# Document Print and Copy Speed Measurement Conditions

Print and copy speeds listed below reflect measured values based on the international standard and are for reference only.
ISO/IEC 24734 defines the default print speed measurement methods.
ISO/IEC 17629:2014 defines the default first print out time measurement methods.
ISO/IEC 29183 defines the default copy speed measurement methods of a single,one sided original. (Without using ADF)

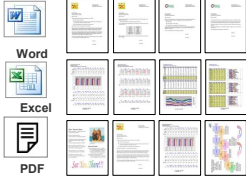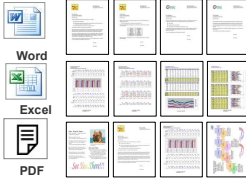ISO/IEC 24735 defines the default copy speed measurement methods. (With using ADF.)

ISO/IEC 17991difines the default scan speed measurement methods.(With using ADF.)
Print speed may vary depending on system configuration, interface, software, document complexity, print mode, page coverage, type of paper used etc.
Copy speed may vary depending on document complexity, copy mode, page coverage, type of paper used etc.
Scan speed may vary depending on system configuration, interface,software,document complexity, print mode, page coverage, type of paper used etc.
Speeds are calculated by rounding off the actual measurement value.

| | | Print Speed<br>ISO/IEC 24734 | First Print Out Time<br>ISO/IEC17629 | Copy Speed<br>ISO/IEC 29183 | ADF Copy Speed<br>ISO/IEC 24735 | ADF Scan Speed<br>ISO/IEC 17991 |
|---|---|---|---|---|---|---|
| Measurement Method | | <ESAT><br>(Estimated SAturated Throughput )<br>[ipm]<br><br>Print Word, Excel and PDF test files (4-pages/application). Print speed is calculated from time required to print a set (4 pages per 3 applications) of documents, plus additional sets in a duration of over 30 seconds and then average the result.<br>(Exclude time to print 1st set.) | <FPOT Ready><br>(First Print Out Time From Ready)<br>[sec.]<br><br>Print Word, Excel and PDF test files (4-pages/application). First Print Out speed is calculated as the average time required to print the first page of each document. | <sESAT><br>[ipm]<br><br>Copy 4-page PDF test files. Copy speed is calculated from time required to print 1 set (4 pages), plus additional sets in a duration of over 30 seconds and then average the result.<br><br>The test files are printed with the printer to be tested.<br>(Exclude time to copy the 1st page.) | <ESAT><br>(Estimated SAturated Throughput )<br>[ipm]<br><br>Copy from ADF the 4-page PDF test files. Copy from ADF speed is calculated from time required to copy a set of documents, plus additional sets in a duration of over 30 seconds.<br><br>The test files are printed with the printer to be tested.<br>(Excluding time to print the 1st set.) | <scESAT$_{30secA}$><br>(Scanning Estimated Saturated Throughput)<br>[ipm]<br><br>Scan 4-page PDF test files with ADF. ADF Scan Speed is calculated from time required to scan a set of documents, plus additional sets in a duration of over 30 seconds.<br>(Exclude time to print 1st set.) |
| | | <FSOT><br>(First Set Out Time)<br>[sec.]<br><br>Print Word, Excel and PDF test files. Print speed is the time to print 1 set (4 pages per 3 applications) from clicking the 'OK' button to print.<br>(Include processing time.) | <Recovery Time><br>(The difference in FPOT between sleep mode and ready mode for simplex printing<br>[sec.]<br><br>The recovery time when starting from Sleep is estimated by using the difference in FPOT of the Reader file between Sleep and Ready for simplex printing. | <sFSOT><br>[sec.]<br><br>Copy 4-page PDF test files. Copy speed is the time to copy 1 set (4 pages) from clicking the COPY button.<br><br>The test files are printed with the printer to be tested.<br>(Include the processing time.) | <FSOT><br>(First Set Out Time)<br>[sec.]<br><br>Copy the 4-page PDF test files. Copy speed is the time to copy 4 pages loaded in ADF, from clicking the COPY button.<br>(Include the processing time.)<br><br>The test files are printed with the printer to be tested. | <scEFTP$_{30secF}$><br>(Scanning Effective Throughput for Scan to Network Folder)<br>[ipm]<br><br>Scan 4-page PDF test files with ADF. Scanning Effective Throughput for scEFTP$_{30secF}$ is calculated from time required to scan a set of documents, plus additional sets in a duration of over 30 seconds, and also time required to save scanned data in network folder. Calculate the number of pages scan and saved per minute. |
| Test Pattern | Type | Word / Excel / PDF | Word / Excel / PDF | PDF | PDF | PDF |
| | Size | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" |
| Paper | Type | Plain Paper | Plain Paper | Plain Paper | Plain Paper | Plain Paper |
| | Size | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" |
| Settings | Page Size | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" | A4, 8.5"x 11" |
| | Media Type | Plain Paper | Plain Paper | Plain Paper | Plain Paper | Plain Paper |
| | Quality | Default | Default | Default | Default | Default |
| | Borderless | OFF | OFF | OFF | OFF | OFF |
| PC environment | | OS: Windows10 Enterprise x64<br>CPU: Intel® Core™i7-8700 (3.20-4.60GHz/12MB)<br>RAM: 32GB<br>Interface: USB2.0 Hi-Speed | OS: Windows10 Enterprise x64<br>CPU: Intel® Core™i7-8700 (3.20-4.60GHz/12MB)<br>RAM: 32GB<br>Interface: USB2.0 Hi-Speed | N/A | N/A | OS: Windows10 Enterprise x64<br>CPU: Intel® Core™i7-8700 (3.20-4.60GHz/12MB)<br>RAM: 32GB<br>Interface: Cross Lan Cable |
| Application | | Word 2016/Excel 2016/ Acrobat Reader DC 2019 | Word 2016/Excel 2016/ Acrobat Reader DC 2019 | N/A | N/A | N/A |