



TAVCO
Services, Inc.

Océ ColorWave 600



Complete Product Information Kit

- Océ ColorWave600 system overview
- Océ ColorWave600 brochure and spec sheet
- Review article from Desktop Engineering Magazine
- BERTL Report
- BERTL Certificate



Océ



Océ
Color
Academy

Océ ColorWave 600 Product Introduction



**Printing for
Professionals**

Océ ColorWave[®] 600 printer



- 500 gram Océ TonerPearl cartridges per CMYK
- Approximate SQFT yield per cartridge:

B&W	7,500
2D color	5,000
3D color	2,500
DG	1,250

Océ Print Assistant (OPA)

- Automatically selects the best print quality mode based on the file content and coverage

- Up to 3 front-loading media drawers for 6 media rolls
- 1,300 ft. capacity per media drawer
- No trimming required with multiple media rolls
- Full utilization of media rolls due to ease of use

- Top delivery tray for printed output
- Up to 24lb. plain paper stacking of 100 E-size prints
- Receiving rack (back-side) for up to 32lb. bond and max. print length of 164"

Cumulative usage information:

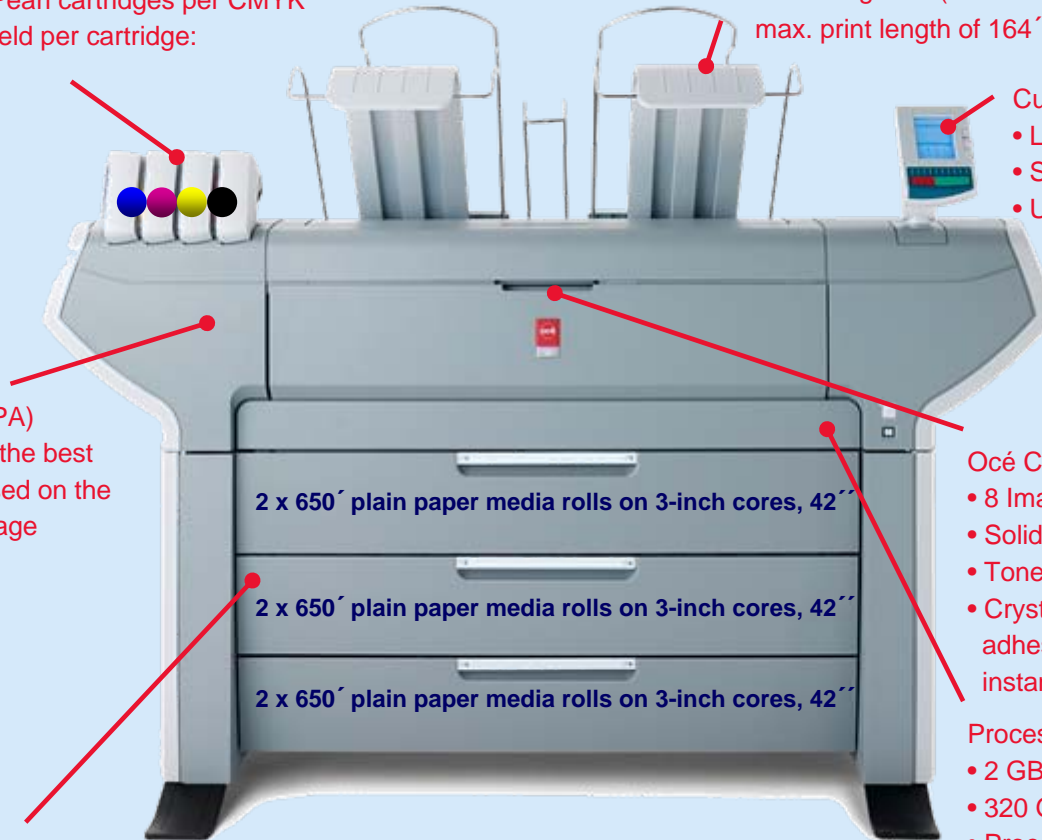
- Length of SQFT printed
- SmartClicks for color and B&W
- Usage of toner per color

Océ CrystalPoint Technology

- 8 Imaging Devices (2 x CMYK)
- Solid toner is converted to a gel
- Toner gel is jetted onto the media
- Crystallization agent forms strong adhesion for robust prints that are instantly dry and water-fast

Processing power

- 2 GB of RAM
- 320 GB of set memory
- Process and print simultaneously



2 x 650' plain paper media rolls on 3-inch cores, 42"

2 x 650' plain paper media rolls on 3-inch cores, 42"

2 x 650' plain paper media rolls on 3-inch cores, 42"

Océ ColorWave® 600 printer



- On average, a customer can run up to approximately 7,500 SQFT of monochrome or 5,000 SQFT of 2D CAD lines & text prints without having to change a cartridge

- Direct-dry prints regardless of coverage
- Unattended stacking capability
 - Prints can be handled immediately

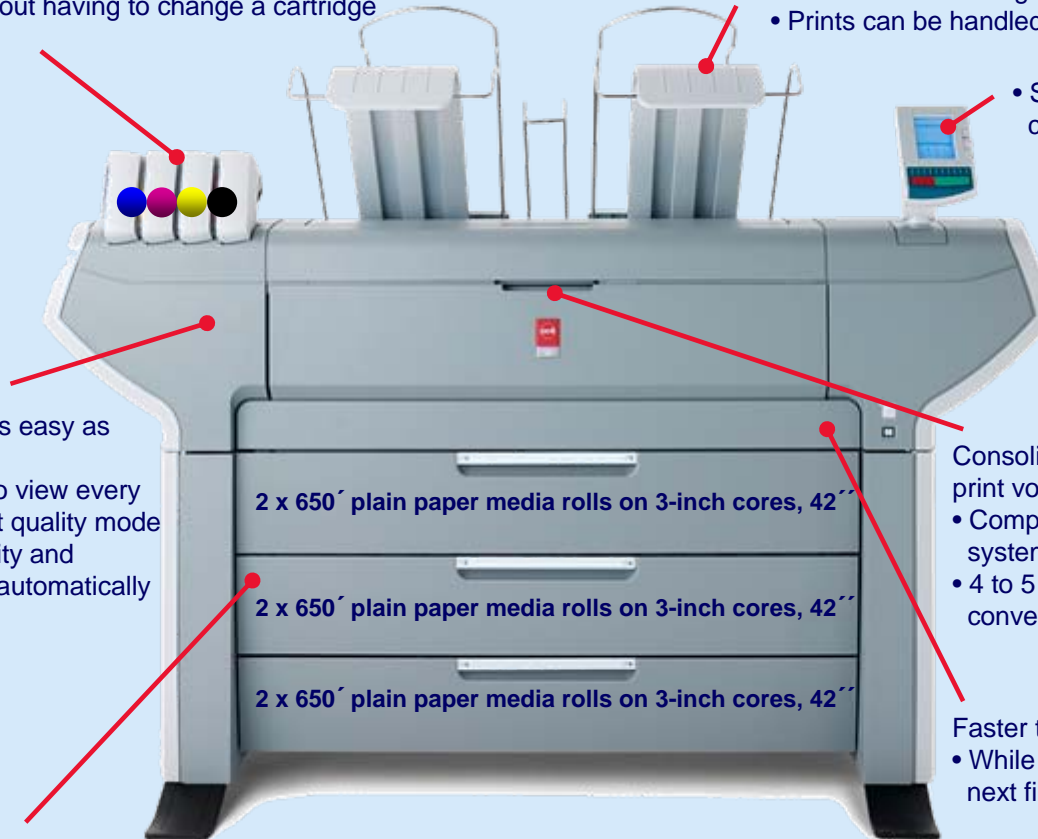
- System information back-channel to workstation

- Color print workflow as easy as monochrome
- Eliminate the need to view every file to determine best quality mode
 - Get the highest quality and speed per each file, automatically

- Consolidate monochrome and color print volumes with color print speeds:
- Comparable to monochrome LED systems
 - 4 to 5 times greater than that of conventional inkjet plotters

- Faster turnaround times:
- While one file is printing, the next file is processing

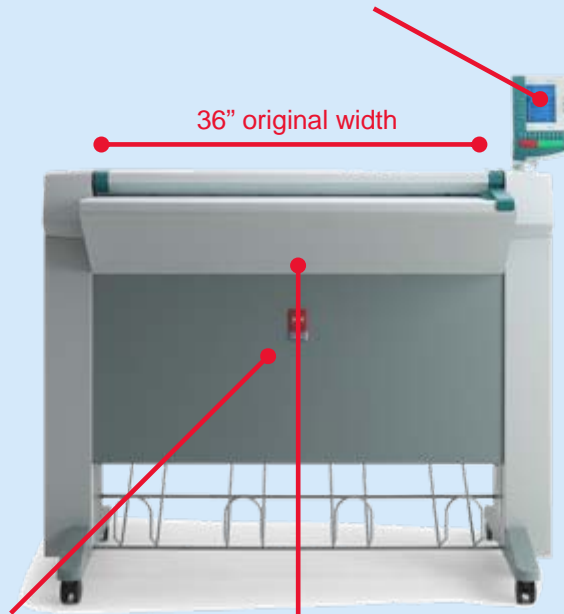
- Print full sets - monochrome and color - using the same media as monochrome LED systems
- Same look and feel for mixed sets
- Hold up to 6 different media sizes or types in the system at the same time



Océ ColorWave[®] 600 Scanner Options



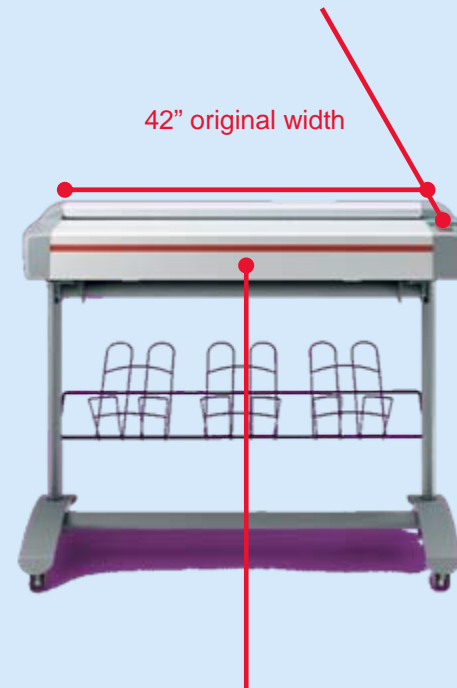
- Upward mobility to integrate with Océ TDS systems
- Océ Scan2Print software for added capability
- Customizable templates for copying and scanning



- Océ Image Logic technology
- Single camera approach
- Zero warm-up time

Océ TC4 Scanner

- Direct Copy via Océ Copy Easy
- Versatile applications with more advanced copy options
- Support of non-Océ large format printers



Océ CS43xx Scanner

- Application will drive the technology choice



**Printing for
Professionals**



Océ Transforms Wide-Format Printing Industry

> Océ ColorWave 600 Printer puts Océ's new color technology to work for professional digital document management.

The Océ ColorWave™ 600 printer from Océ North America (Trumbull, CT) is the first product based on the company's new printing technology called Océ CrystalPoint™. The Océ ColorWave 600 printer, says Océ, combines the best of both toner and inkjet printing, and can print large-format, full-color images on a wide variety of media.

Océ says the Océ ColorWave 600 printer's print speed is at least twice as fast as conventional inkjet systems. So not only can the Océ ColorWave 600 print quickly and use any type of paper, its environmental friendliness is furthered by some of its packaging being reusable and its cartridges recyclable. Plus, the new large-format color printer enables companies to reduce turnaround time and accelerate project completion with up to 4–6 times faster color production than legacy inkjet products. Its color printing at monochrome LED speeds has a maximum throughput of 1,575 square feet per hour, according to the company.

The foundation of the Océ ColorWave 600 printer's attributes is the new process of Océ CrystalPoint technology, which converts Océ's patented colored Océ Ton-



Océ says its Océ ColorWave 600 printer is the first commercially available large-format full-color printer that prints on a wide variety of media including uncoated plain paper.

erPearls™ toner into a gel. Once the toner gel is jetted and crystallized onto any type of paper, which can include plain or recycled paper, vellum, even Tyvek, it can produce crisp, water-fast high-quality images with "extremely accurate" dot placement, says the company.

COLORFUL ATTRIBUTES

The Océ ColorWave 600 printer can reduce a company's paper costs because it can print in both color and black & white on lower-cost, untreated, and recycled paper — whereas most existing color wide-format products require specially



Océ TonerPearls toner is being loaded into the Océ ColorWave 600 printer, which can hold four 500-gram cartridges (CMYK) of the toner.

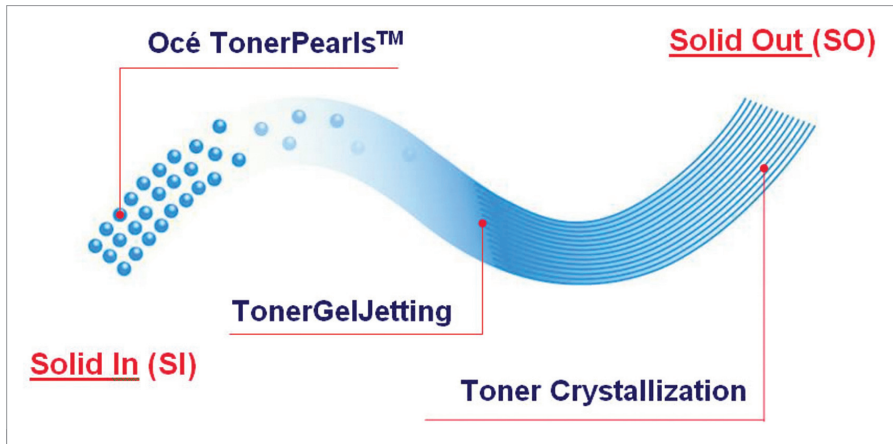
coated inkjet paper. Plus, there is no longer a significant difference between color and black & white output with regard to productivity and print quality.

The Océ ColorWave 600 printer supports Océ's patented CrystalPoint quality, which is said to produce crisp lines and "eye-popping graphics on plain paper." The printer can hold up to 6 rolls at 650 feet per roll, and it offers automatic roll switching. Color resolution is 1200 dots per inch.

"Now companies can print wide-format technical documents and graphics in both monochrome and color with one economical print system. Being able to print



The solid Océ TonerPearls toner is heated to a gel state, jetted onto the media using this Imaging Device, then instantly solidified via crystallization agents in the toner.



The Océ CrystalPoint process converts solid Océ TonerPearls toner into a gel. This toner gel is then jetted and crystallized onto any type of paper, producing crisp, water-fast, high quality images with extremely accurate dot placement, says Océ.

high-quality color onto plain, untreated paper in widths up to 42 [inches] at a speed of 30 seconds for an E-size document — that's never been possible before. This printer really does transform wide-format color printing," said Ty Layton, product marketing manager for the Wide Format Printing Systems division of Océ North America.

DURABLE IN DIFFERENT SETTINGS

The Océ ColorWave 600 printer is well suited for applications including CAD plots, Geographic Information Systems (GIS) documents, and business graphics. The company says its Océ ColorWave 600 prints can dry instantly so they can be handled immediately.

