

Introduction

This comprehensive testing sheet is designed to evaluate the Dynamsoft Barcode Reader SDK, assessing its performance under various barcode scanning scenarios and benchmarking it against other leading barcode libraries.

What is Dynamsoft Barcode Reader?

Dynamsoft Barcode Reader SDK is a software development kit that enables developers to integrate robust barcode reading capability into mobile, desktop, and web applications. It leverages advanced barcode reading algorithms to provide fast, accurate, and reliable barcode scanning capabilities across various platforms.



Quickly Integrate Barcode Scanning Across All Platforms with DBR

JavaScript (Web)

Enable real-time localization and decoding in a web browser on a mobile or laptop. With just a few lines of JavaScript code, any camera-equipped device can be transformed into a barcode and QR code scanner.

Desktop & Server

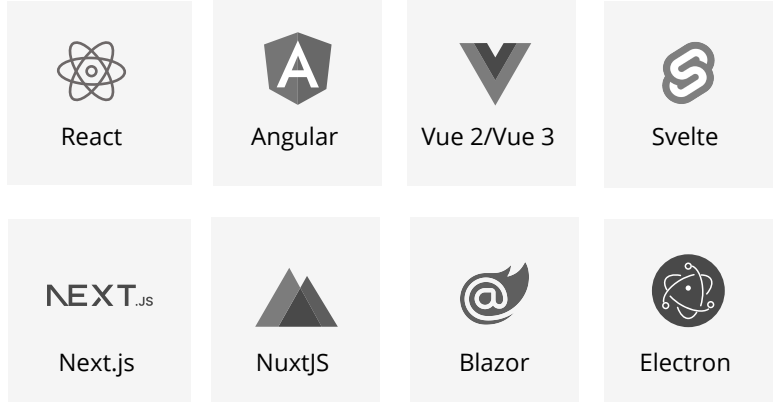
Easily integrate reliable barcode scanning into your desktop and server applications.

Mobile

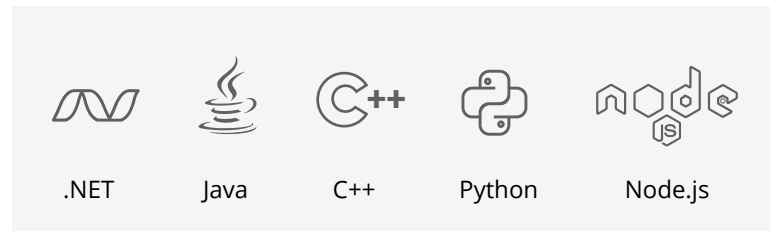
Embed robust QR code and barcode scanning capabilities into your native iOS and Android apps.

Languages and Frameworks

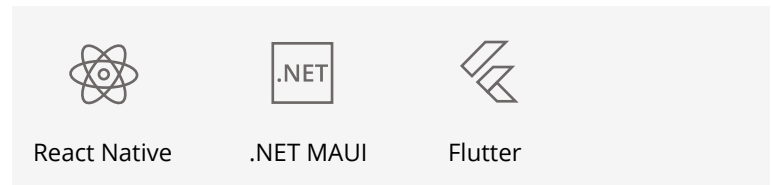
Web Development:



Desktop & Server Development:



Mobile Development:



Supported OS: Android 5.0 (API Level 21) or higher.

Supported ABI: armeabi-v7a, arm64-v8a, x86 and x86_64.



Supported OS: iOS 13 or higher.
Supported ABI: arm64 and x86_64.

Why Choose Dynamsoft Barcode Reader

Dynamsoft Barcode Reader SDK is trusted by leading organizations worldwide because of its unmatched performance across various platforms and applications.



Unparalleled Barcode Scanning Speed:

Dynamsoft Barcode Reader SDK tackles high-speed workflows by processing over 500 barcode scans per minute.



Boost Performance with Customized Scan Templates

Our customizable templates fine-tune performance for even the most challenging barcodes. [Get your own custom demo template.](#)



Scans Challenging Barcodes & QR Codes:

Leveraging reliable enterprise-grade barcode detection algorithms, Dynamsoft Barcode Reader SDK can easily read the toughest barcodes, such as crumpled, distorted, incomplete, or dense, in the most challenging scenarios.



Incomparable Barcode Reading Rate:

