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OCÉ COLORADO 1640 PRINTER INK CONSUMPTION TESTING

Introduction

With the Océ Colorado 1640 Printer, customers can expect to save on average 40% on ink usage versus competitive printers (including waste). The reason is that Canon UVgel technology has a much more efficient ink usage across different media, compared to HP Latex ink, for example. To prove this claim about ink savings, we measured the actual ink usage across three ink technologies, with Buyers Laboratories Inc. (BLI) validating the process and results.

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ONYX TEST FILE



INK CONSUMPTION TEST FILE



OUTDOOR BANNER TEST FILE

TEST OBJECTIVE

The test evaluated ink consumption of three 64-inch wide format devices – the Océ Colorado 1640 printer, Roland's seven-color eco-solvent ink SOLJET EJ-640 and HP's six-color latex ink Latex 570. All devices were serviced by a vendor-approved service agent before testing commenced.

The evaluation comprised of printing two test files (Onyx and Ink Consumption) twice on each device on Avery Dennison® MPI 2000 media. The Onyx test file was configured and printed as "4-Up," which measured approximately 11.18 feet² (1.04 m²), while the larger Ink Consumption file, which measured approximately 21.53 feet² (2.00 m²), was printed as seen in the thumbnail image above. The high quality (430 ft²/hour) driver setting was used for printing the samples on Océ Colorado 1640 printer, while two manufacturer-advised speed modes for vinyl/indoor quality were used on each of the other devices: 10 and 12 pass for the Roland unit and 10 and 6 pass for the HP unit. Each manufacturers published 10 pass MPI 2000 media profile was used, while the published MPI 2000 Océ high quality (430 ft²/hour) profile was also used. However, because media profiles are not available for either the Roland EJ-640 unit 12 pass setting or the HP Latex 570 6 pass setting, their generic vinyl media profiles were used instead. Lastly, a third Banner test file was configured and printed as "2-Up," which measured approximately 30.23 feet² (2.81 m²), and printed twice on each device on Starflex SFF-155 banner media. The production (610 ft²/hour) driver

setting was used for printing on the Océ Colorado 1640 printer, and because there is no specific profile for the Roland device, a generic banner 10 pass media profile was used, which is the speed Roland recommends for printing on banner material. For the HP printer, the Starflex SFF-155 6 pass profile was used as was a generic banner 4 pass media profile, which are HP-recommended banner print settings.

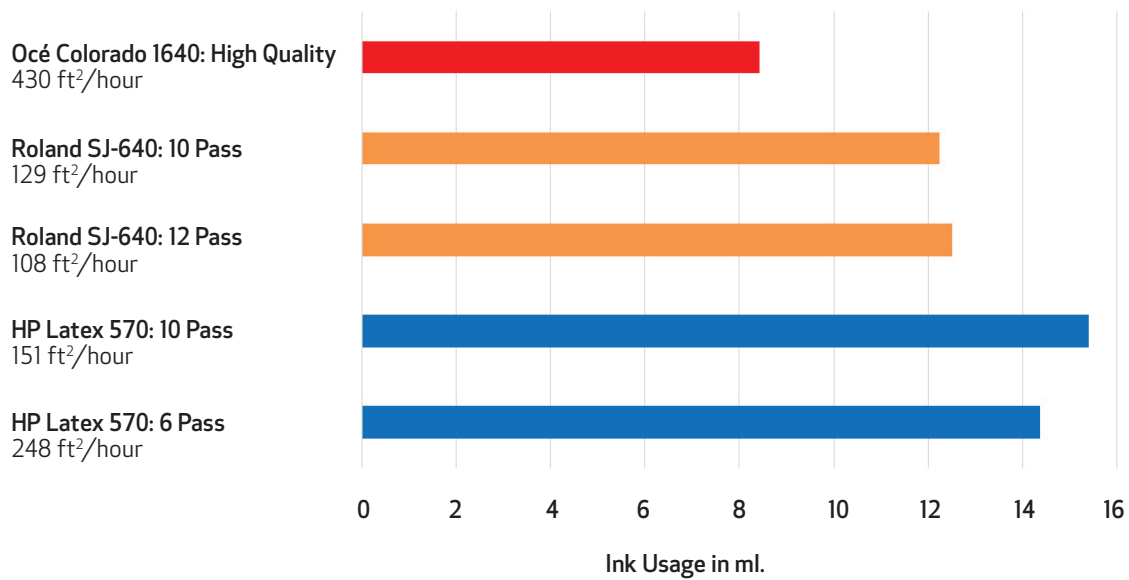
Additionally, like-for-like color management settings were utilized across all devices: in the Onyx RIP, which was used for both the Océ and HP devices, the CMYK ICC profile was set to EuroscaleCoated and the RGB profile was set to Adobe®RGB1998. The rendering intent for images was set to Perceptual (images) and the rendering intent for vector was set to Relative colorimetric. For the VersaWorks™ Dual RIP, (which is the default RIP for Roland SOLJET EJ-640), the CMYK ICC profile was likewise set to EuroscaleCoated and the RGB profile was set to AdobeRGB1998, while the rendering intent for images was set to Perceptual and the rendering intent for vector was set to Colorimetric. The subsequent ink usage results that were provided in the accounting utility supplied by each printer manufacturer in the device's web server/Job Log immediately after printing each test file are recorded below.