Océ ColorWave output is durable in the office and on construction sites. In addition, users in GIS environments will find the instantly dry and water-fast Océ ColorWave prints beneficial particularly when developing city planning or coordinating emergency services. Mass-market retailers can rapidly produce high-quality color or signage with adjusted prices or localized promotions that optimize sales opportunities.

SUSTAINABILITY CONSIDERED

As far as the sustainability of the system is concerned, the company says Océ TonerPearls toner makes a totally clean system: no fine dust, no odor, and minimal waste disposal.

Since the process converts solid Océ TonerPearls toner into a gel that is then

jetted and crystallized onto any type of paper or other media, fusing or developing chemicals are not needed, meaning that Océ has delivered a virtually emission-free printing technology that eliminates ozone or particulate emission and waste byproduct.

And because it prints a semi-gloss finish on uncoated paper, the technology reduces the use of paper coatings that impact the environment.

Océ CrystalPoint technology offers a number of user conveniences as well. For example, the see-through Océ TonerPearls toner cartridges enable users to monitor toner level, and the new Océ PowerM™ controller automatically determines the best output quality and fastest print speed for every file.

BEYOND INITIAL APPLICATIONS

As well as the technical document market, Océ expects to take Océ CrystalPoint technology beyond these initial applications. To achieve this, it has set up an applications center at the High Tech Campus in Eindhoven, The Netherlands. Océ is working with High Tech Campus companies to explore the application of Océ CrystalPoint technology in a range of high-tech manufacturing processes. ■

OFI

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EDITOR'S PICK: OCÉ TRANSFORMS WIDE-FORMAT PRINTING INDUSTRY

by Anthony J. Lockwood | Published July 23, 2008

Dear *Desktop Engineering* Reader,

Océ recently unveiled its new Océ ColorWave 600, a large-format color printer and the first product from the company using its new printing technology called Océ CrystalPoint. The Océ ColorWave 600 is fast, unfussy about the type of print media used, and able to give you a semi-gloss finish on uncoated paper without those environmentally nasty coatings.

Océ CrystalPoint printing technology sounds pretty neat. Considering that you're not going to get toner stains on your hands and shirt, it certainly is on that front. Océ CrystalPoint combines elements of inkjetting and toner printing. Its ink cartridge — which is transparent so that you can see how much ink you have — contains what the company calls Océ TonerPearls. The pearls are capsules of color — cyan, magenta, yellow, and black. The capsules drop into the imaging system, where they are converted into a gel that is inkjetted onto your print media. The Océ ColorWave 600 has two imaging devices per color, and its minimum pen width of 0.0016 inch produces fine details.

Advantages abound. For one, the capsules mean that there's no toner dust, and any waste gets trapped in a tray integrated with the cartridge. So, no mess, although I hold great faith in the ingenuity of engineers to so inspect the cartridges and waste trays that, after great exertion, they can stain their clothing at least once. Even if they do, what little waste there is is nontoxic, and can be disposed of in normal business trash.

But I digress. The gel remains compact as it's jetted on the media, where it crystallizes, adheres tightly, and dries instantly. Compactness and tight adhesion means 1200 dpi of bright colors and tight lines without feathering into fuzziness. The Océ ColorWave 600 produces a semi-gloss finish

without environmentally challenged coatings, and the images are water-fast.

Speaking of fast, the Océ ColorWave 600 can print with a maximum throughput of 1,575 square feet per hour or, in more familiar terms, you can print a color D-size (22 x 34 inches) document in 16 seconds. And the Océ ColorWave 600 is not persnickety about media. It prints on normal bonded and recycled bond paper, polyester films, translucent film, vellum, and Tyvek. Media sizes range from 8.2 inches to 9.8 feet long by 11 to 42 inches wide.

You can learn more about Océ's new ColorWave 600 and Océ CrystalPoint printing technology in today's Pick of the Week write-up. Sign up to access the spec sheet and brochure as well as download the video demo from the Océ website, www.oceusa.com. You'll also find links to further details on Océ CrystalPoint technology.

The printing requirements of engineering firms have evolved over the years to embrace rich output that combines photo-quality renderings with sketches, 3D illustrations, and business graphics to wow your clients and potential clients. With the economy getting murky, the pressure to impress clients with terrific output will surely increase. So with its fine details, crisp lines, bright colors, and speed, not to mention its environmental friendliness, Océ's ColorWave 600 large-format printer might just be what you need.

Thanks, Pal – Lockwood

Anthony J. Lockwood
Editor at Large,
Desktop Engineering Magazine





Océ
ColorWave™ 600
printer

Ride the wave
of color



Wide format
Océ printer with
TonerPearls™ toner

- Océ CrystalPoint™ quality
- All-around productivity
- Effortless operation
- Sustainability assured

Introducing the Océ ColorWave™ 600 printer



Océ ColorWave™ 600

Wide format printer with Océ TonerPearls™ toner



Welcome to an exciting wave of better business. The Océ ColorWave™ 600 printer delivers effortless Océ CrystalPoint™ quality prints on plain paper with world-class productivity for a wide range of applications.

For the first time, you can enjoy consistent high quality, toner prints in color. For the first time, you can produce robust color prints on plain paper. For the first time, you can use a system that gives you all-around productivity for a wide range of applications. Built for color and black & white, the Océ ColorWave 600 printer is your all-in-one solution. With excellent ease of use, it does the work for you. And for the first time, you can benefit from unique Océ CrystalPoint technology, giving you the best of both toner and inkjet technology in one “green” machine that uses patented Océ TonerPearls™ toner for superior results.

In wide format color printing, the tide has truly turned with the arrival of the Océ ColorWave 600 printer. Join us and ride the wave to better business.

Wide format printer with Océ TonerPearls toner

Welcome to a world

Every detail of the Océ ColorWave 600 printer has been designed to improve your business. Whether you need accurate fine details to meet client requirements, world-class speed to meet tight deadlines, or effortless ease of use to minimize user interaction, the Océ ColorWave 600 printer delivers.

- Highly accurate fine details
- Unique “silk shine” boosts plain paper
- Waterfast prints for outdoor use
- No feathering for sharp lines

Océ CrystalPoint quality

The Océ ColorWave 600 printer delivers unique Océ CrystalPoint quality giving you sharp lines, high readability of fine details, and smooth, even area fills with consistent results over time.

The Océ ColorWave 600 printer uses Océ TonerPearls toner and Océ CrystalPoint technology to deliver robust color prints on plain paper. Toner crystallization ensures strong adhesion to any media. No toner feathering provides unmatched accuracy. And the system’s durable imaging devices ensure output quality is always the same over time.

The unique silk-shine look and feel, coupled with plain paper printing, gives you excellent prints that are both impressive and economical.



of benefits



All-around productivity

An all-around productive system, the Océ ColorWave 600 printer ensures you meet tight deadlines.

When printing you can rely on a world-class speed that can produce up to 1575 square feet per hour of output. A superfast and embedded Océ PowerM™ controller ensures process times are not a bottleneck. And Océ CrystalPoint technology delivers dry prints, so there are no drying times and prints can be handled, stacked or folded immediately.

The Océ ColorWave 600 printer sets new standards for unattended productivity. The 42-inch-wide printer holds up to six media rolls, each holding up to 650 feet of plain paper. This unprecedented media capacity reduces media loading and saves time. What's more, prints can be output in the correct size so there's no need for trimming prints.

The printer holds four 500 gram cartridges (C, M, Y, K) of Océ TonerPearls toner which allow for long print runs. And the cartridges are see-through so you can see at a glance that you are using every single pearl. The standard Top Delivery Tray holds up to 100 prints, supporting your unattended printing needs and keeping prints in the right order.

- World-class speed of up to 1575 square feet per hour
- Transparent 500 g Océ TonerPearls cartridges for long print runs
- Unmatched six media roll capacity
- Direct-dry plain paper prints for immediate handling



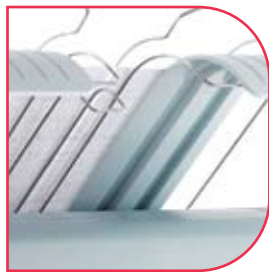
Ride the wave of color

Wide format printer with Océ TonerPearls toner

500 gram Océ TonerPearls™ cartridges



*Top delivery tray
for up to 100 prints*



42" print width



*Up to 6 × 650 foot
plain paper media capacity*





User-friendly printer operator panel



Durable imaging devices



Ergonomic roll loader



Easy loading of 2" and 3" cores



- Océ Print Assistant for green button printing
- Wide range of applications to address color and monochrome needs
- Media roll loading station for easy media loading
- Easily replace Océ TonerPearls cartridges for uninterrupted printing

Effortless operation

Built for ease of use, the Océ ColorWave 600 printer needs little user interaction or involvement to produce high quality prints productively.

The new and unique Océ Print Assistant (OPA) chooses the right print mode for you that delivers the best quality at the optimal speed for every file. There is no need to view the content of the file to determine the optimal print mode: OPA does that for you. Toner handling has never been easier: just click the Océ TonerPearls cartridges in place. And changing media is child's play.

The Océ TonerPearls feeding station uses the simple laws of gravity to feed the system, making this process highly reliable. Durable imaging devices means no calibrations during operation and no need to monitor the imaging devices or replace them. A truly reliable workhorse, the all ball-bearing design is built to do mile upon mile without breaking down.

By integrating workflow functionality in the printer operator panel, you can now manage your jobs at the printer. Create print jobs, change settings and print again without ever having to return to your workstation. Advanced queue management allows you to monitor and control progress of printing jobs, setting priorities with one touch of a button. And Remote Mailbox management enables you to organize your jobs remotely, use multiple mailboxes to order your jobs or share a mailbox to group your jobs.*



Océ ColorWave™ 600

Wide format printer with Océ TonerPearls toner

Sustainability assured

The Océ ColorWave 600 printer ensures a healthy work atmosphere every day. The unique Océ TonerPearls toner makes a totally clean system: there's no fine dust, no odor and minimal waste disposal. As a result, there's no negative impact on the working environment. The toner waste is gathered in the Maintenance Tray, which is also the packaging of the Océ TonerPearls cartridges. This not only makes it easy to handle, but also minimizes the waste disposal. And as the toner waste is completely non-toxic and solid, it can be disposed of as part of regular office waste.

Durable Imaging Devices save a considerable amount of waste as you do not have to replace them. The media independent technology enables you to make high-quality prints even on recycled paper. And as there is no coated media needed, this saves enormously on environmental impact of paper coatings. The multi-roll system means no need for clean cutting, thus little media waste. And ergonomic roll loaders allow you to easily handle 650-foot plain paper media rolls.**

- High quality prints on recycled media
- No ozone emissions
- No odor
- No system contamination of powder toner or ink



* This functionality is part of Océ Mailbox which is not yet available.

** The roll loaders are not yet available.

Océ CrystalPoint technology

At the heart of the Océ ColorWave 600 printer is the Océ CrystalPoint technology, a patented toner technology. Designed to produce accurate, robust, reliable, and impressive results, it combines all the benefits of toner with the advantages of inkjet technology to give you the *best of both worlds* in an entirely sustainable Solid In Solid Out (SISO) process.



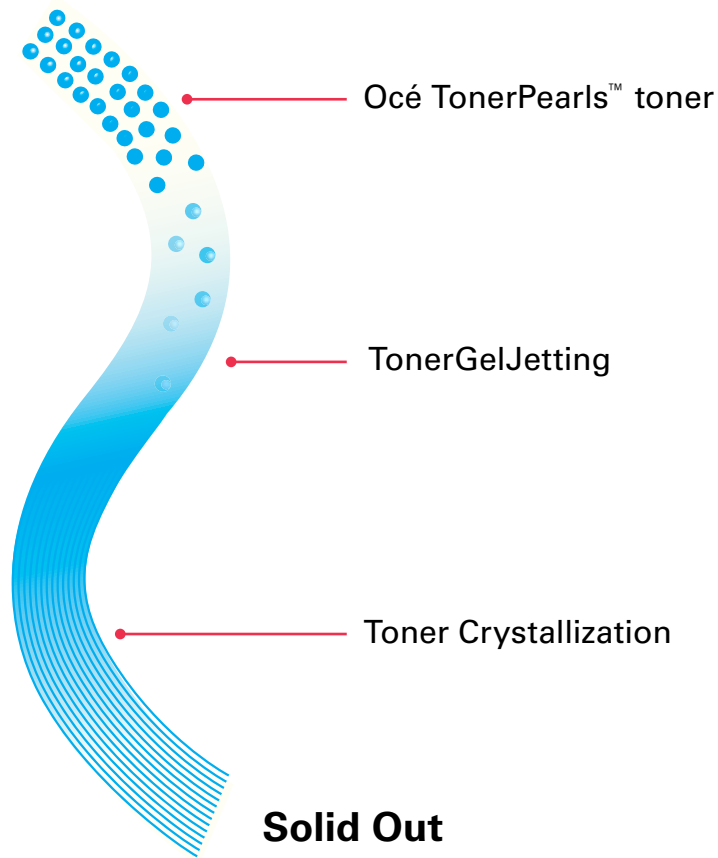
Solid In – Océ TonerPearls toner

Solid, spherical pearls put the color into the Océ ColorWave 600 printer. As they are solid, there is no risk of system or air pollution. You can easily and quickly handle the Océ TonerPearls toner with no risk of residue on your hands or in the air. Transport of the Océ TonerPearls toner inside the system uses the simple laws of gravity, and as the pearls roll directly into the Imaging Devices the feeding process is fail-proof. What's more, the 500 gram see-through cartridges allow you to immediately see when a cartridge needs to be replaced, without having to check the user interface.

TonerGelJetting

Once inside the system, the Océ TonerPearls toner is “gellified” into a toner gel. The eight Imaging Devices, two per color, move across the media in swaths at high speeds jetting the toner gel onto the media. Thanks to the gel-state of the toner, the droplets stay compact even when jetted on to a highly-hydrophylic media. As a result, a crisp print quality is realized, without feathering on the media. Together with highly accurate positioning, this gives a distinct advantage over other color technologies.

Solid In



Solid Out – Toner Crystallization

The patented formula of the Océ TonerPearls toner includes a crystallization agent, which controls the time that the toner remains in gel form after jetting onto the media. The toner crystallizes once it has adhered itself to the media resulting in strong adhesion with an even semi-gloss finish, creating robust prints suitable for heavy duty usage.

The toner required to maintain the Imaging Devices is automatically and safely returned to the Maintenance Tray in solid form, protecting your work environment. This makes waste handling odorless, dust-free, and clean.

Based on Océ CrystalPoint technology, the Océ ColorWave 600 printer will allow you to ride the wave of color to better business.



Beyond the Ordinary

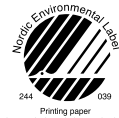


Printing for Professionals

Building a sustainable business has always been one of our core business principles. We do this by developing products and services that add value to the document processes of our customers, while minimizing environmental impact. And we conduct our business activities in a socially responsible manner aimed at preventing health, safety and environmental risks.