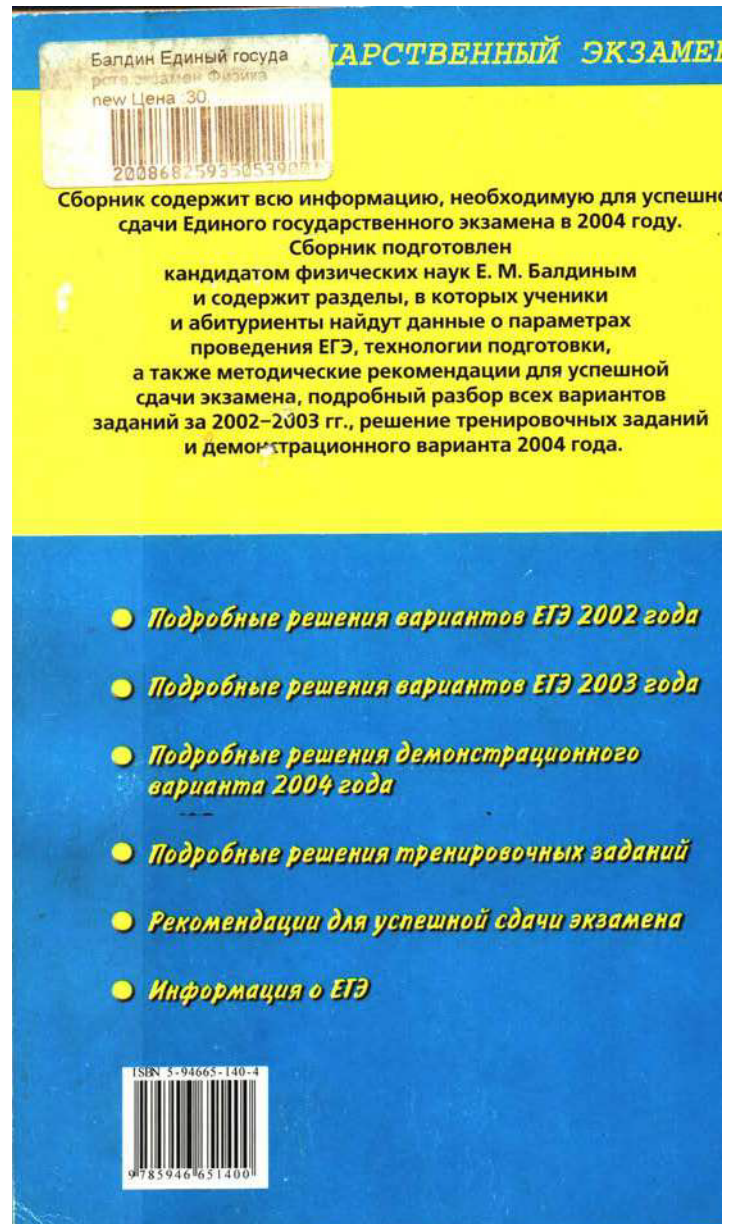
Dynamsoft Barcode Reader SDK outperforms six QR Code libraries, recognizing 34.9% more barcodes than the industry's second-best, and ranks first in a test of 1000+ QR Codes across 16 image quality categories.

Multiple Barcode Scanning

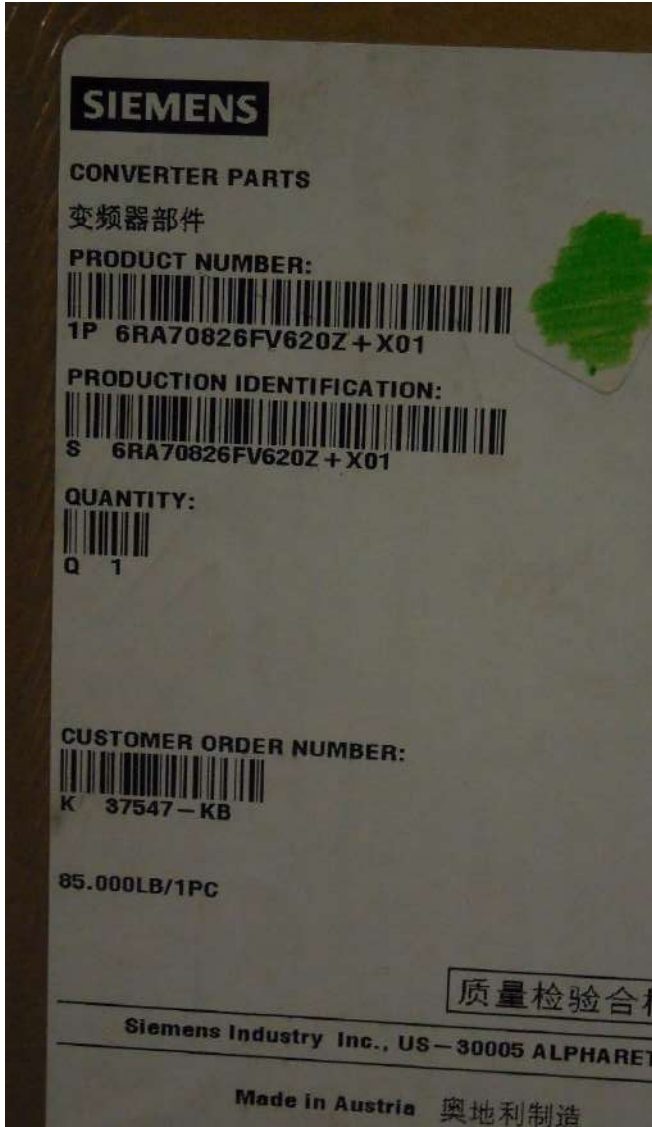
Dynamsoft Barcode Reader SDK is designed to detect and decode multiple barcodes of different symbologies in a single scan.



Single Symbology Multiple Barcodes:

Scan multiple barcodes of the same type in one go for streamlined processing.









ISSUED BY Aeroflot						BOARDING PASS /ПОСАДОЧНЫЙ ТАЛОН		ISO
2D BAR CODE		ISS. AGT. ID WCI/SVO	CARRIER/FLIGHT /ПЕРЕВОЗЧИК/РЕЙС SU 203		PNR CODE/КОД БРОНИРОВАНИЯ FYFHTM		RU	
		NAME OF PASSENGER/ФАМИЛИЯ ПАССАЖИРА	CLASS/DATE/КЛАСС/ДАТА Y 25JUL09		TIME/Время 17:10			
From /ИЗ: MOSCOW /SVO		To /В:	Gate /ВЫХОД	BOARD	Seat /МЕСТО			
SU50212013		HELSINKI VANTAA /HEL	TIME /ВРЕМЯ ПОСАДКИ 16:30	ELECTRONIC TKT	SEQ NO. SEQ/5			
		HAVE A NICE TRIP! СЧАСТЛИВОГО ПУТИ!		5552150568211				

- Посадка на рейс заканчивается за 10 минут до времени вылета. Не забудьте, что в аэропорту Вам предстоит пройти контроль безопасности, а при международном полете – таможенные и пограничные формальности. По прибытии в аэропорт уточните номер выхода на посадку!
- При посадке в самолет Вам необходимо предъявить обе части данного посадочного талона, а так же паспорт и документы для въезда в страну назначения (транзита).

