



OpTest Equipment Inc.

Hi-Op Paperboard PerFect Formation Analyzer

Hi-Op Paperboard PerFect Formation Analyzer (Hi-Op PPF) revolutionizes product quality optimization and productivity by measuring the sheet uniformity at different “scales of formation”!

With the Hi-Op PPF, paperboard makers can optimize formation in ways unachievable with traditional Beta-ray single index instruments. The Hi-Op PPF quantifies formation into its component values. Individual component values correlate well with paperboard properties such as strength.



The Hi-Op PPF Formation Values are relative to “perfect paperboard” and to user selected “reference sheets”.

Samples are easily compared to selected reference sheets such as a competitor's paperboard or the “best” sheet produced on a particular paperboard machine. The Relative Formation Values are reported for each size component. If this value is one, then the formation of the tested paperboard and reference paperboard are equal. If the value is greater than one, then the tested paperboard is better than the reference paperboard, and vice versa. Relative Formation measurements save time and money when determining the difference between sheets and when optimizing the paperboard machine forming sections.

ADVANTAGES:

Quality Improvements

- Print and coating quality
- Sheet strength
- Converting performance

Production Improvements

- Increased machine throughput
- Improved runnability
- Fewer rejects

Formation Quality Results

- Formation values from 0.4mm to 60mm
- “floc” or component size ranges
- Excel™ based reports and data files
- Displays, stores & prints digital images

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Formation quality values are reported for each of the 10 components (size ranges) of formation:

Component	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
Range (mm)	0.5-0.7	0.7-1.1	1.1-1.8	1.8-2.6	2.6-4.5	4.5-6.7	6.7-12.0	12-18.5	18.5-31	31-55

Process changes affect formation values, at different size ranges. Likewise, different size ranges relate to different sheet properties.

Typical relationships:

Paperboard Grade	Property	Scale of Formation with the Highest Correlations
Linerboard (161 g/m ²)	Burst	2 - 5 mm

ACKNOWLEDGEMENT

The advanced algorithms were developed at McGill University by Dr. J-Ph Bernié and Prof. M. Douglas (US Patent 6,301,373).

FEATURES

- Precise optics & illumination
- Solid-state camera with 65 µm/pixel resolution
- Auto calibration
- Diffused proprietary solid-state (LED) lighting system with automatic intensity control
- Paperboard strip profiling capability
- Rapid measurements (typically < 1 s / field)
- Up to 3000 g/m² sheets, depending on recycled fiber and residual-ink content

OPTIONS

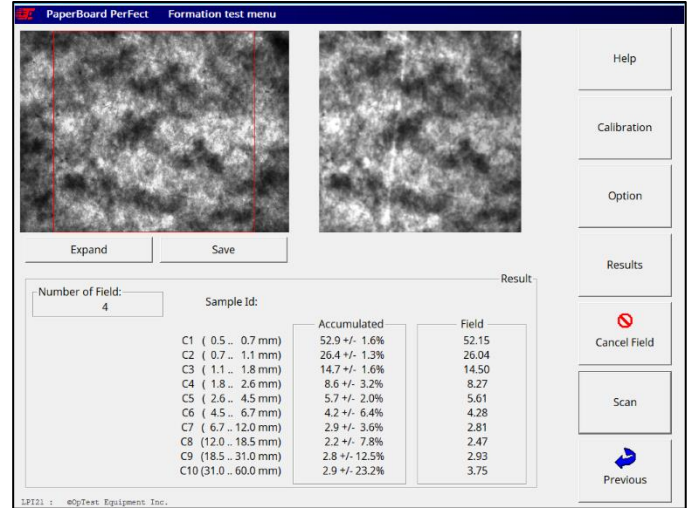
- Fully validated "turn-key" computer
- Pattern Recognition Software

DIMENSIONS

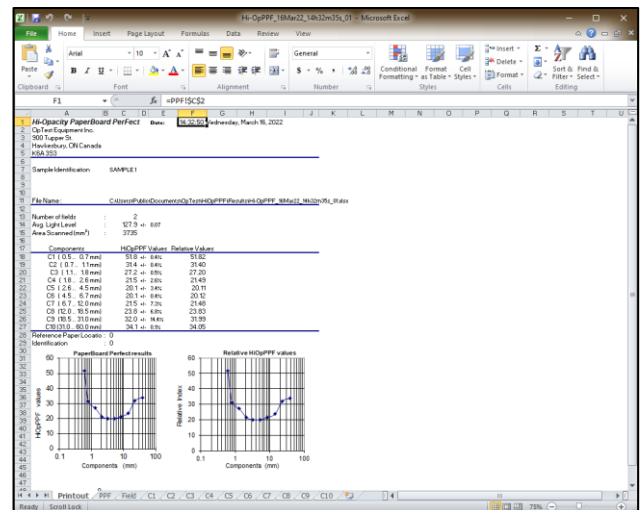
Light Control Unit
61cm (24") L x 63cm (25") W x 44cm (17.5") H

CONNECTIONS

- 120Vac/60Hz or 240Vac/50Hz, 1 phase, 600 W min. The power must be stable, within 2%, and transient free within ± 10%
- Computer with Microsoft Windows™ 11 Pro or Later, Microsoft Excel™ 2016 or Later and one USB port



Windows™ based PPF Test Menu



PPF results generated in Excel™



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