Mixed Sources
Product group from well-managed forests and other controlled sources
www.fsc.org Cert no. SCS-COC-00856
© 1996 Forest Stewardship Council



Printing paper
Low emissions during production

Océ Wide Format Printing Systems Partners and Awards



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For information and services, visit us at:
www.océusa.com



Océ ColorWave™ 600 printer

Ride the wave of color



The world's first wide format printer with Océ TonerPearls™ toner

The Océ ColorWave™ 600 printer delivers effortlessly easy Océ CrystalPoint quality prints on plain paper, with all-around productivity for a wide range of applications in an entirely sustainable concept.

Océ ColorWave 600 print engine

Technology

Océ CrystalPoint™ technology
(Océ patented color toner technology)

Imaging devices

8 imaging devices (2 × black, 2 × cyan,
2 × magenta, 2 × yellow)

Resolution

Addressable raster: 1.200 dpi

Minimum pen width

0.0016"

Toner

- Océ TonerPearls™ toner for CMYK
- 500 grams per color
- 4 (1 per color)

Toner level monitoring

- Visual through transparent Océ TonerPearls cartridges
- Toner level indication on operator panel and remote
- Out of toner signaling

Maximum throughput

- 1,575 feet per hour

Color modes

B&W / grayscale, color

Quality modes

- Economy, Production, Presentation
- Océ Print Assistant (OPA) for automatic selection of print quality mode based on optimal balance between quality and productivity per file
- Convenient Color Management:
 - CAD color option to conserve pure CAD colors
 - Easy selectable options to simulate inkjet devices
 - Enhanced sRGB and Adobe® RGB printing for RGB data and Euroscale coated and uncoated, US web coated (SWOP) and uncoated for CMYK data

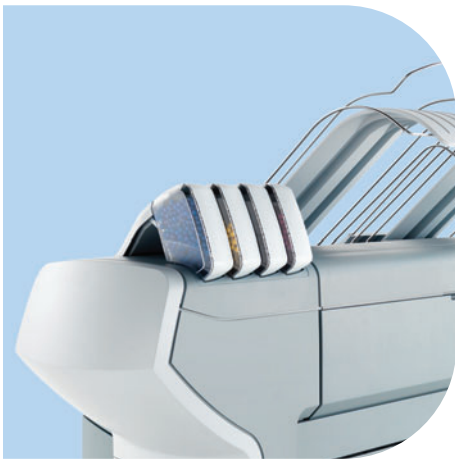
Media

Media sources

- Media input: 1 up to 6 rolls (front loadable media drawers)
- Media feeding: central alignment
- Roll selection and switching:
 - manual, automatic
- Width detection: automatic
- Media core size: 2" and 3,"
3" core standard
- Maximum roll length: 650 ft.
- Maximum roll diameter: 7"

Media types

- Bond (20–24 lb.)
- Recycled bond (20 lb.)
- Polyester films (4 mm)
- Translucent (18 lb.)
- Vellum (20 lb.)
- Tyvek® (140 gr/m²)



Media sizes

- Width: 12" minimum / 42" maximum
- Length: 8.2" minimum / 9.8 ft. maximum*

*Longer lengths can be printed without guarantee for the side margins

Media delivery

- Standard
 - Top delivery tray (50–100 prints)
 - Rear output
- Optional
 - Receiving rack (behind the printer)
 - Flat output stacker (behind the printer*)
 - On-line folder (behind the printer)

*Not yet available

Supported media formats

- DIN
- ANSI
- ARCHI

Margins

- Leading and trailing edge: 0.12"
- Left and right sides: 0.12"

Cut length

- Standard cut
- Synchro cut
- Custom cut

Environment print engine

Dimensions

62" (H) × 82.7" (W) × 35.2" (D)

Weight

425 – 605 lbs.

Electrical requirements

- 100–120 V / 240 V 50/60 Hz
- Automatic ranging

Power consumption

(including PowerM™ controller)

- Off: 0.15 W
- EPA ENERGY STAR® Sleep mode: 55 W
- Ready: 250 W
- Active: 425 W

Noise level

- Sleep mode: ≤ 41 dB (A)
- Ready: ≤ 53 dB (A)
- Active: ≤ 67 dB (A)

Safety approvals

TüV-GS, CETECOM, CE, UL, (c)UL, CB, FCC Class A

Other

EPA ENERGY STAR® compliant

Océ PowerM™ controller

Platform

Embedded controller with real-time operating system

Hardware

- Processor
 - PowerM: Single core (standard)
 - PowerM Plus: Dual core
- Memory
 - PowerM: DRAM 1 GB (standard)
 - PowerM Plus: DRAM 2 GB
- Hard disk capacity
 - PowerM: 1 × 80 GB (standard)
 - PowerM Plus: 1 × 160 GB + 1 × 320 GB

Standard interface

RJ45

Network protocols

10/100/1000 Base-T

Network protocol

TCP/IP

Printing protocol

LPR, LPQ, LPRM, FTP

File formats

- Standard
 - Vector: HP-GL, HP-GL/2, Calcomp
 - Raster: HP-RTL, TIFF 6.0, CALS, C4, NIRS/NIFF, JPG
- Optional: Adobe Postscript® 3™ / PDF-printing

Language sensing

Automatic

Number of prints

1–999

Plot manipulation

- (Auto) Rotation*, auto-scaling, positioning
- Pen management
- Leading and trailing strip adjustment (add or remove up to 15.75"), horizontal mirroring

*Not available yet.

Drivers and job submission

Drivers

- WPD: Windows® 2000, Windows Vista™, Windows XP and Windows Server 2003 for x86, Windows Vista, Windows XP and Windows Server 2003 for x64, Windows Terminal Server, Citrix metaframe and presentation server
- Océ Adobe Postscript 3: Windows 2000, Windows XP, Windows Server 2003; Mac® OS v9; OSX (optional)

Job submission

- Océ Publisher Express (standard): easy to use “green-button” job submitter for quick printing of files (standard functionality of Océ Express WebTools)
- Océ Publisher Select (standard): powerful software application for easy printing of collated sets of documents with advanced job settings
- Océ Repro Desk® Professional software: powerful client server software for efficient and flawless commercial printing and integration of B&W and color software



Océ Account Center

Optional software application that enforces the users to enter valid accounting information before printing to the Océ ColorWave™ 600 printer. Cost can then be allocated to the appropriate users, departments and projects. Functions are a/o:

- Registration per print of a/o print area, toner usage, media type
- Printer lock out
- Customized accounting fields
- Open to third party accounting software solutions

Remote applications

Océ Express Webtools

Provides multiple users a remote view on the system and control of its workflow via an Internet browser, without any need to install software.

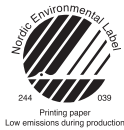
- Create and submit files with Océ Publisher Express
- Monitor and manage system status, job queue*, toner level, media in printer
- Set default job settings, workflow, color management, pen settings, Océ Print Assistant Slider (OPAS)
- Monitor and configure network, license management, security, software version, counters, download and install system updates

*Advanced queue management is not yet available.



Printing for Professionals

Building a sustainable business has always been one of our core business principles. We do this by developing products and services that add value to the document processes of our customers, while minimizing environmental impact. And we conduct our business activities in a socially responsible manner aimed at preventing health, safety and environmental risks.



Mixed Sources

Product group from well-managed forests and other controlled sources
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BERTL

OUTSTANDING

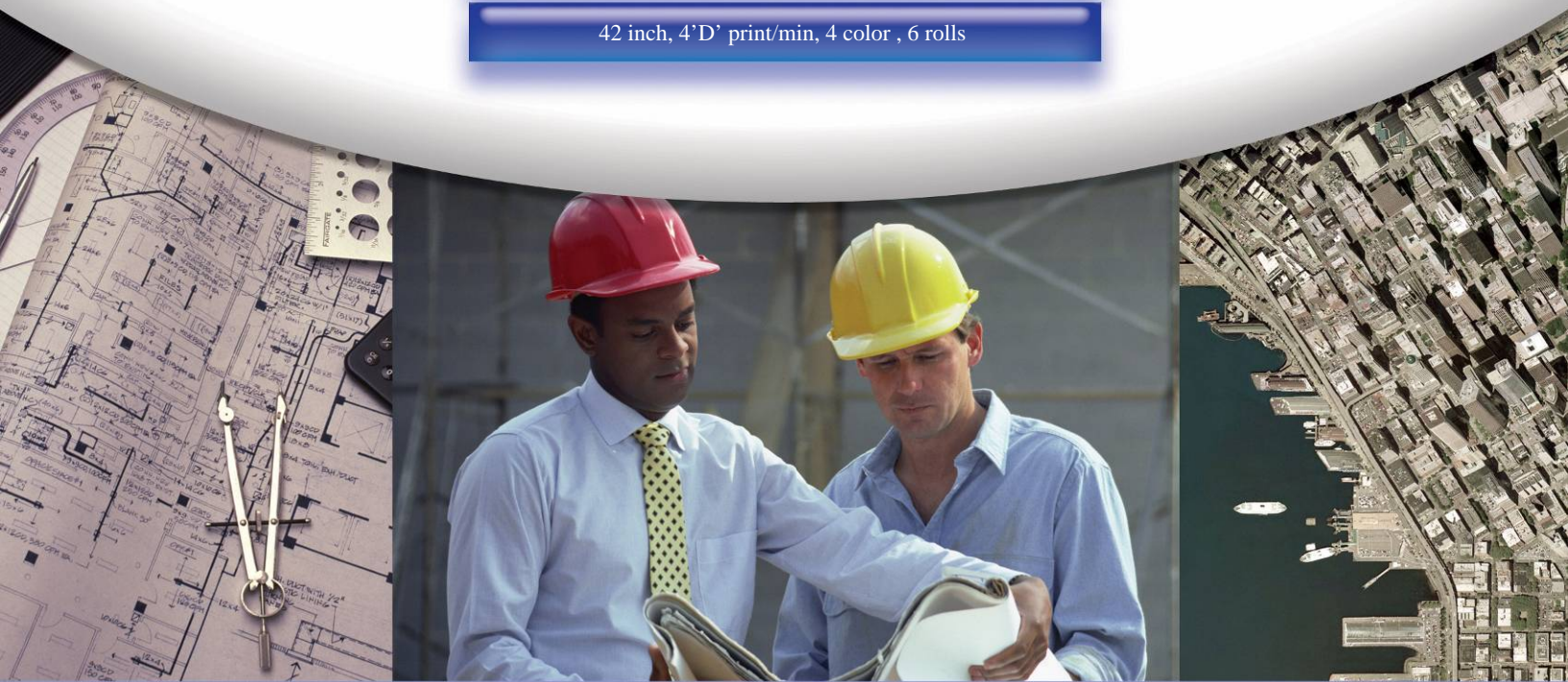


Océ ColorWave™ 600 Printer



Wide Format • Printer

42 inch, 4'D' print/min, 4 color , 6 rolls



100% INDEPENDENT ANALYSIS

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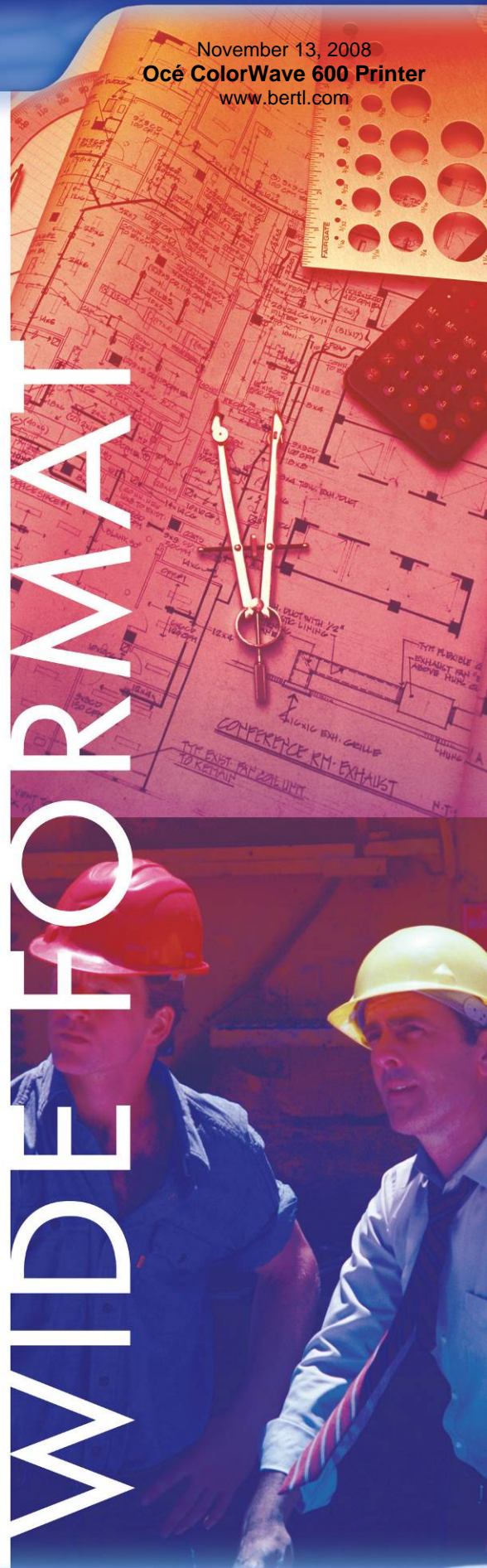
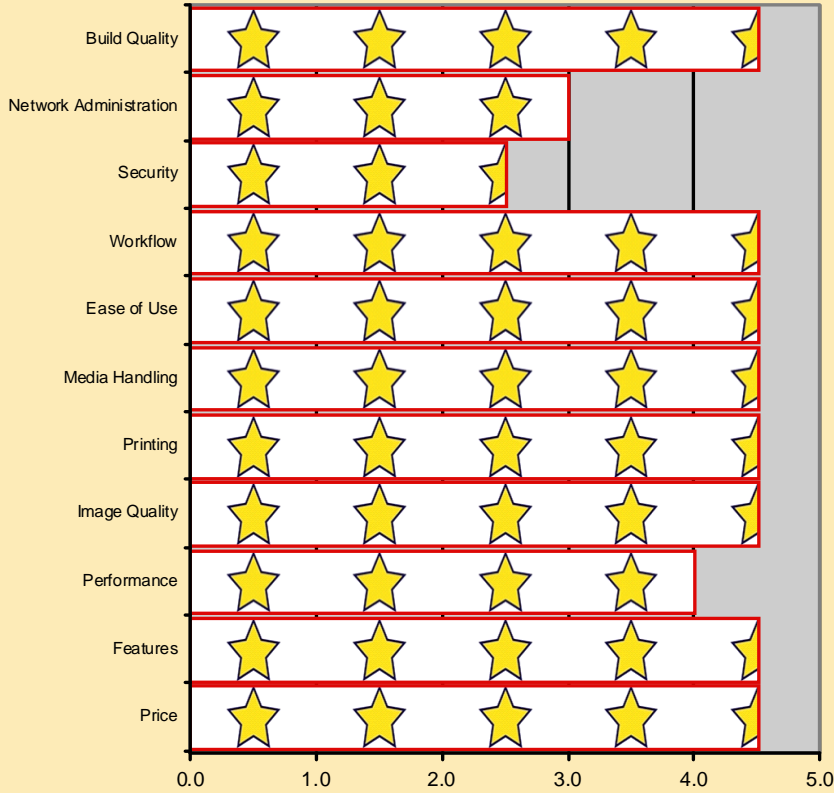


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BERTL Galaxy© Star Rating
Océ ColorWave 600 Printer



ABOUT BERTL'S GALAXY© STAR RATING

BERTL understands how difficult it is to choose one office-imaging device over another and strives to make this an easier choice for the consumer. That said, how does a consumer decide between two or more devices that carry the same BERTL 3-, 4-, or 5-star rating?