ISSUED BY Aeroflot						BOARDING PASS /ПОСАДОЧНЫЙ ТАЛОН		ISO
2D BAR CODE		ISS. AGT. ID WCI/SVO	CARRIER/FLIGHT /ПЕРЕВОЗЧИК/РЕЙС SU 203		PNR CODE/КОД БРОНИРОВАНИЯ FYFHTM		RU	
		NAME OF PASSENGER/ФАМИЛИЯ ПАССАЖИРА	CLASS/DATE/КЛАСС/ДАТА Y 25JUL09		TIME/Время 17:10			
From /ИЗ: MOSCOW /SVO		To /В:	Gate /ВЫХОД	BOARD	Seat /МЕСТО			
SU50212013		HELSINKI VANTAA /HEL	TIME /ВРЕМЯ ПОСАДКИ 16:30	ELECTRONIC TKT	SEQ NO. SEQ/5			
		HAVE A NICE TRIP! СЧАСТЛИВОГО ПУТИ!		5552150568211				



Peruslippu

Helsinki Lentoasema - Jyväskylä

Lippu on voimassa vain lippuun merkityllä junavuorolla.

Muutos ennen junan lähtöä 5 € ja erotus kalliimpaan/ei hyvitystä edullisempaan lippuun.

Peruutus mahdollinen peruutusturvan ostaneille

Perjantai 08.12.2017

1 13:21 Helsinki lentoasema →

13:29 Tikkurila

Lähijuna P, Peruslippu, Eko (2.lk)

Aikuinen



A3FYHGQ=

Vaihtoaika: 11 min.

Perjantai 08.12.2017

1 13:40 Tikkurila →

16:40 Jyväskylä

S 145, Peruslippu, Ekstra (1.lk),
Istumapaikka,

Vaunu	Paikka
1 alakerta	45 ikkuna

Aikuinen



A3FYHHA=

Istumapaikka Ekstra-luokassa 12,00 €

Hinta yhteensä: 49,00 €

Alv	10%	19.11.2017, klo 20:31
Veroton	44,55 €	Tilausnumero: 1418070840513
Vero	4,45 €	Maksutapa: Lasku
Verollinen	49,00 €	

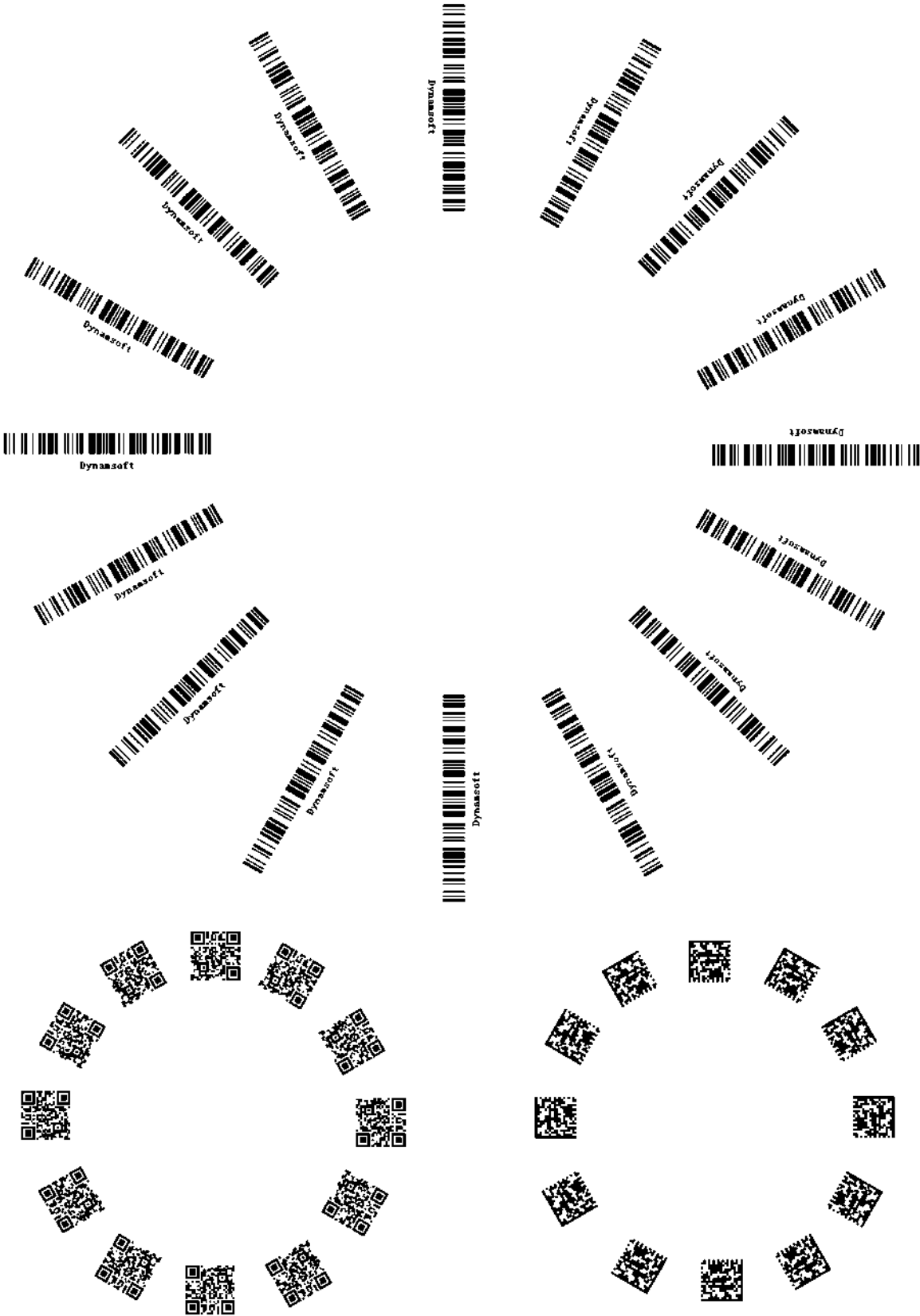
VR-YHTYMÄ OY, Y-tunnus 1003521-5, Kotipaikka Helsinki

LISÄÄ MATKA KALENTERIIN +

Multiple Symbologies Multiple Barcodes

Read multiple barcodes of different symbologies simultaneously to handle diverse data capture needs.







