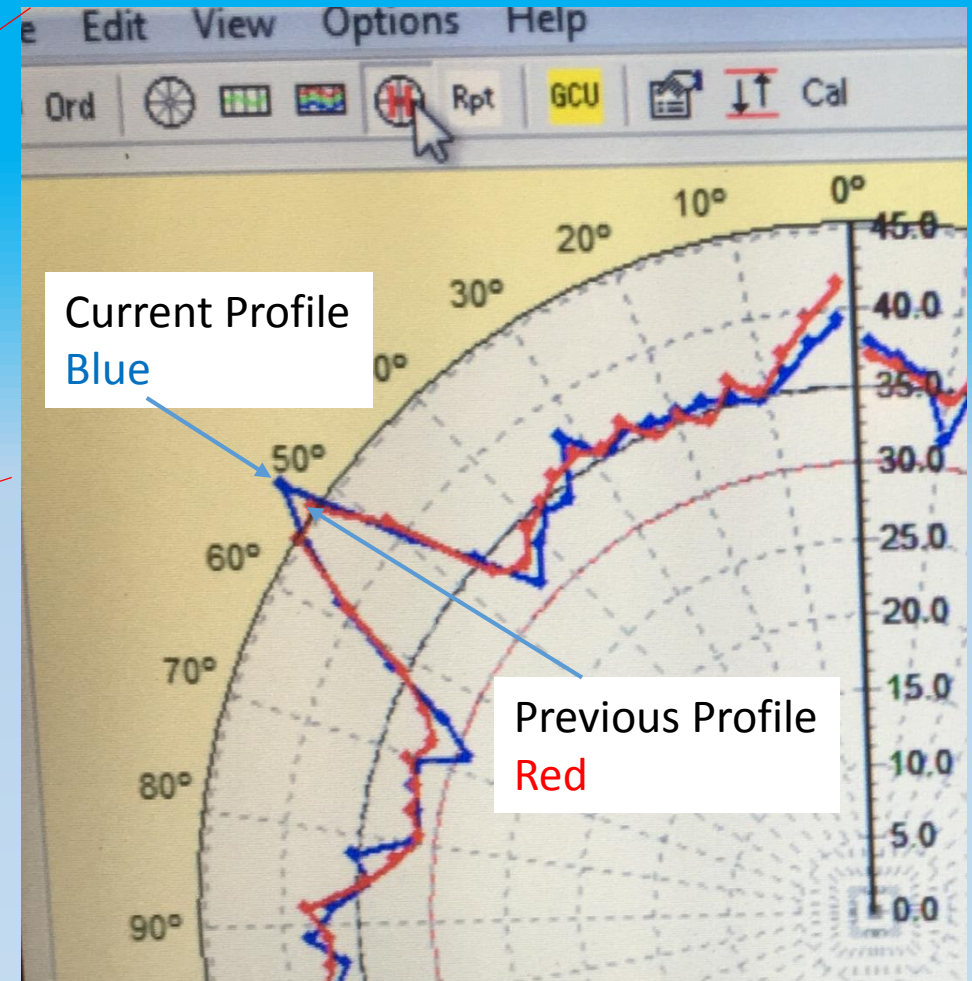
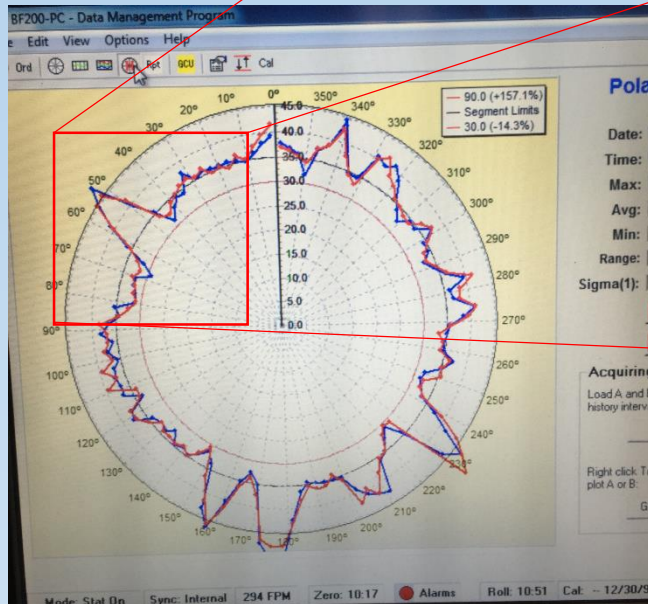
Getting Profile and Overlaying Die Bolts