Category Criteria:

Build Quality: An analysis of the construction quality of the major components that the user must interact with on a regular basis (e.g., paper tray, access covers, suppliers, etc.).

Network Administration: The quality of administrative and management utilities (both executable and Web based) when compared to that of a sliding scale benchmark based on the network administrative feature set of other vendors.

Security: A security feature set analysis (removable hard disk, hard disk overwrite, encryption, IP filtering, NT authentication, and LDAP lookup) when compared to a sliding scale benchmark based on the security feature set of other vendors.

Workflow: The quality of the network scanning, job submission, document management, sharpening, and enhancement of the conversion and job layout tools based on a sliding scale benchmark when compared to the workflow tools employed by other vendors.

Ease of Use: Ease of maintenance (adding paper, toner, misfeeds, cleaning) and ease of using the documentation, help, control panel, print drivers, and client utilities analysis when compared to a sliding scale benchmark on the ease of use of other devices.

Media Handling: Throughput specifications and evaluations based on a sliding scale benchmark when compared with the handling of special media (e.g., oversize, thick, or coated stock) found on other devices.

Printing: Duplex and simplex print productivity based on tests and printing feature set analysis when compared to a sliding scale benchmark based on the feature set found on other devices.

Image Quality: The quality of business color images (text, dot, line, halftone, and solid quality) based on tests and a subjective rating on the quality of continuous tones (photos) when compared to a sliding scale benchmark based on the continuous tone quality of other devices.

Performance: Performance and productivity based on tests and printing feature set analysis when compared to a sliding scale benchmark based on the feature set found on other devices.

Features: The feature set compared to a sliding scale benchmark based on the feature set found on other devices.

Price: MSRP of a system configured with network printing, copying, scanning, and media trays/rolls (wide format) configuration.

WIDE
FORMAT



Introduction



BERTL Inc. recently tested the new Océ ColorWave 600 wide-format color printer, designated for mid-volume printing. The Océ ColorWave 600 is a 42 inch digital four color printer utilizing Océ new CrystalPoint printing technology (a patented color toner technology). The Océ ColorWave 600 printer targets the mid-volume market for the technical document, GIS, and reprographic markets, and it was introduced in May 2008 at the IRGA show in Las Vegas.

The Océ ColorWave 600 printer is offered in a variety of configurations. The entry level starts with the Océ ColorWave 600 printer and a one drawer, one two roll system and can be expanded in the field to a full three drawers, six rolls printer. Océ ColorWave 600 printer is offered with a choice of either the Océ PowerM™ or Océ PowerM Plus controller. The entry model starts at \$60,000 (€35,000) for a one drawer, two rolls solution. Financially the Océ ColorWave 600 can be leased or purchased, however the availability of financial options depends on the country.

OCÉ HISTORY

Océ history goes back to 1857 in Venlo, The Netherlands, when the company began in the pharmaceutical industry as a family owned and operated company. In 1919, the company entered the copier market by starting the production of blueprint material. In 1931, a new technology called the semi-dry process was marketed under the name of Océ; the Océ name is an abbreviation of 'Ohne Componente,' which means "without components." In the 1960s, the demand for office copier systems grew rapidly, and Océ focused its attention on copying on plain paper, for which there was a large demand in offices. In the 1973, the first plain paper copier equipment was introduced: the Océ 1700. In 1983, Océ introduced its first equipment for copying large-format originals on plain paper, the Océ 7500.

In 1995, Océ introduced its first digital high-volume printer/copier for office environments and for technical documentation in wide format. Since the 1990s, Océ has also marketed a line of wide-format monochrome scanners followed by wide-format color scanners ranging from 36" to 54" wide scanning capability.

Print Device Features Summary

List Price	Starting at \$60,000 Test version: \$75,000
Printing Method	Océ CrystalPoint toner crystallization
Ink System	4 color OcéTonerPearls™ toner (Cyan, Magenta, Yellow & Black)
Maximum Print Speed	4 ppm ('D' size) 1575 sq ² per hour
Maximum Print Resolution	1200 x 1200 dpi addressable
Color Modes	B/W, Grayscale, and Color printing
Print Heads	8 imaging devices (2xblack, 2xcyan, 2xmagenta, 2x yellow)
Droplets size	N.A.
Cutter	Integrated
Print Driver	Windows Printer driver. (32 & 64 bit Vista & XP), 2000
Interface	10/100/1000 Mbits/s Ethernet

THE OCÉ COLORWAVE 600 PRINTER

The Océ ColorWave 600 digital color printer is designed for a mid-volume technical and reprographic environment.

The Océ ColorWave 600 is a 42" wide, four color printer with a maximum resolution of 1200 x 1200 dpi and comes configurable with one to three drawers and one to two rolls in each drawer. Each roll can be between 11" to 42" wide and as long as 650', depending on the media type. The actual media is automatically detected, making the media type the only selection needed by the printer operator when loading new rolls into the printer. The Océ ColorWave 600 accepts various media type: Bond (20-36 lb), Recycled Bond (20 lb), Polyester Films (4 mm), Translucent (18 lb), Vellum (20 lb), and Tyvek® (140 gr/m²).



The Océ ColorWave 600 printer.

Built into the Océ ColorWave 600 system is an internal controller with real-time operating system. The customer has a choice of two controllers: the PowerM or the PowerM Plus controller. The difference is available memory, number of process cores, and internal hard disk capacity:

Controller	Océ PowerM	Océ PowerM Plus
Processor	Single Core	Dual Core
Memory	1 GB	2 GB
Hard disk	80 GB	480 GB (1x320GB+1x160GB)

The Océ ColorWave 600 printer is connected to the local LAN through an Ethernet connection in the back and supports 10Mbit/100Mbit and 1 Gbit fast Ethernet.

The Océ ColorWave 600 printer can be configured as a one, two, or three drawer printer each with one or two rolls. The number of drawers and rolls in the printer can easily be upgraded in the field by an Océ technician.

Included with the Océ ColorWave 600 printer is support for standard file formats like HP-GL, HP-GL/2, Calcomp, HP-RTL, Tiff, Cals, C4, Nirs/Niff, and JPEG. Optional is direct support of Adobe Postscript 3 and PDF files.

To support an easy-to-use printing environment, the Océ ColorWave 600 printer includes a standard Windows printer driver and a Web-based tool, Océ

Express WebTools and the advanced Océ Publisher Select (requires installation on your computer).

Océ has a long list of accessories for the Océ ColorWave 600 system that will enhance the versatility of the solution further. The accessories list contains:

- Receiving Rack
- Flat output stacker
- Online folder

All options are placed behind the printer.

The Océ ColorWave 600 is a medium speed monochrome and color printer with a rated speed of 4 'D' size per minute in black and white and only marginally lower in color printing.

The Océ ColorWave 600 printer has a footprint of 62" high, 82.7" wide, and 35.2" deep, and all media handling operations and replacement of Océ TonerPearls toner can be accessed from the front of the printer.

Lastly the Océ ColorWave 600 printer is ENERGY STAR® compliant using less than 55W in sleep mode, compare to 425W when active printing.

WIDE

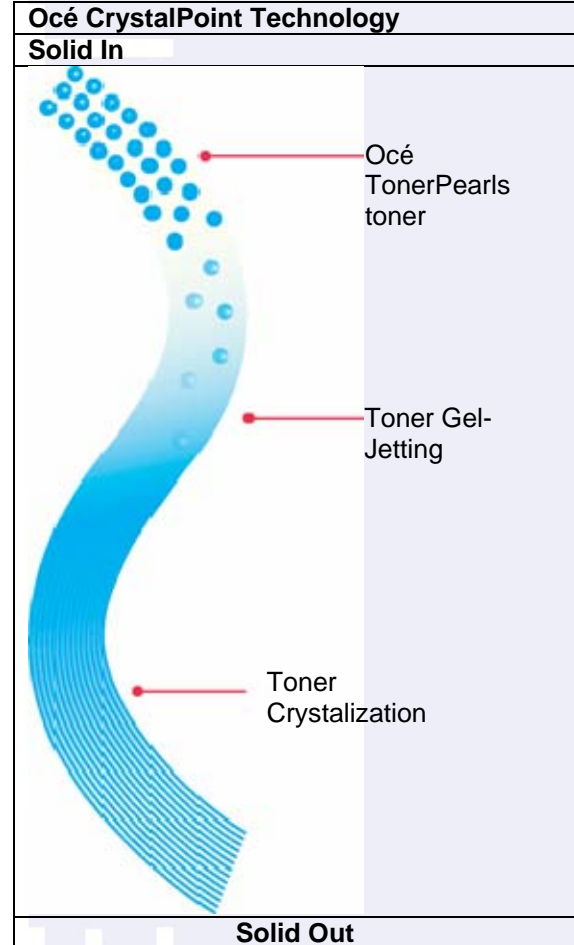
OCÉ CRYSTALPOINT PRINTING TECHNOLOGY

The toner system is based on the Océ patented CrystalPoint technology that blends the speed of toner-based system with the color fidelity of an ink-based system. The Océ CrystalPoint printing technology offers several advantages over traditional printing technologies and is based on a solid in, solid out (SISO) process. Instead of having toner powder or liquid ink, Océ uses Océ TonerPearls toner located in a see-through cartridge making it easy to detect when the 500 gram cartridge is fully empty.

The Océ TonerPearls toner is gravity fed into the image devices, where it is “gellified” into a toner gel. The eight image devices, two per color, move across the media in swaths at high speed, “jetting” the toner gel onto the media. Due to the gel-state of the toner, the droplets stay compact even when jetted on to a highly hydrophilic media. Within the Océ TonerPearls toner is a crystallization agent that controls the time where the toner remains in gel form after jetting onto the media. The toner crystallizes once it has adhered itself to the media, resulting in a strong adhesion with an even semi-gloss finish, creating robust prints suitable for heavy duty usage. The fast crystallization avoids feathering on the media and leaves a crisp quality print.

Excessive toner from cleaning the image devices returns back to solid form in a waste basket located on the back of the printer and is therefore easy to dispose of, protecting the work environment from pollution.

The Océ CrystalPoint technology offers direct dry-print with increased productivity and is environmentally friendly with no ozone emission, no odor, and minimal waste. The Océ TonerPearls toner is non-toxic, and waste can be disposed of as regular office waste.



The Océ TonerPearls cartridge contains 500 grams (1.1 lbs) of toner in a see-through cartridge. Inside each cartridge is a spindle that moves one pearl at a time to the top, where they are gravity fed into the image devices.

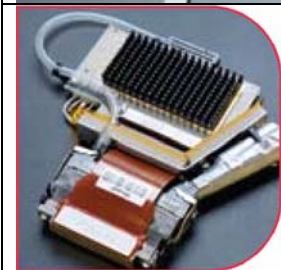


Image device — there are a total of eight image devices in the printer. Two for each color: black, magenta, cyan, and yellow.

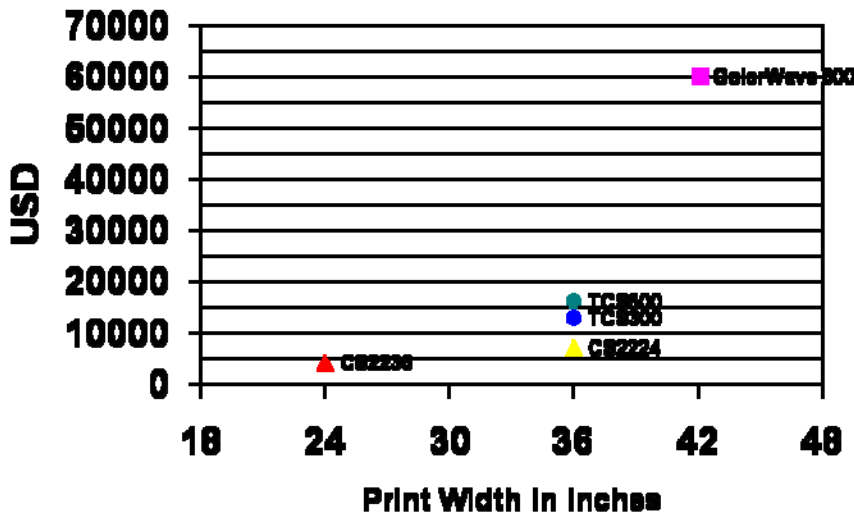
Océ offers enhanced quality with its Océ CrystalPoint printing technology:

- Highly accurate fine details
- Unique “silk shine” boosts plain paper prints
- Waterfast prints

THE OCÉ FAMILY OF WIDE-FORMAT PRINTER SYSTEMS

The Océ ColorWave printer is the first member of a new generation of wide-format printers using the Océ CrystalPoint technology. It belongs to a group of wide-format color printers that include the Océ TCS500 and TCS300 series, which are orientated towards color CAD printing with high productivity, and the Océ CS2224 and CS2236, which are high quality entry level ink-jet color printers with a width of 24" and 36" respectively. The differences among the family members are printing speed, the number of rollers they support, and printing technology.

OCÉ WIDE-FORMAT COLOR PRINTERS



Océ offers a series of wide-format productivity printers including the 24" Océ CS2224; the 36" Océ CS2236, Océ TCS300, and Océ TCS500; and finally the new Océ ColorWave 600, which is a 42" wide color printer.

What BERTL Tested

BERTL tested the Océ ColorWave 600 printer with the Océ PowerM Plus controller and three drawers with a total of six rolls. The list price for the tested system was around \$75,000.

BERTL uses its own standardized test procedures to test all wide-format MFPs, ensuring uniform and independent treatment of wide-format MFPs across the industry.

WIDE-FORMAT

Print



OCÉ COLORWAVE 600 PRINTER

The 42" wide Océ ColorWave 600 printer is considerably faster than Océ's other wide-format color printers. With no toner waste and 100% use of Océ TonerPearls cartridges plus printing on regular paper, this color printer is suitable for mid-range volume printing and low production cost. With its six rolls it can do uninterrupted long runs overnight. To avoid stopping in the middle of runs, the Océ ColorWave 600 printer checks if it has sufficient Océ TonerPearls toner prior to each print. If not, it will flag an error and await user assistance to replace an empty or nearly empty cartridge.

To make life easy, a toner cartridge can be removed and installed "at will," meaning that if you have prepared a large run and you are at the low end on one of the cartridges, you can replace that cartridge with a full one, run the job, and then re-insert the nearly empty cartridge to ensure that no toner gets wasted. A little chip in the cartridge ensures that the system always knows what is left in the cartridge for a 100% accurate reading and, of course, no toner waste.