**JUNALIPPU/BILET I REZERVIROVANIE 0010 VR
/TICKET + RESERVATION**

19.10.2015, maanantai 22:29

Thank you for travelling with VR.

Muutokset 6 tuntia ennen lähtöä. Ryhmille omat ehdot.

Izmeneniya dopuskajutsja do 6 tšasov do otravleniya poezda.Dlja grupp - spetsialnyje uslovija.

Rebooking up to 6 hours before the departure.Separate conditions for groups.

2 Adult FIN-RUS/Vzroslyj Rossija - Finljandija/Adult FIN-RUS

2 Adult FIN-RUS(72)

Mistä/Ot/From	Päivä/Data/Date	Klo/Vremja/Time
Moskva-Okt	13.11.2015	23:10
Mihin/Do/To	Päivä/Data/Date	Klo/Vremja/Time
Helsinki	14.11.2015	12:57
Juna/Poezd/Train	Luokka/Klass/Class	
32 Tolstoi	1 lk./1st cl./1 klass	



- ARHVG DY = -

Vaunu/Vagon/Coach	Paikat/Mesta/Places	Sijainti/Polozhenie/Location
015	7 D	Lower bed
	8 D	Lower bed

BUSINESS

HINTA/TSENA/PRICE EUR***343,08**

VAT	Price excl tax	Tax	Price incl tax
0%	343,08	0,00	343,08

Order Number: **1458044348761**

Ticket data to be sent also to email address

olga.gouseva@finnorigina.com

Alk. 1.7. sis. lähijunayhteys lentoasemalle/-lta voim. 80 min kaukojunan lähtö-/ saapumisajasta.

From 1.7 valid on local trains to/from airport 80 mins from arrival/departure of long distance

Have a nice journey and welcome again to the online store!

VR Passenger Services

VR GROUP Ltd

Business Identity Code 1007149-4, Domicile Helsinki



VKP	200936381756	Kuljettaja/Perevozchik/Carrier	0010 VR
264	1458044348761	0010/0020	
	19.10.2015 22:29		



ИНН
КПП 770401001 Стр. 0002



**Раздел 1. Сумма налога,
подлежащая уплате в бюджет (возмещению из бюджета),
по данным налогоплательщика**

Показатели	Код строки	Значения показателей
Код по ОКАТО	010	4 5 2 8 6 5 9 0 0 0 0
Код бюджетной классификации	020	1 8 2 1 0 3 0 1 0 0 0 0 1 1 0 0 0 1 1 0
Сумма налога, исчисленная к уплате в бюджет в соответствии с пунктом 5 статьи 173 Налогового кодекса Российской Федерации (руб.)	030	_____
Сумма налога, исчисленная к уплате в бюджет в соответствии с пунктом 1 статьи 173 Налогового кодекса Российской Федерации (руб.) <i>(величина разницы суммы строк 230 раздела 3, 020 раздела 6 и суммы строк 240 раздела 3, 010 раздела 4, 010 раздела 5 (графы 3), 010 раздела 5 (графы 5), 030 раздела 6 больше или равна нулю)</i>	040	3 8 2 9 2 3
Сумма налога, исчисленная к возмещению из бюджета в соответствии с пунктом 1 статьи 173 Налогового кодекса Российской Федерации (руб.) <i>(величина разницы суммы строк 230 раздела 3, 020 раздела 6 и суммы строк 240 раздела 3, 010 раздела 4, 010 раздела 5 (графы 3), 010 раздела 5 (графы 5), 030 раздела 6 меньше нуля)</i>	050	_____

Достоверность и полноту сведений, указанных на данной странице, подтверждаю:

_____ (подпись) _____ (дата)



Saajan tilinumero	IBAN		NORDEA FI77 1660 3000 1168 09		BIC NDEAFIHH DABAFIHH OKOYFIHH
	DANSKE BANK FI49 8000 1271 0662 51		OP FI81 5000 0121 4213 32		
Saaja	Verohallinto		Ennakkovero Verovuosi 2017 02.12.2016		
Maksaja			Vero		
TILISIIRTO 7247/x 10.16	Allekirjoitus		Määrä, jolle viivekorko lasketaan		1 120,52
Tiliä nro	Eräpäivä		Euro		
	23.02.2017		1 120,52		




Maksu välitetään saajalle maksujenvälityksen ehtojen mukaisesti ja vain maksajan ilmoittaman tilinumeron perusteella.

Saajan tilinumero	IBAN		NORDEA FI77 1660 3000 1168 09		BIC NDEAFIHH DABAFIHH OKOYFIHH
	DANSKE BANK FI49 8000 1271 0662 51		OP FI81 5000 0121 4213 32		
Saaja	Verohallinto		Ennakkovero Verovuosi 2017 02.12.2016		
Maksaja			Vero		
TILISIIRTO 7247/x 10.16	Allekirjoitus		Määrä, jolle viivekorko lasketaan		1 120,52
Tiliä nro	Eräpäivä		Euro		
	23.04.2017		1 120,52		

1129,07
06.06.2017



Maksu välitetään saajalle maksujenvälityksen ehtojen mukaisesti ja vain maksajan ilmoittaman tilinumeron perusteella.