In summary, the tests are performed on identical media and equivalent print settings for all three printers, each using supplier provided print profiles and supplier recommended print speed modes. The above testing method and results have been validated to be correct by Buyers Laboratory Inc.

TEST RESULTS

ONYX TEST FILE — Printed on Avery Dennison MPI 2000 Media						
DEVICE	MEDIA PROFILE USED	PRINT DRIVER QUALITY SETTING	SPEED	INK USAGE (In ml)	AVERAGE INK USAGE FOR TWO PRINT RUNS (in ml)	PERCENTAGE LESS INK USED BY OCÉ COLORADO 1640
Océ Colorado 1640	MPI 2000	High Quality	430 ft ² /hour	8.43	8.43	—
	MPI 2000	High Quality	430 ft ² /hour	8.43		
Roland EJ-640	MPI 2000	10 Pass	129 ft ² /hour	12.24	12.24	31.13%
	MPI 2000	10 Pass	129 ft ² /hour	12.24		
	Generic Vinyl	12 Pass	108 ft ² /hour	12.50	12.50	32.56%
	Generic Vinyl	12 Pass	108 ft ² /hour	12.50		
HP Latex 570	MPI 2000	10 Pass	151 ft ² /hour	15.39	15.41	45.30%
	MPI 2000	10 Pass	151 ft ² /hour	15.43		
	Generic Vinyl	6 Pass	248 ft ² /hour	14.35	14.37	41.34%
	Generic Vinyl	6 Pass	248 ft ² /hour	14.39		

ONYX TEST FILE

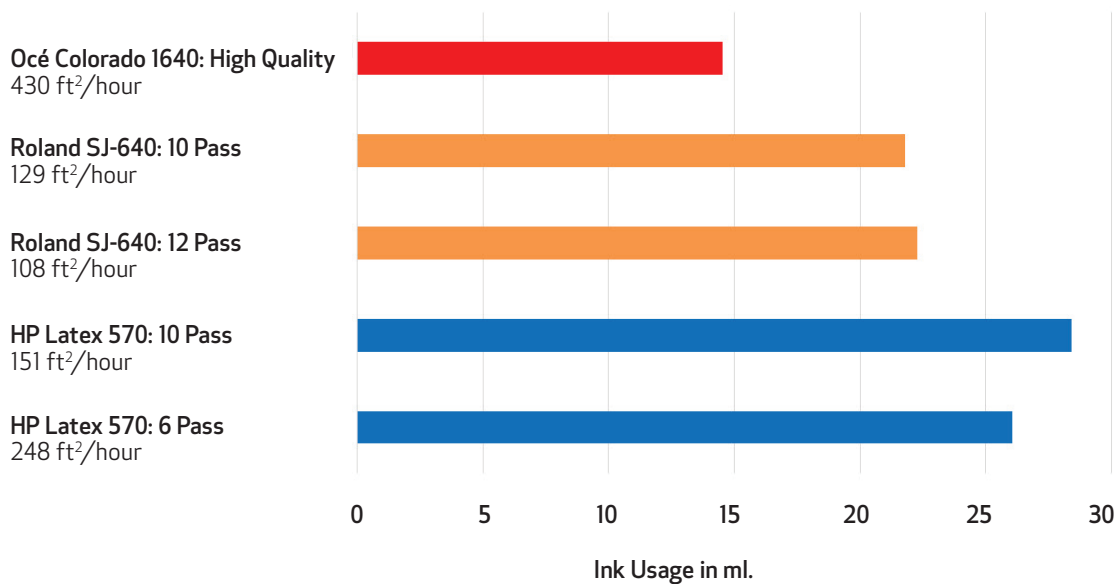


The above testing method and results have been validated to be correct by Buyers Laboratory Inc.