Océ has ensured that the four color cartridges can only be inserted in the correct cartridge place holder, so you don't accidentally mix up the colors.

As is standard for most printing system, the Océ ColorWave 600 printer supports three different print modes:

- Economy
- Production
- Presentation

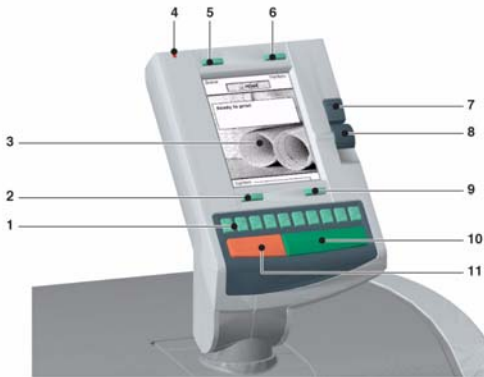
As the name implies, Economy mode is the fastest, followed by Production and then Presentation. Economy, which is an excellent choice for regular color CAD drawings, provides the fastest color speed at the expense of quality. However, for color CAD it is sufficient. For graphic arts jobs, we noticed that the color seems less bold and less vivid, which is consistent with our expectations. Production mode prints at 600 dpi by 600 dpi and the result is better, and finally Presentation provides the best result.

The Océ ColorWave printer is a 600 x 600 optical resolution printer using Océ CrystalPoint Printing Technology.

Initially the Océ ColorWave printer takes under 5 minutes to warm up from a cold start. When ready, the first print is out within 16 seconds and subsequent prints can sustain a speed of four 'D' per minute, according to our tests.

Printing can be initiated through a client computer using the Océ Windows driver, the Océ Publisher Express application, or the Océ Publisher Select application.

Print Features Summary	
CPU	Intel Centrino
RAM and Hard Drive	1-2 GB RAM, 80-480 GB hard drive
Controller Platform	Linux
Printer Drivers	2003, XP & Vista 32- and 64-bit version.
Data Format	HP-GL, HP-GL2, Calcomp, HP-RTL, Tiff, Cals, C4, NIRS/NIFF, JPEG
Network Protocols	TCP/IP
Interfaces / Standard	10/100/1000 Mbits/s Ethernet, USB 2.0
Client Software	Océ Publisher Select
Std PCL Fonts Supported	Info Not Available
Std PS Fonts Supported	Optional Adobe Postscript 3



On top of the Océ ColorWave 600 printer is the operator panel that helps you setup, calibrate, and handle media plus reports errors in the event of system failure.

The Operator monitor is a grayscale monitor with hard button located on the top and bottom on the screen. Furthermore there is a dedicated function button, and, of course, the Green start and the red Cancel button. On the right side are a scroll roller and a selection button. Customers familiar with Océ printer products will notice the similarities of this panel with the Océ TCS 300, Océ TCS500, and other Océ products.

Furthermore, a print job that has not been printed can get its media type re-assigned to other media available in the drawer.

WHAT WE LIKED

- We liked the fast production speed of the Océ ColorWave 600 printer.
- The Océ TonerPearls color cartridge is the easiest and fastest way we have seen to add or remove cartridge.
- The Océ Publisher Express Web-based application avoids any need for installing the application on the computer.
- The printer is easy to use through the built-in touch display, the Windows driver, or any of the Océ printing applications.

WHAT WE WOULD LIKE TO SEE

- BERTL has no recommendations at this time.

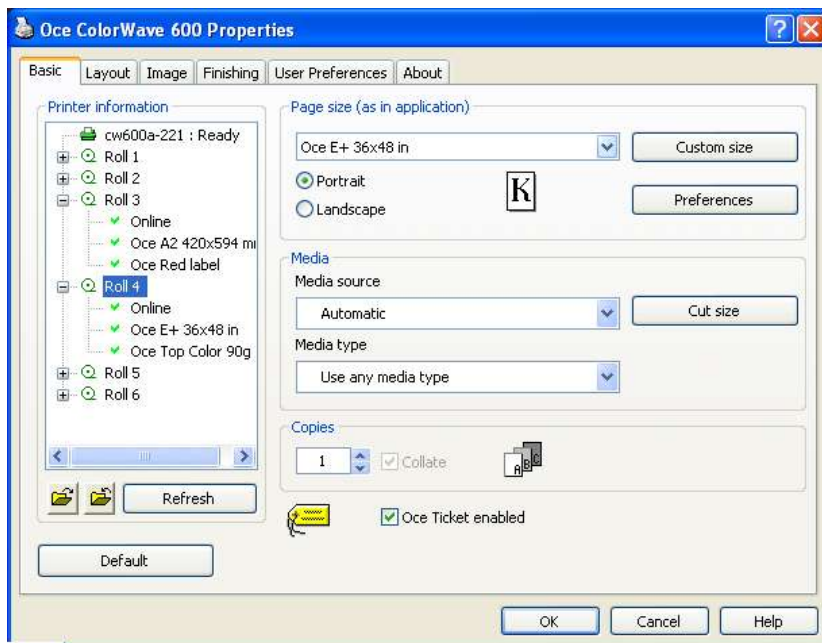
WIDEFORMAT

Print Driver Functionality

The Océ ColorWave 600 printer driver can be installed from the Driver CD included with the Océ ColorWave 600 printer. The driver is a family driver, meaning that it supports a range of Océ printers, not just the Océ ColorWave 600. This is excellent, particularly if you have other Océ printers, since you will already be familiar with the use and controls of the driver.

After installing the local printer driver on your computer, you have access to the Océ ColorWave 600 printer through the standard Windows driver print dialog box and Properties. The Printing Properties dialog box is logically divided into six main areas:

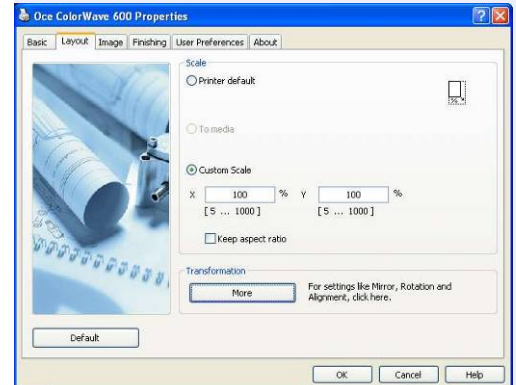
- Basic
- Layout
- Image
- Finishing
- User Preferences
- About



The Basic tab of the dialog box gives a snapshot overview of the available media.

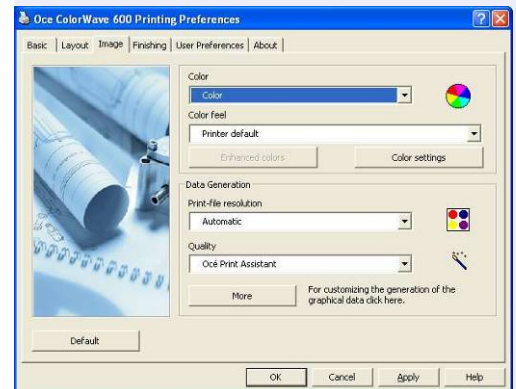
In the **Basic tab** you select the media source or choose Automatic to let the driver find the best paper source from the active rolls. Or you can select the actual media type you want.

In the **Layout tab** you can choose the scaling or let it scale to the actual media size selected in the basic dialog box.



The Layout tab lets you either scale to media size or choose custom scaling.

The most important part of the dialog box is the **Image tab**, where printing quality is controlled.



Quality can be automatically suggested by using the Océ Print Assistant setting.

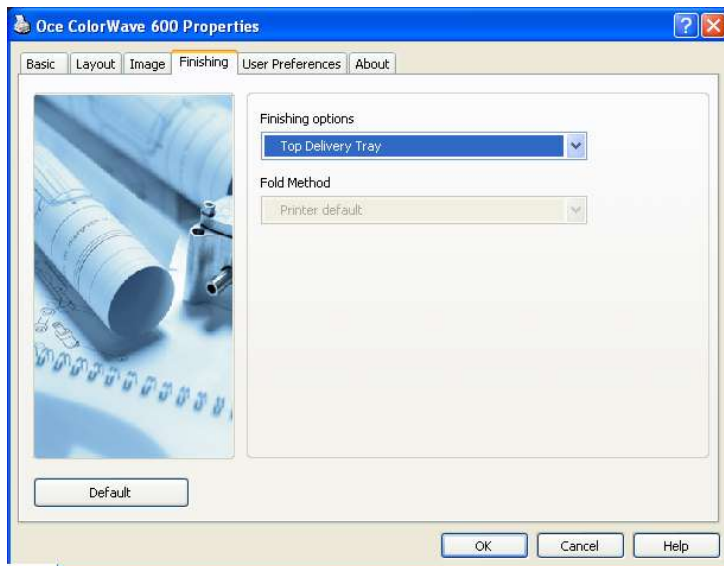
As previously explained, the printer supports three general output quality settings:

- Economy
- Production
- Presentation

If you feel strongly about which one to use, then use it. However sometimes you have a variety of different types of files to be printed, e.g., CAD files, GIS files, or graphics files. Clearly for CAD files, the use of Economy mode is more than sufficient in most cases, while graphic files tend to need Production or Presentation mode to print with sufficient quality. It can be quite tedious to constantly go in and select the

appropriate quality setting. However Océ Print Assistant (OPA) does that automatically. By selecting OPA the printer automatically senses the type of file based on its contents and then selects the appropriate quality setting: Economy, Production, or Presentation. We ran a series of different types of files to be printed and found that the OPA worked very well in all cases. We actually were surprised to find some examples where the OPA chose Production over Presentation, but after a closer investigation we found that Production was sufficient for these types of files as well. OPA is a very good tool that helps you make your first print right, saving both toner and media.

The Image tab is also where you can choose to let the Océ ColorWave 600 printer manage the color or let the application that created the file manage the color. Many image files have embedded ICC profile information to be used by color management software.



The Finish tab lets you choose among several output options.

The **Finish tab** lets you choose output options of where to send the print and works well with external options like an Océ Stacker or folder.

And finally the **User Preference tab** lets you select units (mm/inch), language, and accounting options.

WHAT WE LIKED

- The printer driver is well organized and easy to use and operate.
- We like the Océ Print Assistant for the ability to optimize the print quality setting based on the actual file contents for the printed file.

WHAT WE WOULD LIKE TO SEE

- BERTL has no recommendations at this time.

WIDEFORMAT

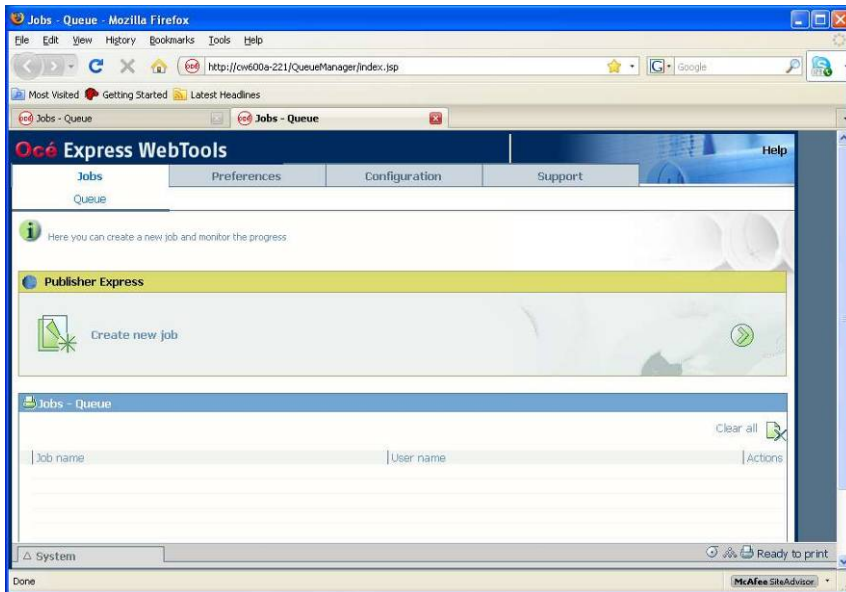
Océ Express WebTools Functionality

Océ Express WebTools (OWT) is a true Web-based print utility enabling the user to view, print, and manage jobs and certain administrative features. The benefit with a Web-based application is, of course, that you don't have to install anything on your computer. As long as you have an Internet browser, you can access and control your Océ ColorWave 600 printer.

The growing trend of using Web-based applications is recommended by BERTL, which sees instant accessible Web-based software as a way for the IT department to reduce the administrative work keeping applications up to the current revisions. With a Web-based application the IT department only needs to upgrade the application centrally, making any new revisions instantly available for all users.

With OWT users can send single files to the Océ ColorWave 600 printer.

To use OWT, the user will simply enter the IP address of the Océ ColorWave 600 printer on the local network. Since the OWT is a simple job submitter, there is no need to log in unless you want to perform administrative functions with the OWT.

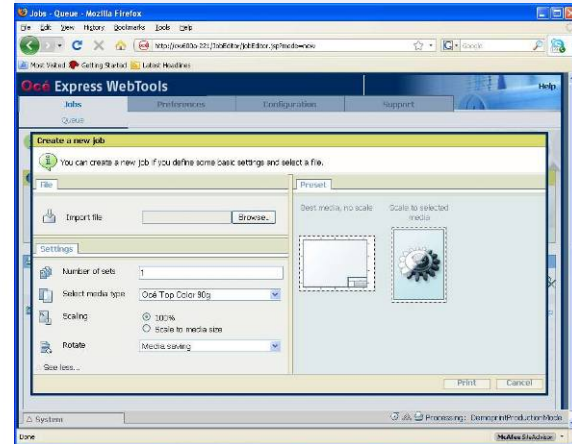


To use OWT, simply create a new job for submission.

The OWT has four tabs:

- Jobs
- Preference
- Configuration
- Support

The most important is, of course, the **Jobs tab** that guides you through how to create a new job for printing. Here you can browse for a file to print and add additional print settings like number of copies, media type, scaling, and auto rotation for media savings.



On the right side of the screen, you see the image layout on the media to visualize the effect of each setting.

The OWT follows modern design principles by allowing you to reduce or expand the options to view, thereby avoiding monitor clutter.