- The BF200 sits along the edge, and it gets a profile due to the rotation of the film
- Therefore either the die or the haul off need to be oscillating or rotating to produce a profile
- The rotation/oscillation is tracked and a die bolt layout can be created



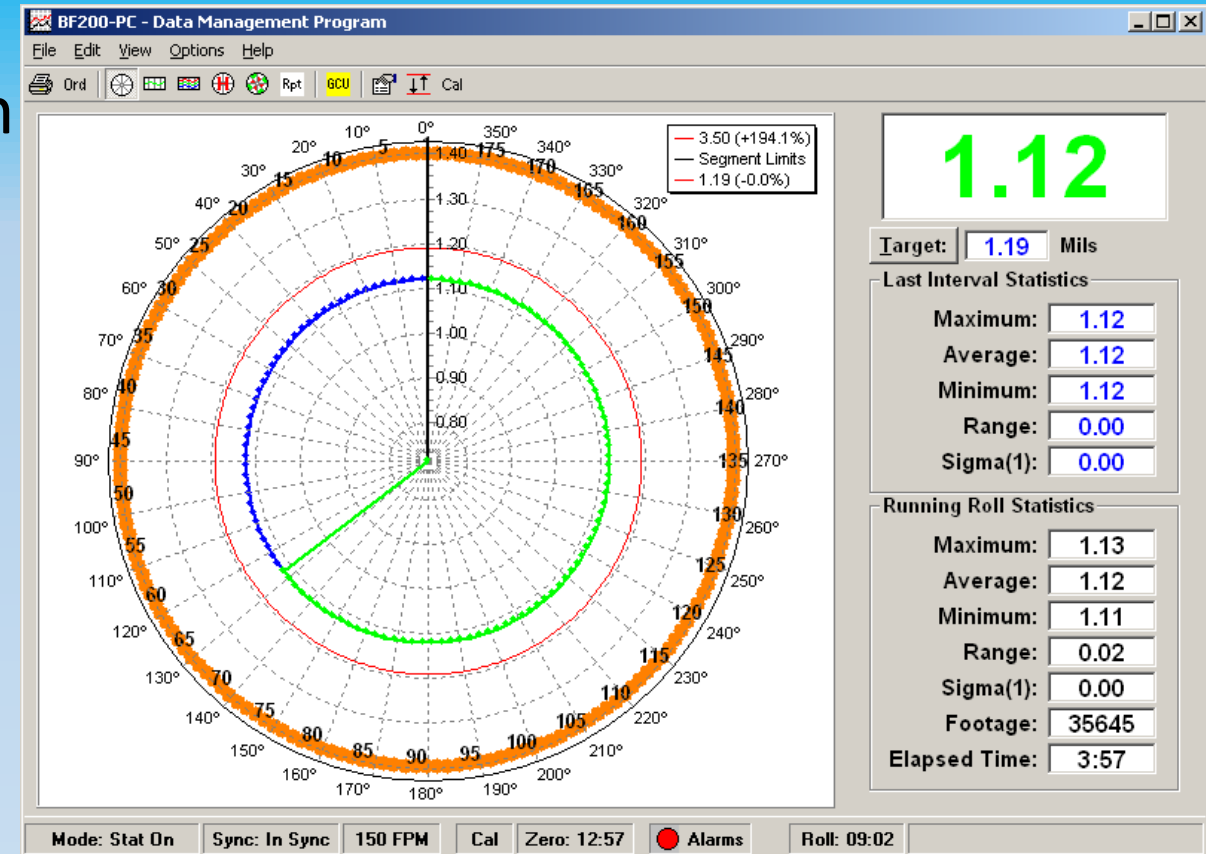
Repeatability

- Shows good tracking of the film
- Shows that we are getting a reliable answer



Stability

- In the graph to the right, you can see a 1.12 mil film sitting in the gauge head
- Over a period of ~4 hrs, the reading only varied +/- 0.01 mils
- This stability is simply unmatched in the market!