Saajan tilinumero	IBAN		NORDEA FI77 1660 3000 1168 09		BIC NDEAFIHH DABAFIHH OKOYFIHH
	DANSKE BANK FI49 8000 1271 0662 51		OP FI81 5000 0121 4213 32		
Saaja	Verohallinto		Ennakkovero Verovuosi 2017 02.12.2016		
Maksaja			Vero		
TILISIIRTO 7247/x 10.16	Allekirjoitus		Määrä, jolle viivekorko lasketaan		1 120,52
Tiliä nro	Eräpäivä		Euro		
	23.06.2017		1 120,52		

08.06.2017



Maksu välitetään saajalle maksujenvälityksen ehtojen mukaisesti ja vain maksajan ilmoittaman tilinumeron perusteella.

004067/ENPE_MUU_S_032 10406

Auchan Sokolniki

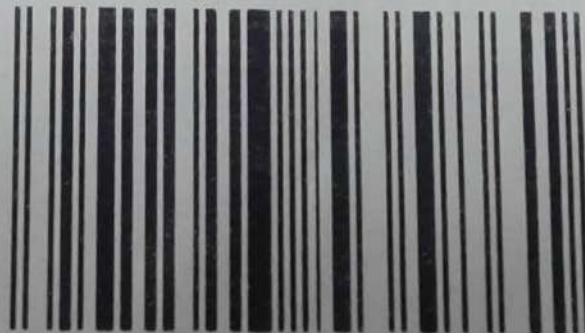
итого: 1303,56

Количество: 33

2018-11-25 19:11:13

оператор: 245

станция: EST135



9901513535861



Талон не является чеком оплаты

Anforderungsschein für Laboratoriumsuntersuchungen bei Laborgemeinschaften 10ABF

Kurativ Präventiv bei belegärztl. Behandlung Unfall, Unfallfolgen

geb. am _____ ggf. Kennziffer _____ Geschlecht W M

Name, Vorname des Versicherten _____

Kassen-Nr. _____ Versicherten-Nr. _____ Status _____

Betriebsstätten-Nr. _____ Arzt-Nr. _____ Datum _____

Diagnosen _____ Abnahmedatum _____ Abnahmezeit _____

10ABF

<input type="checkbox"/> Befund eilt	1	Serum Vollblut	Glukose
<input type="checkbox"/> EDTA		<input type="checkbox"/> alkalische Phosphatase 13	<input type="checkbox"/> Eiweiß gesamt 26
<input type="checkbox"/> großes Blutbild 2		<input type="checkbox"/> Amylase 14	<input type="checkbox"/> Gamma GT 27
<input type="checkbox"/> kleines Blutbild 3		<input type="checkbox"/> ASL 15	<input type="checkbox"/> Kreatinin Clearance 40
<input type="checkbox"/> HbA1c 4		<input type="checkbox"/> Bilirubin direkt 16	<input type="checkbox"/> Glukose 1 51
<input type="checkbox"/> Retikulozyten 5		<input type="checkbox"/> Bilirubin gesamt 17	<input type="checkbox"/> Glukose 2 52
<input type="checkbox"/> Blutsenkung 6		<input type="checkbox"/> Calcium 18	<input type="checkbox"/> Glukose 3 53
<input type="checkbox"/> Diff. Blutbild (Ausstrich) 7		<input type="checkbox"/> Cholesterin 19	<input type="checkbox"/> Glukose 4 54
<input type="checkbox"/> Citrat		<input type="checkbox"/> Cholinesterase 20	Urin
<input type="checkbox"/> Quick 8		<input type="checkbox"/> CK 21	<input type="checkbox"/> Status 55
<input checked="" type="checkbox"/> Quick unter Marcumar-Therapie 9		<input type="checkbox"/> CK-MB 22	<input type="checkbox"/> Mikroalbumin 56
<input type="checkbox"/> Thrombinzeit 10		<input type="checkbox"/> CRP 23	<input type="checkbox"/> Schwangerschaftstest
		<input type="checkbox"/> Eisen 24	<input type="checkbox"/> Glukose 58
		<input type="checkbox"/> Kalium 38	<input type="checkbox"/> Amylase 59
		<input type="checkbox"/> IgA 35	<input type="checkbox"/> Sediment 60
		<input type="checkbox"/> IgG 36	
		<input type="checkbox"/> IgM 37	
		<input type="checkbox"/> HDL-Cholesterin 34	
		<input type="checkbox"/> Phosphat, anorganisches 46	
		<input type="checkbox"/> Transferrin 47	
		<input type="checkbox"/> Triglyceride 48	
		<input type="checkbox"/> TSH basal 49	
		<input type="checkbox"/> LDH 41	
		<input type="checkbox"/> LDL-Cholesterin 42	
		<input type="checkbox"/> Lipase 43	
		<input type="checkbox"/> Natrium 44	
		<input type="checkbox"/> OP-Vorbereitung (32125) 45	
		<input type="checkbox"/> Harnsäure 31	
		<input type="checkbox"/> Harnstoff 32	
		<input type="checkbox"/> HBDH 33	

Formular wurde mittels Laserdruker in der Arztpraxis erzeugt. Der Barcode enthält keine auf dem Formular nicht lesbaren Daten.

Частное предприятие «Принтбук»
 Свидетельство о государственной регистрации издателя, изготовителя, распространителя печатных изданий
 Ул. Якубовского, д. 51, пом. 1, 220018, г. Минск.