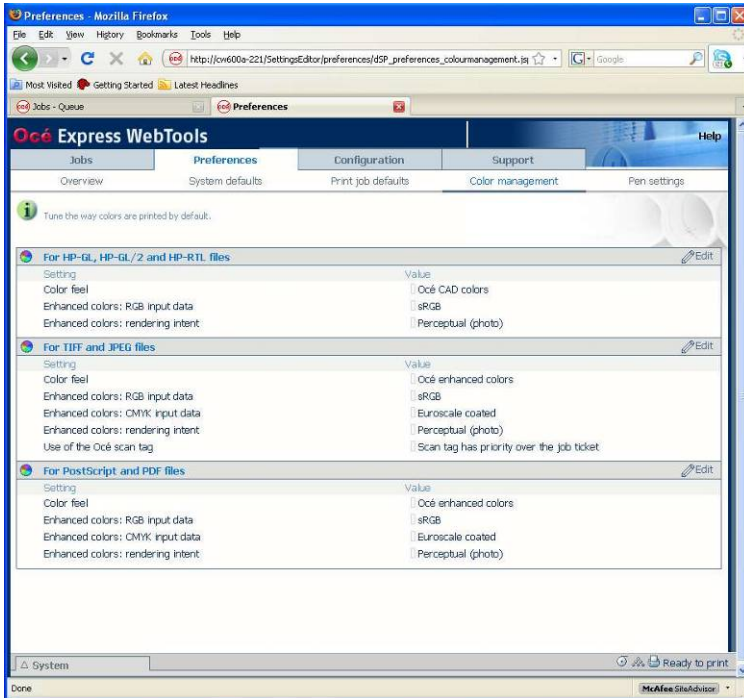
When ready to print, you hit the Print button.

The **Preferences** tab shows all the print settings and default options and can further be detailed by a sub menu selecting between:

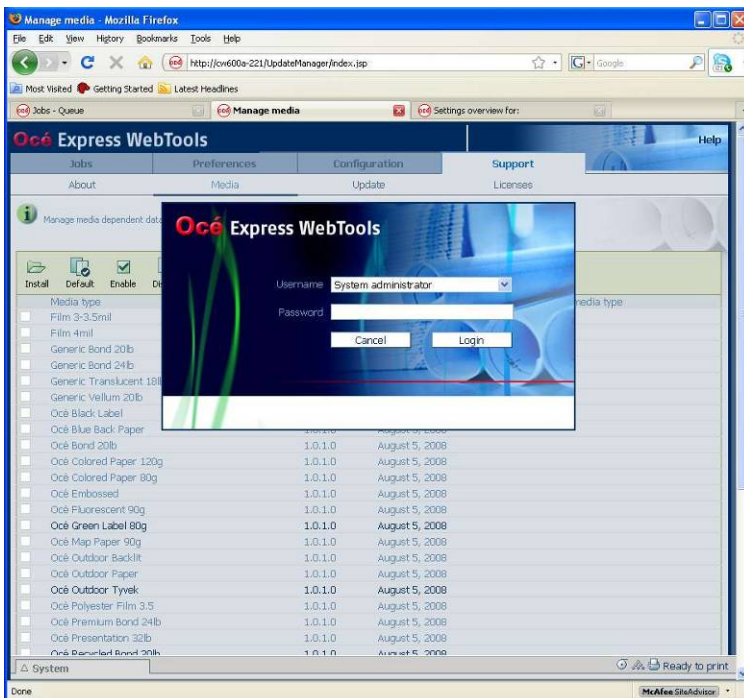
- Overview
- System defaults
- Print jobs defaults
- Color Management
- Pen settings

Each of the sub menus gives you the same access as with the regular printer driver.

Some operations require an administrative or a power user password for access. This is a very good idea to prevent novice users from accidentally changing a critical setting like the default color for a print. All settings are stored in the Océ ColorWave 600 printer, and therefore any changes have a global effect.



The Color Management tab allows you to see and change the color management of the Océ ColorWave 600 printer.



When accessing more critical functions, you are prompted for the administrative password to prevent novice users from changing settings.

The OWT is a great little tool that does not require you to install any printer drivers or other applications on your computer in order to print to an Océ ColorWave 600 printer. It does offer reduced functionality, but it is good enough for the ad-hoc user. If you are a more frequent user of the Océ ColorWave 600 printer, you will likely want the extra power of the Océ Publisher Express.

WHAT WE LIKED

- We liked the Web-based Océ Express WebTools for its simplicity and ease of use for simple print job submission.
- Real-time status of available toner and printer action required.

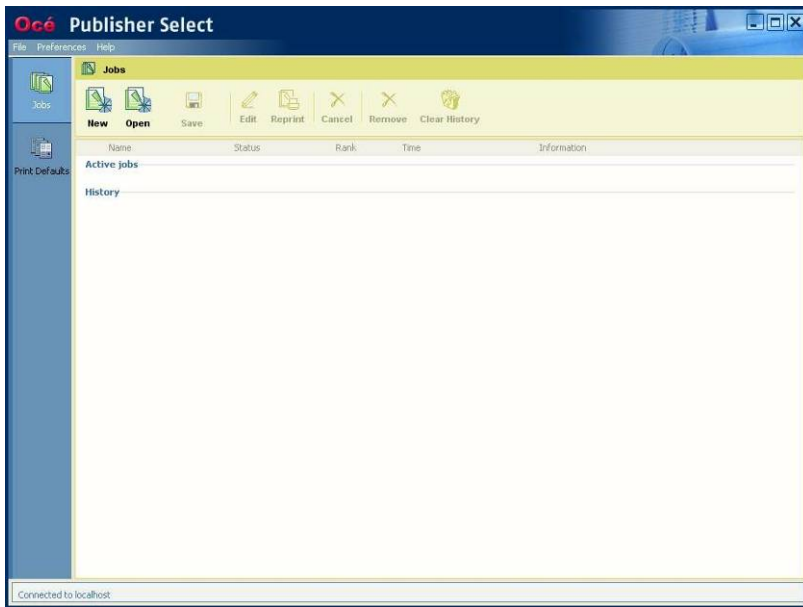
WHAT WE WOULD LIKE TO SEE

- It would be nice to see support of multiple files and building of job sets in the Web-based Océ Express WebTools (Océ Publisher Select does support multiple files and job sets).

WIDE

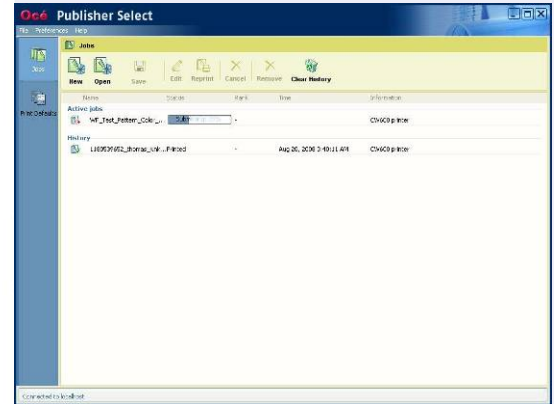
Océ Publisher Select Functionality

The Océ Publisher Select is an application that adds much more functionality than Océ WebTools (OWT), and it is useful for the regular and power users of the Océ ColorWave 600 printer who need complex sets with multiple files for a large run. Océ Publisher Select is an application that resides on the user's computer and is designed to provide network users with a fast and accurate means of producing high quality prints from a variety of file formats. It shares some of the functionality with OWT, but offers much more advanced features. While the OWT can only submit one file at a time, the Océ Publisher Select can add multiple files, apply individual print settings for each file, reorganize your job, and submit it as a set. In other words, this is the real deal.



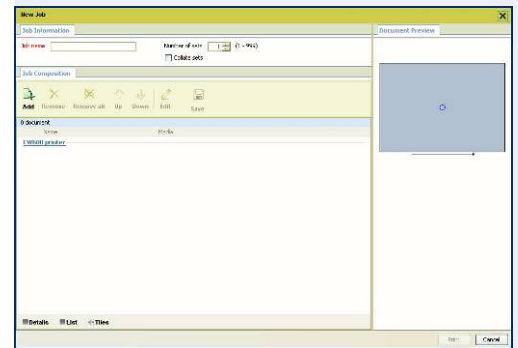
Simple and powerful tool to build more complex print jobs.

In the main screen you see the current active jobs queued to the printer or printing. After printing, the job will be moved to the history section so you can still access it and change some of the settings prior to a reprint.



One job processing and one job in history.

To submit files for printing, select the New button. This opens up a new window:

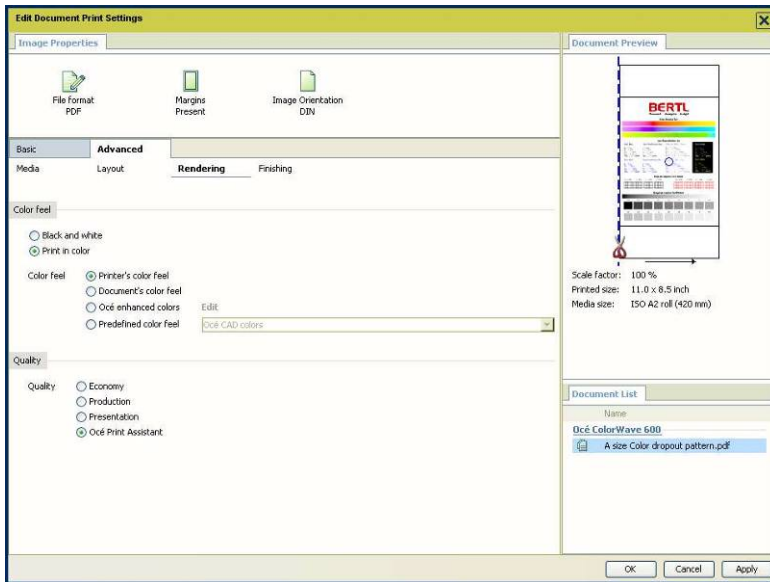


Click the Add button to add files for printing.

Select Add and browse for your files to print. The file browser supports multiple file selections.

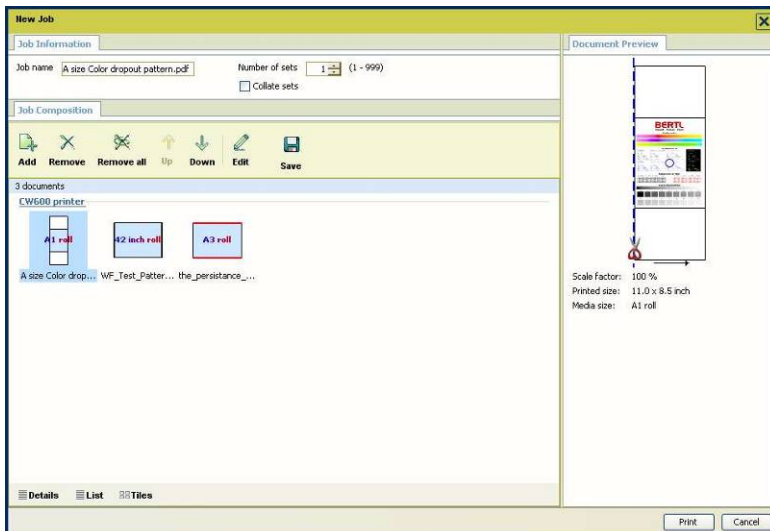
After adding files for printing, you can start tagging each file with individual settings like number of copies, media type, and scaling. There is also an Advanced tab for more complex settings like color feel or print quality. Basically everything you could change via the Windows driver is available here.

Finally, on most screens there is a preview of the image to be printed.



Color feel and print quality can be set individually for each file.

A very useful feature is the presentation of the files to be printed. Choosing the Tiles format gives a layout of how the image files will fit on the available media in the Océ ColorWave 600 printer.



Files and the layout on the media are shown. Notice the red top and bottom line indicating that the image is larger than the actual media chosen.

Finally, when you are ready to submit your job, you can select the number of job set copies you need and whether it should be printed out as collated sets.

Normally when you exit the Océ Publisher Select, you will lose all printing information and job history unless you save each print job on your computer. If you do save the print job, you can retrieve that job by opening it the next time you are in Océ Publisher Select.

WHAT WE LIKED

- We liked Océ Publisher Select for its high-end features addressing the needs of the professional to create larger and more complex job sets in an easy way.
- We liked the Stamp feature for overlaying text and images on a file.

WHAT WE WOULD LIKE TO SEE

- We would like to see actual toner and paper roll status available in the Océ Publisher Select.

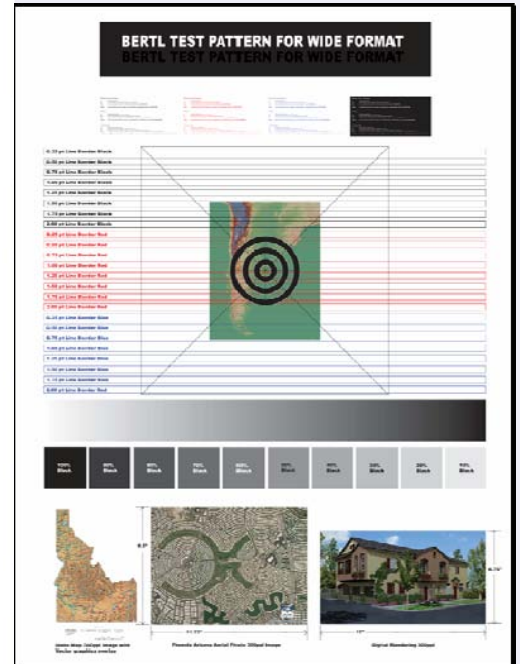
WIDEFORMAT

Image Quality



BERTL has custom designed a selection of test documents in order to investigate the ability of wide-format devices to reproduce fonts, fine lines, and graphics in both a monochrome and color environment.

BERTL printed the 36" x 48" test pattern (shown on the right) with various lines, text, image gradations, and borders in all the available print modes.



A BERTL test original was printed by the Océ ColorWave 600 printer in all imaging quality modes.

Text Océ ColorWave 600 Presentation Mode				
Times New Roman Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	3 pt.	3 pt.	3 pt.
Arial Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	3 pt.	4 pt.	3 pt.
Readable font size (magnified)	4 pt.	3 pt.	3 pt.	3 pt.
Courier Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	3 pt.	3 pt.	3 pt.

Text Océ ColorWave 600 Production Mode				
Times New Roman Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	4 pt.	4 pt.	4 pt.
Arial Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	4 pt.	4 pt.	4 pt.
Courier Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	4 pt.	4 pt.	4 pt.

Text Océ ColorWave 600 Economy Mode				
Times New Roman Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	4 pt.	4 pt.	4 pt.
Arial Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	4 pt.	4 pt.	4 pt.
Courier Font	Negative	Black	Blue	Red
Readable font size (visual)	4 pt.	4 pt.	4 pt.	4 pt.
Readable font size (magnified)	4 pt.	4 pt.	4 pt.	4 pt.