Durable Under Tough Conditions

- The BF200 is designed to operate in the demanding conditions in a blown film plant
- The unit will re-zero itself every six minutes
- This will take into account any temperature and humidity changes or any dirt that gets into the unit
- 120,000 hours mean time between failures (based of 5 million operating hrs)
- Made of durable components
- Easy to operate



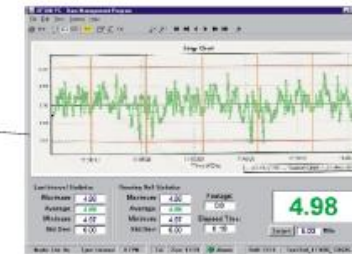
Operates even when dirty!

Data Collection

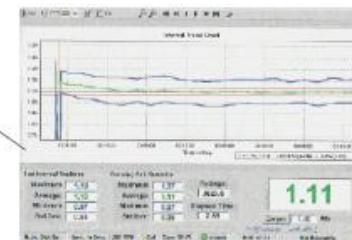
- Create Roll Reports
- Data can be easily exported to Excel or as a text file
- Autonaming and Autosaving features available
- Security features to protect the data and recipes
- Output to **OPC Server** available



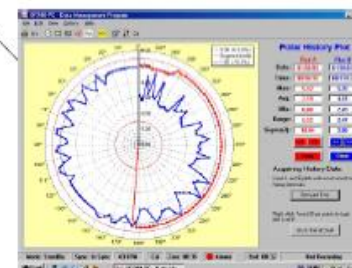
Polar Plot Screen



Strip Chart

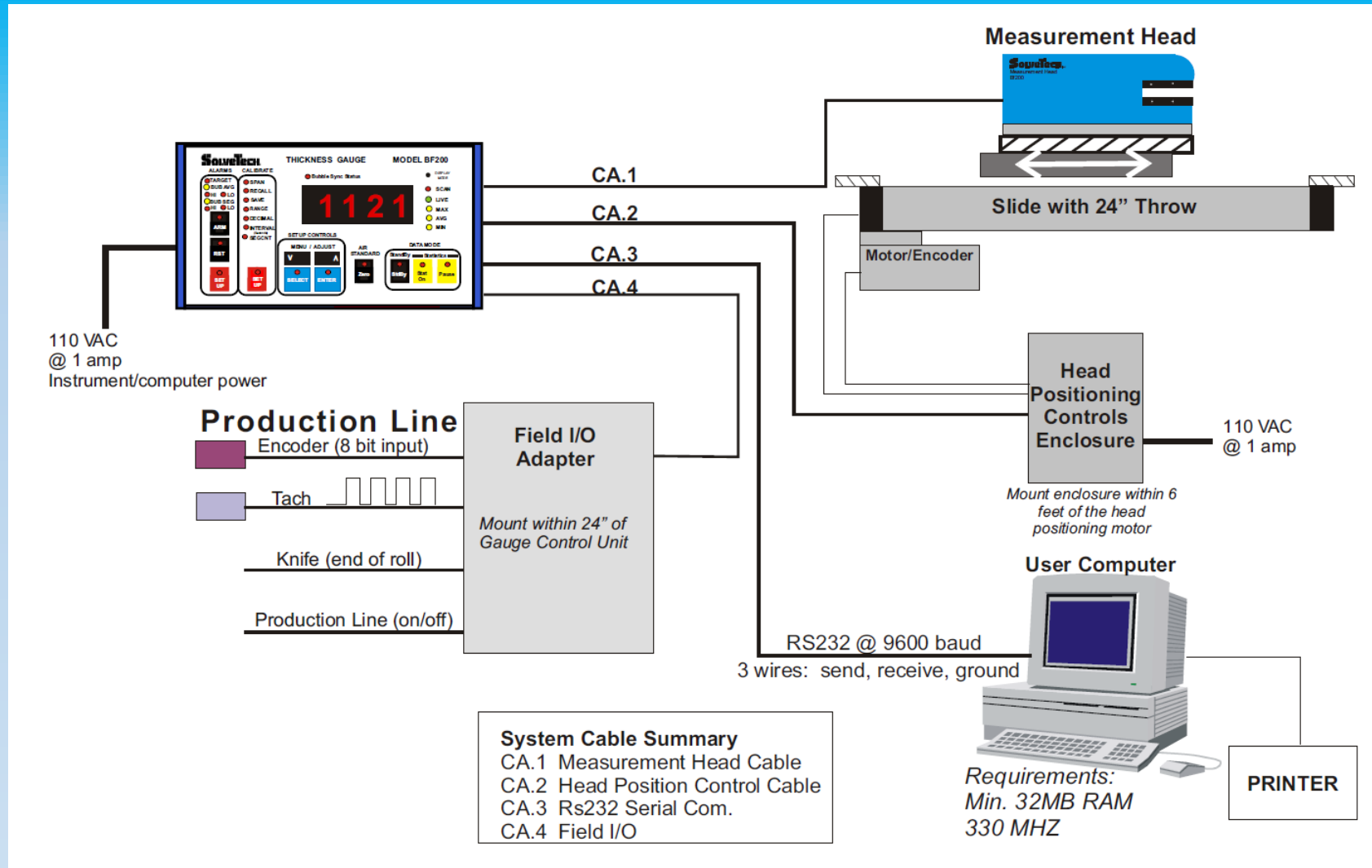


Interval Trend Chart



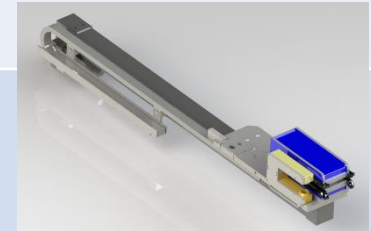
Polar History Plot

System Overview



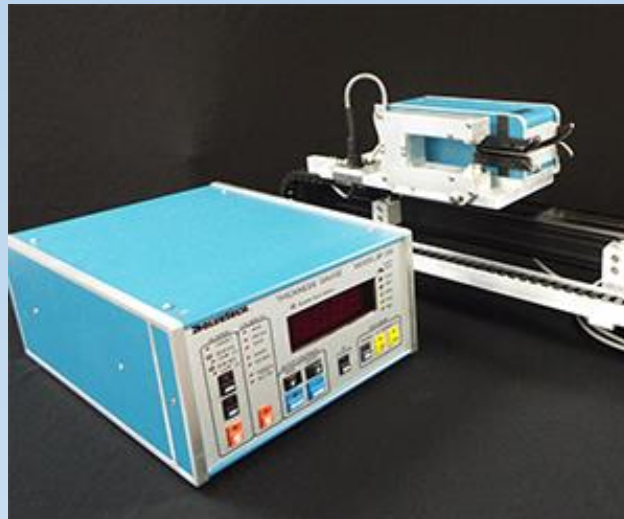
Technical Specifications

Category	Technical Spec	Comments
Accuracy	0.01 mil (0.25 Micron)	
Material Thickness Range	0.1 to 35 Mils (2.5 to 889 micron)	
Voltage	110V 60Hz Standard/220V Available	All international frequencies and voltages available
Weight	25 lbs (11.4 kgs)	Slide and Head
Dimensions	37.5" Long, 9.5" Tall, 5.25" Wide (95.25 cm Long, 24.13 cm Tall, 13.3. cm Wide)	Slide and Head
Data Collection	Every two or three degrees of rotation	User Specified
Travel Distance of the Slide	24" (61 cm)	Other lengths available upon request
Linearity	+/- 0.1%	
Stability	Stable year after year, no recalibration required	10 x better than any competitor



Training and Support

- On site training from our representatives available
- Support and training available through GoToMeeting
- Units have no need for recalibration by the factory.



Summary

- The BF200 measures the thickness of blown film using our non contact thickness gauging technology.
- Easy to use and cost effective
- Great for measuring thin films
- Great tool for quality control and production
- SolveTech will prove our technology to you through sample testing.

Send us samples today for a free analysis!