INK CONSUMPTION TEST FILE — Printed on Avery Dennison MPI 2000 Media						
DEVICE	MEDIA PROFILE USED	PRINT DRIVER QUALITY SETTING	SPEED	INK USAGE (In ml)	AVERAGE INK USAGE FOR TWO PRINT RUNS (in ml)	PERCENTAGE LESS INK USED BY OCÉ COLORADO 1640
Océ Colorado 1640	MPI 2000	High Quality	430 ft ² /hour	14.53	14.53	—
	MPI 2000	High Quality	430 ft ² /hour	14.53		
Roland EJ-640	MPI 2000	10 Pass	129 ft ² /hour	21.77	21.77	33.26%
	MPI 2000	10 Pass	129 ft ² /hour	21.77		
	Generic Vinyl	12 Pass	108 ft ² /hour	22.28	22.28	34.78%
	Generic Vinyl	12 Pass	108 ft ² /hour	22.28		
HP Latex 570	MPI 2000	10 Pass	151 ft ² /hour	26.32	28.40	48.84%
	MPI 2000	10 Pass	151 ft ² /hour	28.47		
	Generic Vinyl	6 Pass	248 ft ² /hour	26.05	26.05	44.22%
	Generic Vinyl	6 Pass	248 ft ² /hour	26.05		

INK CONSUMPTION TEST FILE

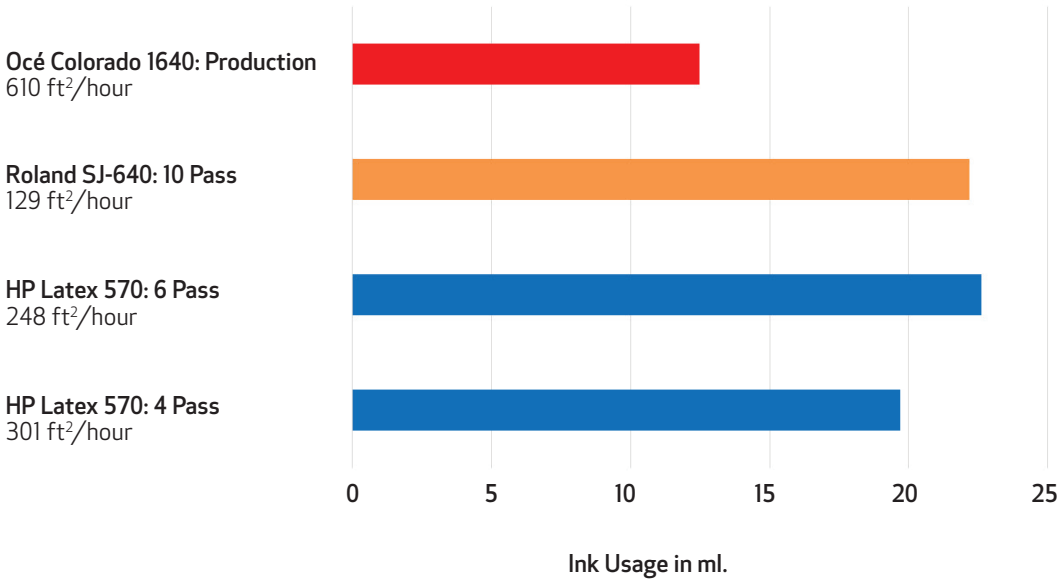


The above testing method and results have been validated to be correct by Buyers Laboratory Inc.



OUTDOOR BANNER TEST FILE — Printed on Starflex SFF-15 Media						
DEVICE	MEDIA PROFILE USED	PRINT DRIVER QUALITY SETTING	SPEED	INK USAGE (In ml)	AVERAGE INK USAGE FOR TWO PRINT RUNS (in ml)	PERCENTAGE LESS INK USED BY OCÉ COLORADO 1640
Océ Colorado 1640	Starflex SSF-15	Production	610 ft ² /hour	12.49	12.49	—
	Starflex SSF-15	Production	610 ft ² /hour	12.49		
Roland EJ-640	Generic Banner	10 Pass	129 ft ² /hour	22.19	22.19	43.71%
	Generic Banner	10 Pass	129 ft ² /hour	22.19		
HP Latex 570	Starflex SSF-15	6 Pass	248 ft ² /hour	22.58	22.60	44.73%
	Starflex SSF-15	6 Pass	248 ft ² /hour	22.61		
	Generic Banner	4 Pass	301 ft ² /hour	19.63	19.71	36.63%
	Generic Banner	4 Pass	301 ft ² /hour	19.78		

OUTDOOR BANNER TEST FILE



The above testing method and results have been validated to be correct by Buyers Laboratory Inc.