Lines Océ ColorWave 600 All modes	Black	Blue	Red
Satisfactory 0.25 pt. lines	Yes	Yes	Yes

WIDE

<i>Grayscale Océ ColorWave 600</i>	<i>Economy</i>	<i>Production</i>	<i>Presentation</i>
<i>Smooth grayscale strip</i>	Yes*	Yes	Yes
<i>Accurate graduated grayscales</i>	Yes*	Yes	Yes

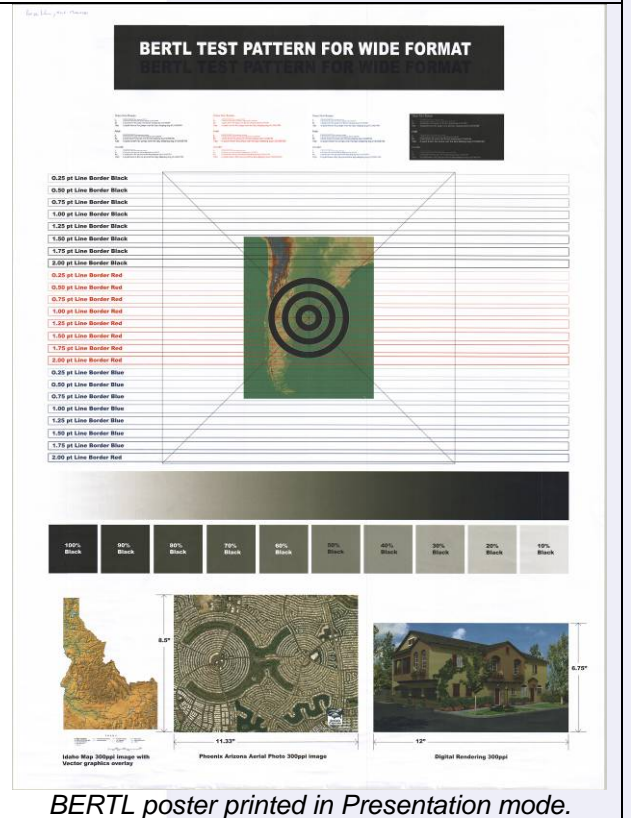
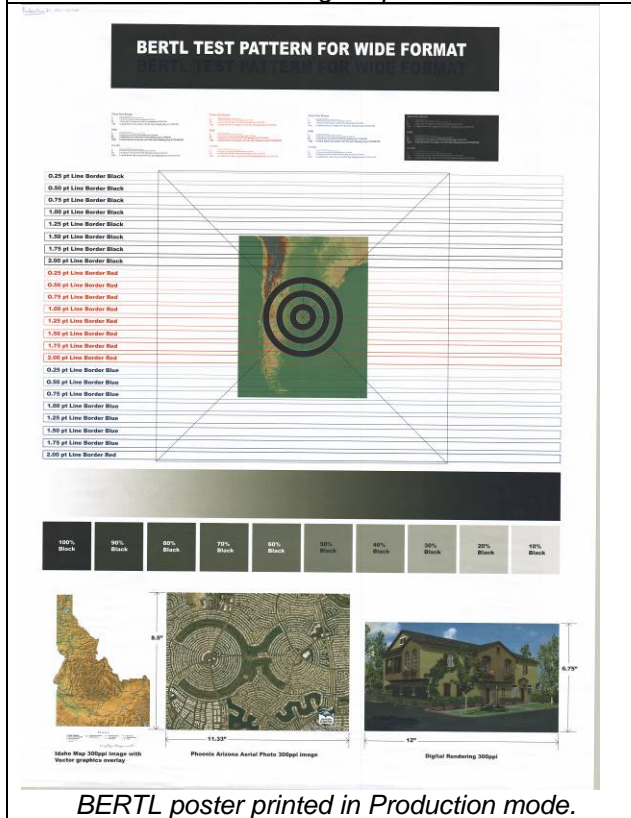
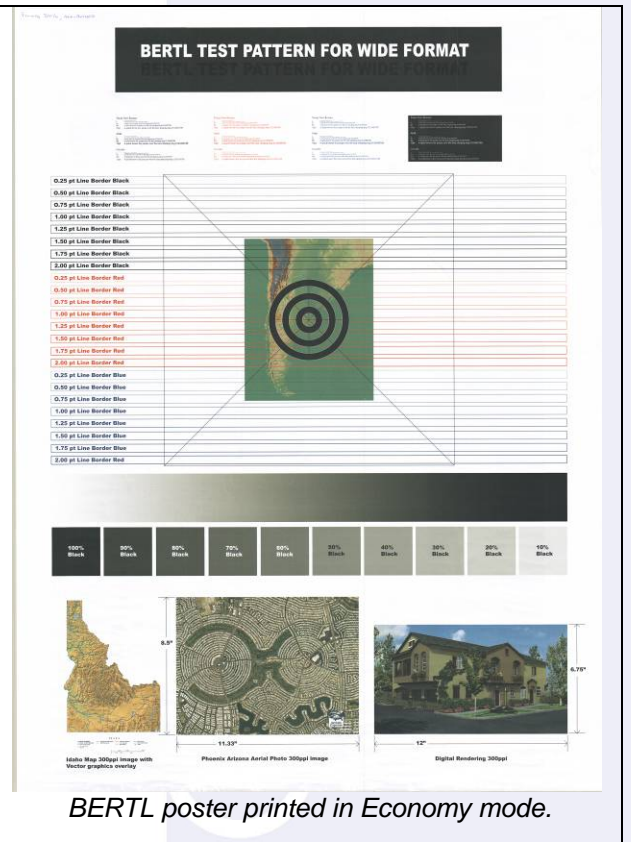
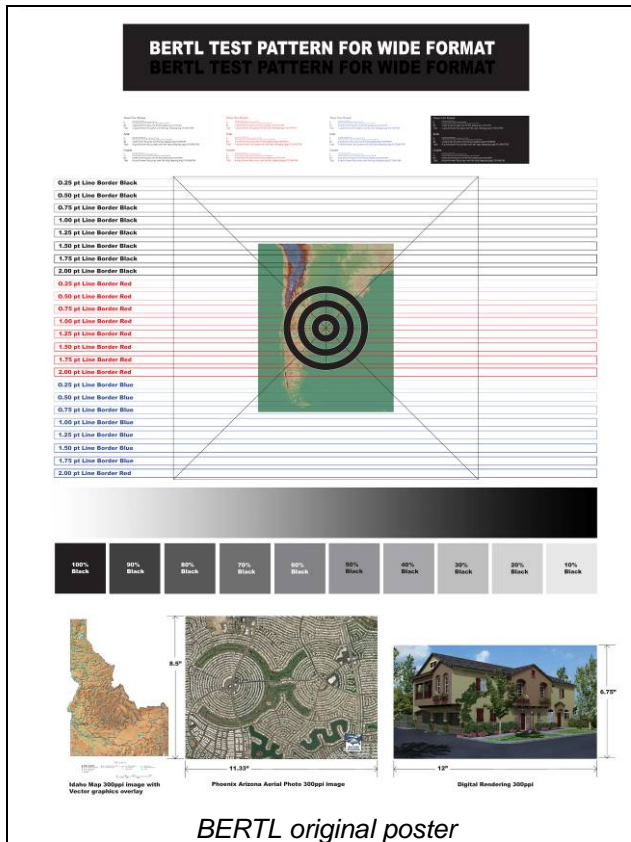
* The black end of the scale is less than solid black.

Not surprisingly, the Presentation and Production modes delivered the best result. In Economy mode we noticed that the black patches were not as black as either Production or Presentation mode.

We looked at the color reproduction of our test poster in the three different quality modes: Economy, Production, and Presentation. The result is displayed on the next page. Considering that we printed the poster on regular paper, we got a surprisingly good result. The colors are flatter and more washed out in Economy mode only, and the bottom line is that the results are good.



This cropped image of a BERTL test pattern examines the reproduction capability of fine lines in multiple colors. The Océ ColorWave 600 printer has no problem in reproducing fine lines.



GRAPHIC IMAGE QUALITY

With only four colors the Océ ColorWave 600 printer is not a high-end graphic printer, but results are still good as the image below indicates.



Printed on regular paper and then scanned.



Original art work.

WHAT WE LIKED

- We liked the image quality in all modes: Economy, Production and Presentation.
- We noticed that in many cases Production mode was more than sufficient in improving the speed of the printer for real-world production.

WHAT WE WOULD LIKE TO SEE

- We have no recommendations at this time.

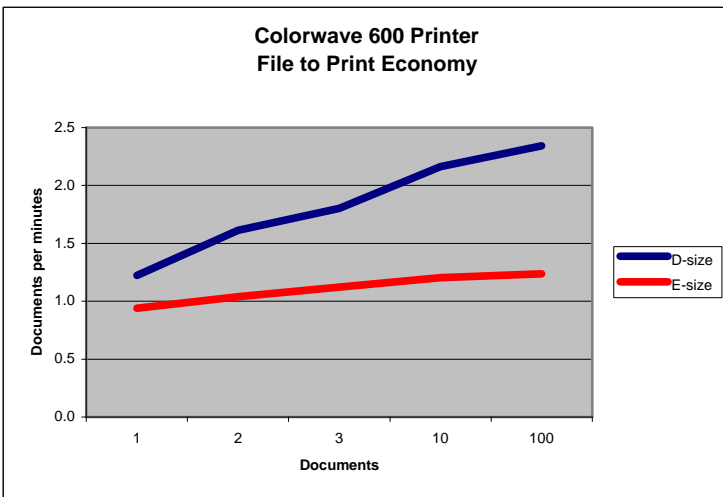
WIDEFORMAT

Performance

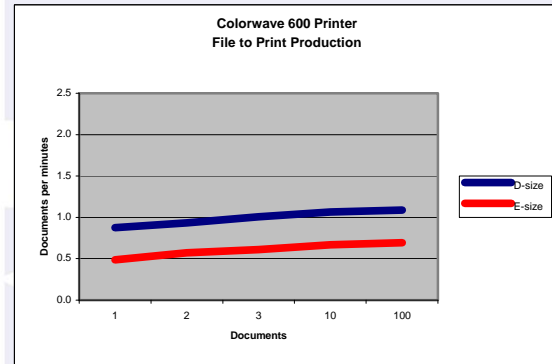


FILE-TO-PRINT PERFORMANCE

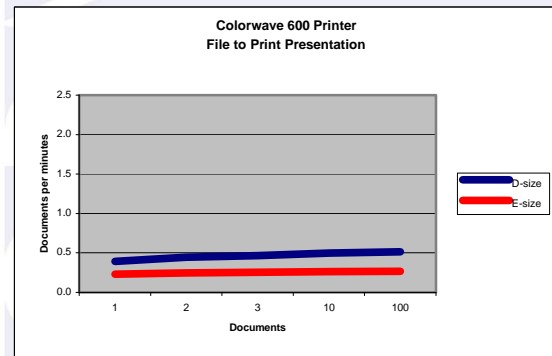
In our file-to-print test, we take 'D' size and 'E' size files and print 1, 2, 3, and so on through the number of copies and measure the real throughput. Due to the initial delay of transferring the file to the Océ ColorWave 600, the printer first starts printing after 5 seconds with 'D' size documents and 10 seconds with 'E' size documents and in Economy mode. The first print is finished after 49 seconds ('D' size) and 64 seconds ('E' size). Subsequent copies are printing at the rated speed of the printer, which is six 'D' size per minute. As we increased the number of copies, we should see that the initial staging and first document print time will move closer to the theoretical speed of the printer. For the test print file, we use a mixed color graphic and line drawing test chart, and we expected only to see half the claimed speed of 4 'D' per minutes to be realized. When the printer receives a color image, it first has to RIP it to generate color that matches that of the input file and then print it. As we increased the quality mode from Economy to Production to Presentation, we saw an increase in RIPing and processing time and, of course, printing time.



File to print using Economy print mode.



File to print using Production print mode.



File to print using Presentation print mode.

Performance was in line with our expectation. The Océ ColorWave 600 printer is not as fast at typical LED wide-format printers, but it is much faster than typically ink-jet based technology.

As a general impression, we observed that performance dropped by a factor of two when we went from Economy to Production and from Production to Presentation mode.

WHAT WE LIKED

- We liked the fast color printing compare to typical ink-jet based technology.

WHAT WE WOULD LIKE TO SEE

- We have no recommendations at this time.

WIDE FORMAT

Media Handling: Media Input



Media

Media mainly comes in four different types with varying weights: bond paper, vellum, tracing paper, and film. Standard plain 20 lb. bond paper, used for general monochrome prints and copies, is the most commonly used paper and weight. Vellum was typically used for archival purposes in the past because of its longevity, and it is still used for this purpose today. With more companies scanning hard copies into some form of Electronic Document Management System (EDMS), fewer drawings are being stored in hard copy form due to the large storage requirements. Tracing paper and film are used for specialized application requirements, but are not usually used on a regular basis.

Capacity

Wide-format printer/copiers hold rolls of media. Most rolls hold 500 linear feet, but some rolls can hold up to 650 linear feet of media. The Océ ColorWave 600 printer can handle two rolls at a maximum size of 3" x 42" per drawer and you can equip the Océ ColorWave 600 printer with three drawers for a total of six rolls.

The media capacity is directly related to the maximum diameter of the media and roll combined that the device will accept. Thicker media will allow for fewer linear feet on a roll. A machine may max out its roll capacity with a 650-linear foot roll of plain bond paper, but only allow for a 200-linear foot roll of film or other thicker media.

Capacity also depends on the number of rolls that the machine is capable of holding.

Size

When a new size media is loaded from the front, the printer must be set for the correct size and media type. Monochrome wide-format printers generally max out at 36 inches in width and the linear footage of the roll's length, or the print driver's limitations. The Océ ColorWave 600 printer holds up to 42 inches in width. Rolls are generally loaded onto a spindle, and the media is pulled through the printer.

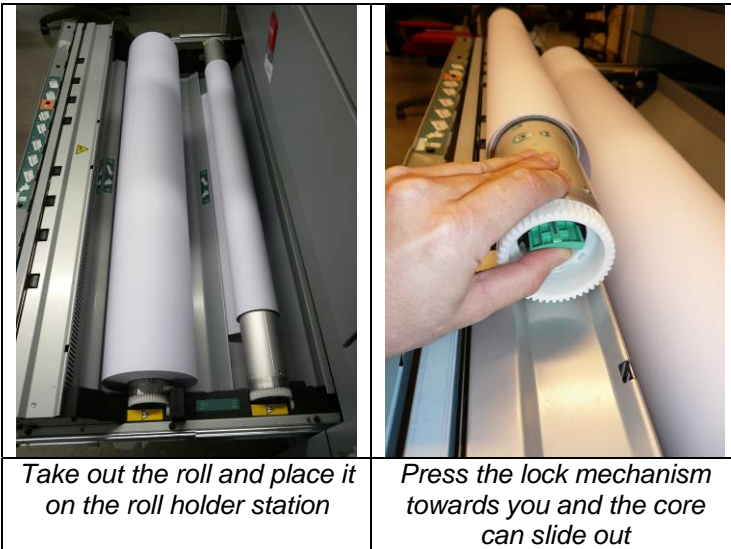
Media Handling Input Features Summary

Standard Media Capacity	Two rolls
Maximum Media Capacity	Six rolls
Cut Sheet Feed Capability	No
Media Types	Bond (20-36 lb), Recycled Bond (20 lb), Vellum (20 lb), Translucent (18 lb), Film (4 mil) Tyvek® (140 gr/m ²)
Maximum Media Width	42"
Maximum Media Length	9.8 ft (2.99m). Longer lengths can be printed without guarantee for the side margins.
Minimum Media Width	11"
Maximum Media Weight	Info not available
Standard Media Core Size	3"

Loading and Unloading Media Rolls

Loading rolls of media is quite easy and can be accomplished by novice users. One of the benefits of the Océ ColorWave 600 printer is that load/unloading is done from the front of the printer.