Белорусско-германское совместное предприятие «Полиграфхауз» в форме общества с ограниченной ответственностью
 Свидетельство о государственной регистрации издателя, изготовителя, распространителя печатных изданий
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6+

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 Изготовитель: ЧП «Принтбук»
 Адрес: Ул. Якубовского, д. 51, пом. 1, 220018, г. Минск, Республика Беларусь
 Дата изготовления: 14.03.2018.
 Срок службы: неограничен.

ISBN 978-985-579-265-0

9 789855 792650

Lenovo



inside™



CPU: Intel I7-7700HQ 2.8G
RAM: 16G
HDD: 2T
SSD: 256G
SSHD: --
LAN: 100M/1000M
ODD: --
Display: 15.6"FHD IPS
Battery: 3Cell
OS: Windows 10 Home

EAN CODE



0 191376 651924

UPC CODE



1 91376 65192 4

Color: BLACK

Lenovo Y520-15IKBN

Model Name: 80WK

Notebook LN Y520-15IKBN I7 16 2T 256 10H

(S)Serial Number: PF0UFLRH



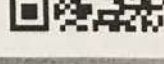







S/N: PF0UFLRH MO: PF9XB7625009



(1S)MTM: 80WK00F9US S/N: PF0UFLRH




ЗАО "ЧИП и ДИП" 
 ОГРН 1027700271807 
 ИНН/КПП 7729108750/770201001 
 Юр. адрес: 129110 г. Москва ул. Гиляровского, д.39, стр.1

Единая справочная: +7 (495) 544-00-09
 E-mail: sales@chipdip.ru

5 от 31.03.2016



33 00046 09502 0

Имя товара	Кол-во	Цена (руб.)	Сумма (руб.)
В, 105°C, ТК 10X13, электролитический алю	2	25,00	50,00
В, 105°C, 10x20, ор электролитический	8	29,00	232,00
В, 105°C, Конденсатор ый /Тайвань	2	51,00	102,00
Итого за товар (в том числе НДС 18%):			384,00
) копеек			

Подпись _____

Batch Scanning

Achieves close to 100% reading rate across 100+ barcodes for effective batch scanning





Read Challenging Barcodes with Custom Scan Parameters

Dynamsoft Barcode Reader offers over 100 configurable parameters to tailor scan settings for various scenarios.

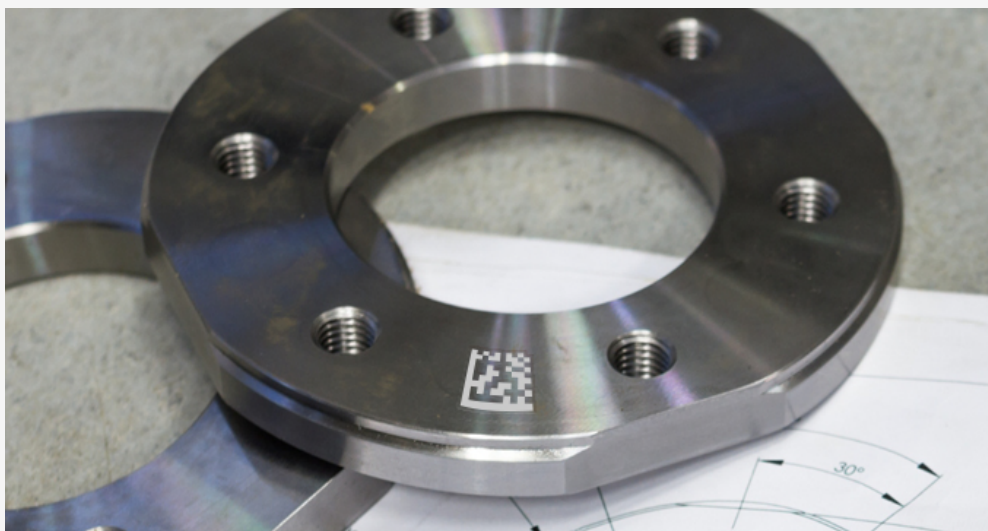


Code 39 Extended with Zero-Margin:

Accurately reads extended Code 39 barcodes with no margin space.

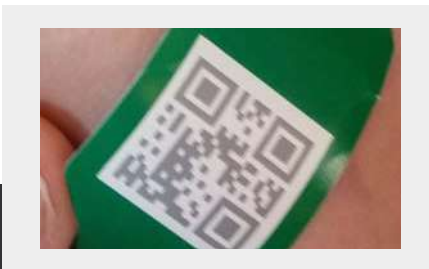
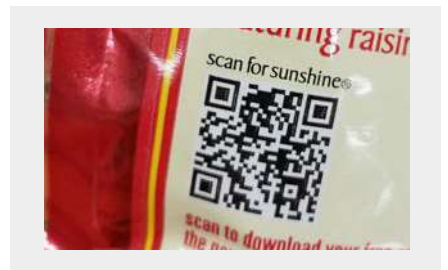
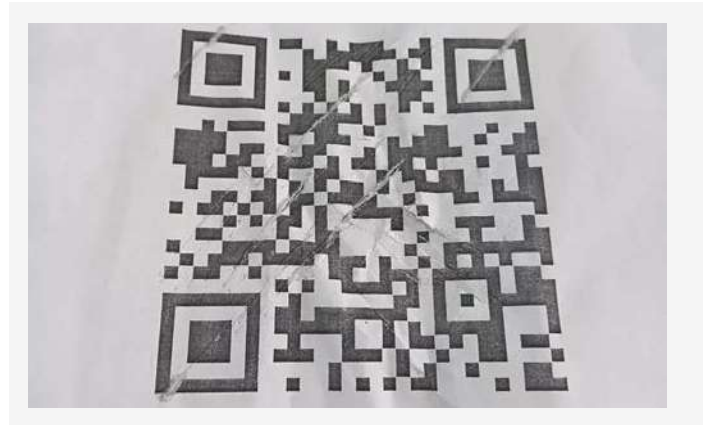
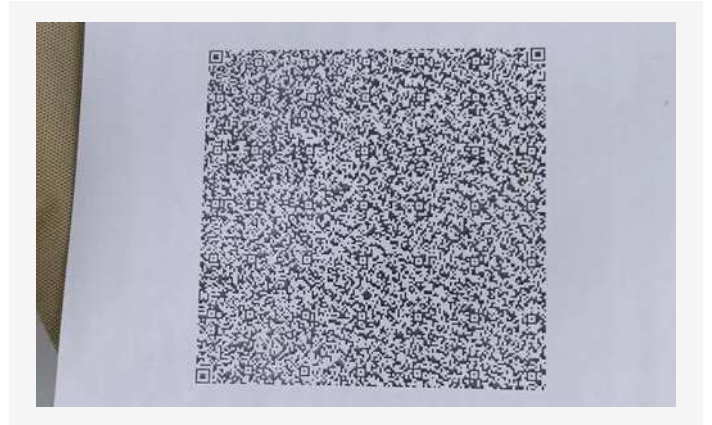
Inverted DPM Codes:

Reads Direct Part Marking (DPM) codes that are inverted when etched onto part surfaces.



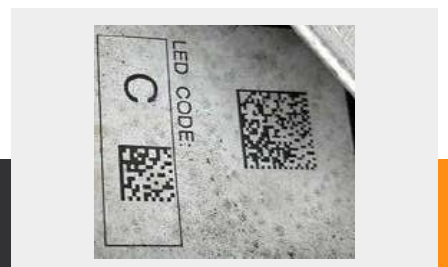
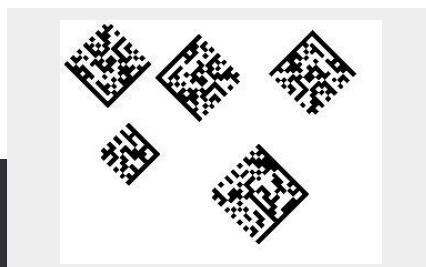
QR Codes – Curved, Damaged, High-Version

Efficiently scans micro, curved, damaged, or higher-version QR codes with more data modules.



DataMatrix- Tiny, Low Contrast, with Red Striped Background

Decodes DataMatrix barcodes that are tiny, low contrast, or against a red-striped textured background.



Barcode with Shadow:

Quickly decodes barcodes obscured by shadows.





 **Poorly Printed,
Blurry Barcodes:**

Successfully scans poorly
printed or blurry barcodes.



Off-screen:

Captures and decodes barcodes displayed on flat screens, such as mobile phones, LEDs, LCDs, or TVs.



Tiny Barcodes:

Reads tiny barcodes on small items with high precision.



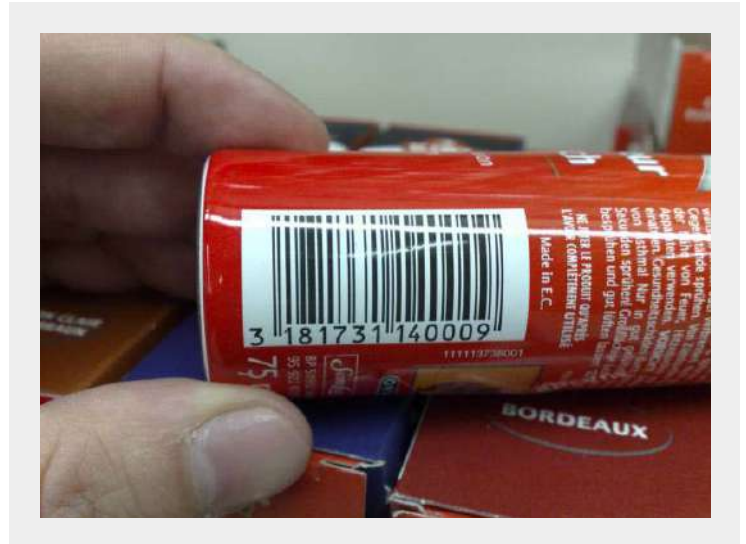
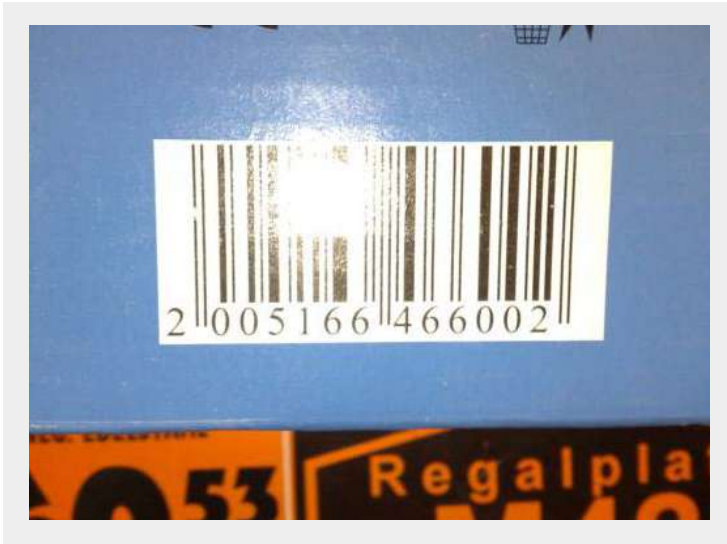
 **Incomplete:**

Effectively scans barcodes that are partially damaged or incomplete.