INK CONSUMPTION TESTS VERSUS HP LATEX 570

- Océ Colorado 1640 uses 43% less ink than HP Latex 570 in these two tests.
- Avery MPI 2000 Adhesive Backed Vinyl.
- Onyx RIP, embedded profiles, HP data from HP Web tools job log.

Onyx Test File	Comparable Print Modes	ml sq/ft	Ink savings for Océ Colorado
Océ Colorado 1640	430 sq/ft hr	0.73	
HP Latex 570	6P-6c 248 sq/ft hr	1.21	40%
HP Latex 570	10P*-6c 151 sq/ft hr	1.28	43%

Arizona Test File	Comparable Print Modes	ml sq/ft	Ink savings for Océ Colorado
Océ Colorado 1640	430 sq/ft hr	0.66	
HP Latex 570	6P-6c 248 sq/ft hr	1.18	44%
HP Latex 570	10P*-6c 151 sq/ft hr	1.23	47%

Combined Average		ml sq/ft	Ink savings for Océ Colorado
Océ Colorado 1640		0.70	
HP Latex 570		1.23	43%

*Comparable print mode to Océ Colorado 1640 at 430 sq/ft hr



DETERMINING TRUE \$'S PER SQ/FT INK RUNNING COSTS

	HP Latex 570	Océ Colorado 1640
Ink Usage	1.28 ml sq/ft	0.73 ml sq/ft
Cost ml	\$0.130/ml*	\$0.125 / ml
Cost sq/ft	\$0.166 sq/ft	\$0.091 sq/ft
Ink Savings in \$	46%	

DETERMINING TRUE \$'S PER SQ/FT TOTAL RUNNING COSTS

Research shows that HP Latex printers require the following items that are required to calculate running costs.

	Price	Cost/ml	Cost per sq/ft
HP Latex Inks 775ml (HP365)	\$140	\$0.181	\$0.223 (\$0.181/ml x 1.23ml)
HP Latex Inks 3 liter (HP570)	\$390	\$0.13	\$0.160 (\$0.13/ml x 1.23ml)
HP Print Heads			\$0.047 (replace every 3-4 liters)
HP Maintenance Cartridges			\$0.01
		Total	\$0.21 (HP570)
			\$0.273 (HP365)
Océ Colorado Inks 2 liter	\$250	\$0.125	\$0.088 (\$0.125/ml x 0.7ml)
Océ Colorado Print Heads			\$0.022 (.6 head per 107,639 sq/ft)
Océ Colorado Maintenance			\$0.001
		Total	\$0.114

*HP Latex inks have a per sq/ft coverage rate 43% higher than UVgel at 1.23 per sq/ft compared to 0.7ml per sq/ft for Océ Colorado 1640 using criteria in previous page.