To unload media, users simply lift out the roll and place it on the roll hold station. Pull the handle of the lock holder mechanism towards you and slide the core out of the roll.



After a new roll has been loaded, go to the operator monitor and select the correct paper type of media. The size is automatically detected.

WHAT WE LIKED

- Unloading and loading of media rolls is easy.
- The wide-format printer accepts a wide range of paper types, from standard bond, vellum, translucent bond, film, and Tyvek®.

WHAT WE WOULD LIKE TO SEE

- BERTL has no recommendations at this time.

WIDEFORMAT

Media Handling: Output/Finish



The Océ ColorWave 600 printer can output media to the back and top front of the printer, either in the back to a receiving rack or to one of the stacker options available from Océ.

Media Handling: Output/Finishing Features Summary

Maximum Output Capacity	Info not available
Standard Output Capacity	50-100 prints
Width Detection	Yes
Output Face Down	Yes
Output Face Up	No
Folding Options	Optional

WHAT WE LIKED

- There is easy access to the printed output.
- There are flexible options with receiving racks, Océ stacker, and Océ folder.

WHAT WE WOULD LIKE TO SEE

- BERTL does not have any recommendations at this time.

WIDEFORMAT

Routine Maintenance



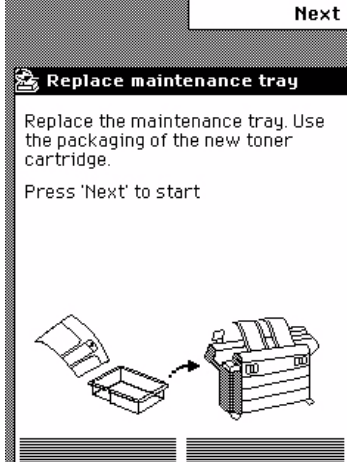
Routine maintenance includes Océ TonerPearls cartridge replacement and replacement of the waste basket in the back. That's it. For the Océ ColorWave 600 printer, these tasks are done through the cartridge located at the top left of the printer.



The single toner cartridge can be replaced quickly. Simply pull out the empty cartridge,



and push in a new cartridge.



When the new toner cartridge is placed correctly, the following message is displayed on the printer operator panel: 'Replace the maintenance tray. Use the packaging of the new toner cartridge.' Follow the instructions in the wizard.



The toner waste basket is located in the back. This was the amount of waste toner we generate after two days of intensive testing. The waste toner returns back to solid form that is non-toxic and can be disposed through regular trash.

Maintenance Features Summary

Toner	Dry Océ TonerPearls
Toner Container	Cartridge
Toner Yield	Info not available
Load toner while printing	Yes
Waste Toner Receptacle yield	Info not available
User Replaceable Waste toner Receptacle	Yes

WHAT WE LIKED

- The ease of replacing the Océ TonerPearls cartridge.
- 100% utilization of toner.

WHAT WE WOULD LIKE TO SEE

- BERTL does not have any recommendations at this time.

Device Management



An efficient device management backbone is needed to take full advantage of the feature set within a printing device. Device management is commonly supported through a Web server on the device controller that can be accessed using any desktop Internet browser. The user simply enters the IP address of the device into the URL address line. Users can also access device management at the print/copy/scan controller if the controller has a keyboard, monitor, and mouse.

An administrator and a user have different management and monitoring needs.

Users

End users want to know if a device is capable of handling a job. Supply levels and a list of jobs already committed to print are important. For MFPs with document storage and communication capabilities, end users also need desktop management of print on demand, stored document viewing (to check print on demand files or scanned files), and, for the more advanced, the creation of scan-to-email and scan-to-file destination templates.

Administrators

An office or network manager looks for greater control over the device functionality and set up without leaving their desk. They may be looking to manage network set up, establish security, apply cost control measures, and check supply levels. A set up for automated email can alert different staff members when problems occur.

Due to the nature of the Web server, this capability is usually limited to an individual device. Many manufacturers also include a network device management fleet tool, which allows for the monitoring and management of multiple devices around the network concurrently. Many also provide plug-ins to the most popular IT device management utilities to ensure the maximum amount of information can be relayed from their device to the third-party application.

Printer status is monitored from multiple locations — the screen interface at the printer console, the Windows device driver, Océ Express WebTools, Océ Publisher Select, and others.

Device Management Features Summary

Web-Based Device Management	Yes
Executable-Based Device Management	Yes
Group Management Capability	No
Manage Third-Party Devices	No

WHAT WE LIKED

- In the Printer Status menu, the user can immediately get all the important information about the printer's condition.

WHAT WE WOULD LIKE TO SEE

- Automatic error notification via email to the printer administrator.
- Printer group management capability.

Security



High-tech security is never out of the news, with reports of information theft and hacking making headlines. By the very nature of their development, network printers and MFPs are security risks if not managed correctly. This also holds true for wide-format MFPs, if not more so, because of the building plans, maps, and electrical drawings running through these machines. Security may be even more important in these cases.

Advanced network connectivity options open ports to hackers. Industry-standard Java and Web browser design elements are vulnerable to virus attack. Large hard drives store a latent copy of every document flowing through the device for years. Devices link directly to core network components such as the LDAP address list or the central file server. Plus, fast communication options let insiders send information to the outside with no method of being traced.

Security and data compliance buzzwords and regulations such as Common Criteria certification, HIPAA, Sarbanes-Oxley, Gram Leach Bliley, FERPA, SEC, FSMA, and the Patriot Act look to safeguard information and force companies to conform to best practices in document and data security management.

Safeguarding Data

Most MFPs now offer a standard or optional hard drive. Although document security is not as common as with cut-sheet MFPs, there are manufacturers that are considering the need. And, some have implemented document security in their machines already. Any company dealing in critical, sensitive information should determine if they need data-overwrite capability that has passed Common Criteria (CC) certification. Data overwrite deletes information on the hard drive by writing a series of random ones and zeros over the sectors storing data, usually multiple times. The CC test relates to how data is deleted from a device's hard drive after being used. CC certification is carried out by a government-approved test facility. Many manufacturers get CC certification to satisfy government security requirements, and it is a requisite for many government agencies and contractors. Most MFP devices pass evaluation assurance level (EAL) 2, with some aiming higher at EAL 3. The higher the level, the more extensive the testing, and the more secure the hard drive is considered.

Controlling Access

One of the keys to security is limiting the initial access to the device both remotely and at the device itself. TCP/IP and MAC filtering allow the administrator to limit remote access to the device. MAC filtering is more secure; the TCP/IP address can be copied, but the MAC address is a fixed specification that cannot be changed. IPv6 is now becoming commonplace on network devices. IPv6 also makes it harder to crack or hack into a PC address range by making the address more complex.

Network authentication is now available on nearly every MFP and printer, forcing users to enter a user name and password before access to the device is granted. Most devices can verify a user by linking to Windows Exchange user lists, Novell network user lists, and LDAP server lists. There should also be password encryption at the point of the login process through SSL or other encryption or security technology (such as Kerberos), preventing hackers from watching and capturing user names and IDs as they travel through the network.

Security Features Summary	
Hard Drive Overwrite	No
Removable Hard Drive	No
Private Print	No
Encrypted Print	No
Encrypted PDF Send	Not Applicable
Network Authentication	Not Applicable
LDAP Authentication	Not Applicable
Kerberos Authentication	Info not available
SNMP v3.0	Info not available
IPv6	Info not available
SSL	Info not available
IP Filtering	Info not available
MAC Filtering	Info not available

WHAT WE WOULD LIKE TO SEE

- We would like to see hard disk overwrite.
- We would like to see a removable hard drive.
- We would like to see more security features.

Accessibility



In the United States, Section 508 legislation prohibits government agencies from purchasing devices that are not accessible to those with physical impairments. For this reason—and the corporate world's increased focus on delivering a better work environment for all—user-friendly features for physically impaired users are more common.

Common design features include tilting control panels, which give wheelchair-bound users a better view of the screen, and larger display options for those with impaired vision.

Voice navigation and Braille also are becoming increasingly popular. Easy access to the paper path for jam removal or front access to toner supplies can make a device more user friendly to all.

User Accessibility to Device Controls

The Océ ColorWave 600 print operation monitor is navigated with touch buttons that should be large enough in size, improving navigation for the visually impaired. We also noticed that the monitor panels can be adjusted for different angles and swiveled around.

User Accessibility for Printed Media

The Océ ColorWave 600 paper output is normally in the top front, which could be a little challenging to access from a seated position.

User Accessibility for Media Refilling

The Océ ColorWave 600 paper rolls can easily be replaced from a seated position. The media rolls are accessed at the front of the machine.

User Accessibility for Media Jam Removal

Wheelchair users should be able to view messages on the operation panel screen, indicating that there is a paper jam. With the device's short paper path, wheelchair users should be able to handle any jam that occurs with the same ease as a standing user.

User Accessibility for Routine Maintenance

The toner containers are housed on the top left part of the Océ ColorWave 600 printer, and it is fairly easy to access them even for wheelchair users.

WHAT WE LIKED

- Wheelchair users should be able to access the control panel and any paper jams, although it may be more difficult for them to access the top-loading receiving tray from a seated position.

WHAT WE WOULD LIKE TO SEE

- The touch screen monitor could be a color display instead of a grayscale display.

WIDEFORMAT

Summary



The Océ ColorWave 600 printer was an exceptional surprise. As a 42" wide-format mid-volume color printer starting around \$60,000 (€35,000) for a two-roll configuration and upgradable to a six-roll printer in the field, the Océ ColorWave 600 printer fits nicely into the mid-volume segment of the market. The Océ ColorWave 600 printer is rated around 4 'D' size per minutes for both monochrome and color.

The Océ CrystalPoint printing technology, which took more than 10 years and \$150 million to develop, looks very promising. Océ CrystalPoint technology blends the advantages of toner and ink-jet technologies into one new technology. The Océ TonerPearls toner is environmentally friendly, and its solid form provides the possibility for 100% utilization, so there is no wasted toner.

The Océ ColorWave 600 printer is very versatile and can be configured from a two-roll to a six-roll configuration using regular paper as the media. Due to its silk shine finish, even color photos look great on regular paper, avoiding the need for more expensive type of media and making production runs less expensive.

The color matching is very good, although we saw a slight tendency for less vivid color when printing photos or art work, which we attributed to the use of regular paper. CAD drawings or architectural color renderings were handled without any problems.

The Océ ColorWave 600 printer can use the Océ traditional stacker and folder to handle large volumes of printing effectively.

We noticed that the Océ ColorWave 600 printer is lacking some security and device management features found on other systems in its class.

The Océ ColorWave 600 printer performed very well in testing.

Overall, BERTL recommends the Océ ColorWave 600 as an outstanding mid-volume printer utilizing the new and very promising Océ CrystalPoint printing technology. BERTL awards the Océ ColorWave 600 printer four and a half stars.

PROs	CONs
Océ CrystalPoint Printing Technology	Lacking security features.
Océ TonerPearls instead of regular toner	Lacking some device management features.
Excellent color reproduction on plain paper	
Environmentally friendly	

WIDEFORMAT

WHAT WE LIKED

- We liked the fast production speed of the Océ ColorWave 600 printer.
- The Océ TonerPearls color cartridge is the easiest and fastest way we have seen to add or remove cartridge.
- The Océ Publisher Express Web-based application avoids any need for installing the application on the computer.
- The printer is easy to use through the built-in touch display, the Windows driver, or any of the Océ printing applications.
- The printer driver is well organized and easy to use and operate.
- We like the Océ Print Assistant for the ability to optimize the print quality setting based on the actual file contents for the printed file.
- We liked the Web-based Océ Express WebTools for its simplicity and ease of use for simple print job submission.
- Real-time status of available toner and printer action required.
- We liked Océ Publisher Select for its high-end features addressing the needs of the professional to create larger and more complex job sets in an easy way.
- We liked the Stamp feature for overlaying text and images on a file.
- We liked the image quality in all modes: Economy, Production and Presentation.
- We noticed that in many cases Production mode was more than sufficient in improving the speed of the printer for real-world production.
- We liked the fast color printing compared to typical ink-jet based technology.
- Unloading and loading of media rolls is easy.
- The wide-format printer accepts a wide range of paper types, from standard bond, vellum, translucent bond, film, and Tyvek®.
- There is easy access to the printed output.
- There are flexible options with receiving racks, Océ stacker, and Océ folder.
- The ease of replacing the Océ TonerPearls cartridge.
- 100% utilization of toner.
- In the Printer Status menu, the user can immediately get all the important information about the printer's condition.
- Wheelchair users should be able to access the control panel and any paper jams, although it may be more difficult for them to access the top-loading receiving tray from a seated position.

WHAT WE WOULD LIKE TO SEE

- It would be nice to see support of multiple files and building of job sets in the Web-based Océ Express WebTools (Océ Publisher Select does support multiple files and job sets).
- We would like to see actual toner and paper roll status available in the Océ Publisher Select.
- Automatic error notification via email to the printer administrator.
- Printer group management capability.
- We would like to see hard disk overwrite.
- We would like to see a removable hard drive.
- We would like to see more security features.
- The touch screen monitor could be a color display instead of a grayscale display.

WIDEFORMAT

About BERTL

The success of an organization depends on its ability to manage its information and assets. An effective workflow process requires the complex integration of information, devices, software, and people.

IT managers, office managers, and other knowledge management professionals need to know what digital imaging devices would best serve their specialized workflow processes.

BERTL's services are designed around this real-world framework, delivering business consumers the independent analysis and insight needed to make critical decisions about digital imaging's role in their organization.

Independent Analysis and Insight

BERTL's reports, comparative data, and strategic guides look at digital imaging through the eyes of the business user. The research examines not only the technical features, but also vertical market applications and business benefits. The impact on worker productivity is a primary concern.

BERTL is 100 percent independent. It receives no funding from manufacturers, and all product evaluations and reports are published at BERTL's own expense for its subscribers. Business users worldwide trust BERTL for objective, unbiased analysis of digital imaging systems.

BERTL Services

Reports and Star Ratings

BERTL analysts provide detailed reports on the technical and practical benefits of thousands of color and monochrome workgroup, office, graphic arts, and production devices.

Product Specifications

DataCheck Gen II provides the most current competitive data on printers, copiers, MFPs, fax devices, wide-format printers, scanners, and more.

News, Interviews, and Analysis

The *iTchat* online magazine provides insight into the dynamics and trends of the digital imaging marketplace through interviews, feature articles, and software reviews.

BERTL Awards

BERTL analysts recognize the leading devices and software solutions in the annual BERTL's Best awards. BERTL also honors the performance of manufacturers in the annual Readers' Choice selections.

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PRODUCT SPECS



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AWARDS



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BERTL

OUTSTANDING



Océ ColorWave 600

**CERTIFIED FOUR AND A HALF STAR
OUTSTANDING**

BERTL publishes product evaluation reviews on several hundred copiers, printers, fax, multi-functional, colour and production devices every year. Out of these hundreds of devices, only a small number qualify for the highly prestigious 4 and a half Star, Outstanding rating. This rating is strictly reserved for those devices that deliver a range of business-critical features/functions that are above average and provide potential buyers with a good return on investment (ROI).

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