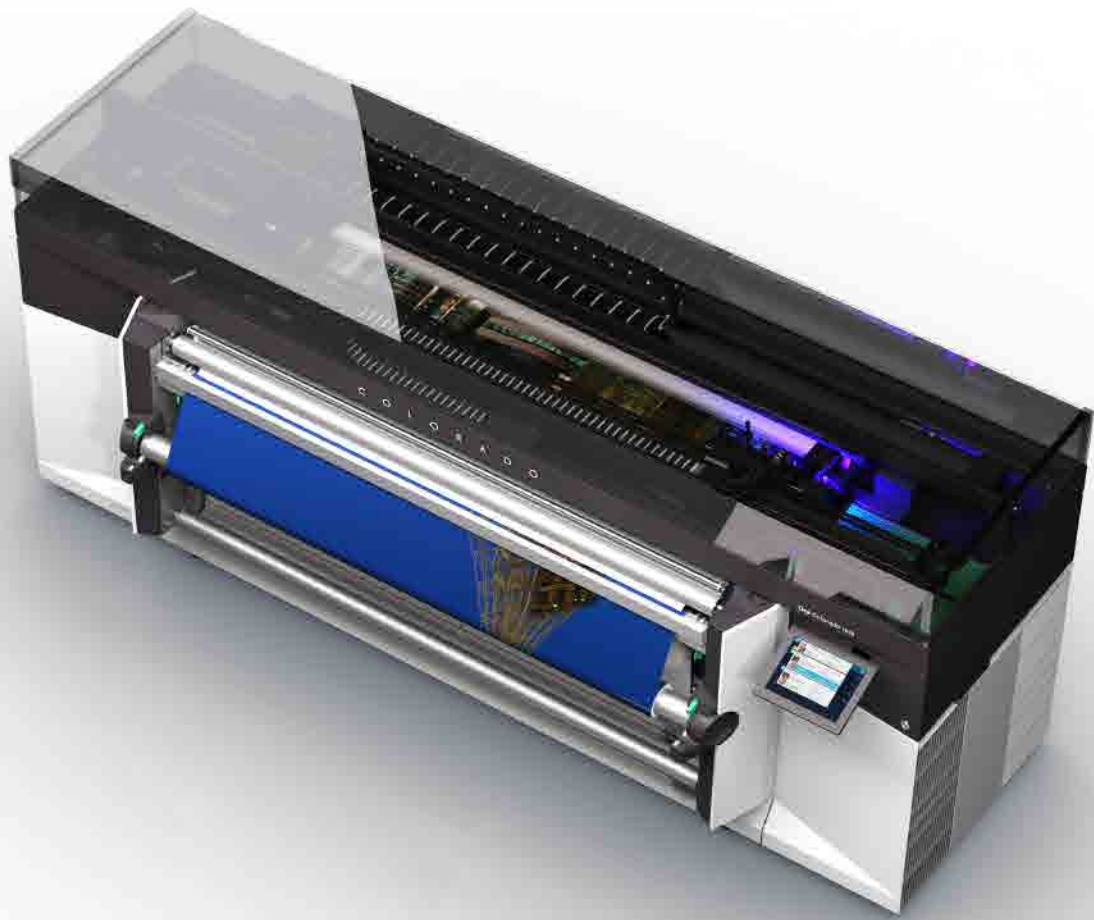
VALUE OF THE UVGEL TECHNOLOGY

Monthly Print Volume	Savings to HP 570	Savings to HP 365
@ 5,000 sq/ft	\$485/mth	\$800/mth
@ 10,000 sq/ft	\$970/mth	\$1,600/mth
@ 15,000 sq/ft	\$1,455/mth	\$2,400/mth

Switching existing print volumes from latex devices can easily cost justify an Océ Colorado 1640 and pay for the lease with relatively little volume

SUMMARY

- The Roland SOLJET EJ-640 printer used 12.24 ml. of ink on average when printing the Onyx test file at the 10 pass setting, while 12.50 ml. of ink were used on average at the 12 pass setting. In contrast, the Océ Colorado 1640 printer used 8.43 ml. ink when printing the same file at the high quality 430 ft²/hour setting. In terms of percentage of ink used, the Océ Colorado 1640 printer utilized 31.13% and 32.56% less ink, respectively, versus the two Roland print scenarios.
- The HP Latex 570 device used 15.41 ml. of ink on average when printing the same Onyx test file at the 10 pass setting, while 14.37 ml. of ink were used by the HP printer at the 6 pass setting. Again, this is compared with the aforementioned 8.43 ml. of ink used by the Océ Colorado 1640 printer. In terms of percentage of ink used, the Océ Colorado 1640 printer used 45.30% and 41.34% less ink, respectively, versus the two HP print scenarios.
- For the Ink Consumption test file, the Roland EJ-640 printer used an average 21.77 ml. of ink at the 10 pass setting and 22.28 ml. of ink at the 12 pass setting, while the Océ Colorado 1640 printer used 14.53 ml. of ink when printing the same file at the high quality setting. In terms of percentage of ink used, the Océ Colorado 1640 printer used 33.26% and 34.78% less ink, respectively, versus the two Roland print scenarios.
- Similarly, the HP Latex 570 printer used an average 28.40 ml. of ink at the 10 pass setting and 26.05 ml. of ink at the 6 pass setting when printing the Ink Consumption test file. Again, this is compared with the 14.53 ml. of ink used by the Océ Colorado 1640 printer. In terms of percentage of ink used, the Océ Colorado 1640 printer used 48.84% and 44.22% less ink, respectively, versus the two HP print scenarios.
- For the Outdoor Banner test file, the Roland EJ-640 used an average of 22.19 ml. of ink at the 10 pass generic banner setting, while the Océ Colorado 1640 printer used 12.49 ml. when printing the same file at the production setting. In terms of percentage of ink used, the Océ Colorado 1640 printer used 43.71% less ink than did the Roland EJ-640.
- Lastly, the HP Latex 570 printer used an average of 22.60 ml. of ink at the 6 pass setting, and 19.71 ml. of ink at the 4 pass setting when printing the Outdoor Banner test file. Again, this is compared with the 12.49 ml. of ink used by the Océ Colorado 1640 printer. In terms of percentage of ink used, the Océ Colorado 1640 printer used 44.73% and 36.63% less ink, respectively, versus the two HP print scenarios.



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