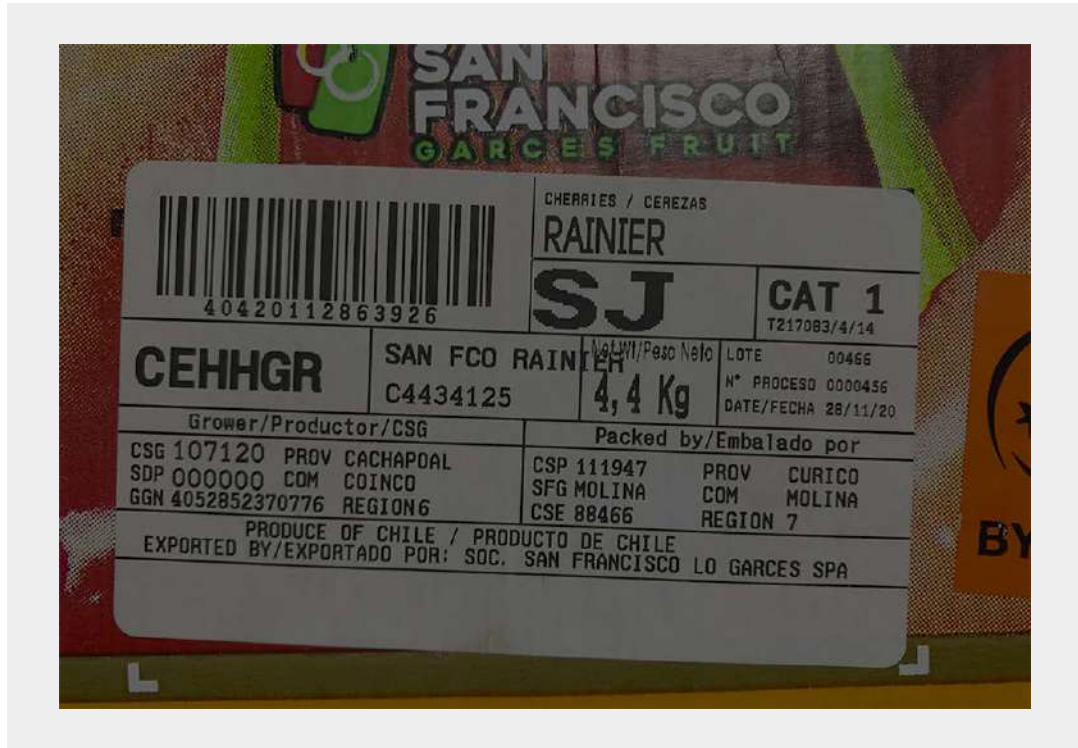
🌀 Barcodes in Strong Light:

Efficiently scans barcodes under strong lighting conditions, such as retail stores or highly lit events.



🔄 Barcodes in Low Lights:

Reads barcodes in low-light environments.



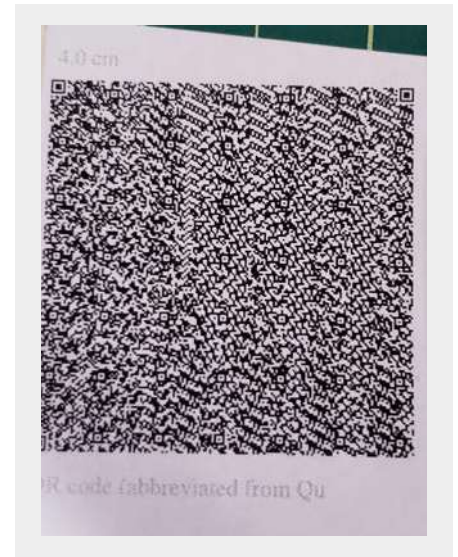
Crumpled Barcodes:

Decodes barcodes that are crumpled or wrinkled, often found on product packaging.



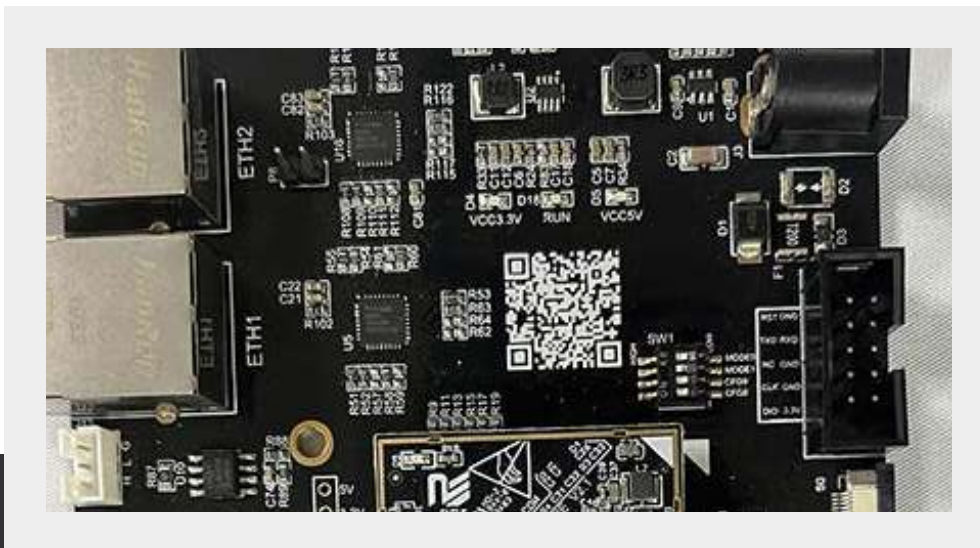
Dense Barcodes:

Scans barcodes that are dense and difficult to read by standard scanners.



Reversed Barcode:

Accurately reads barcodes that are printed in reverse or mirrored orientation.



Barcodes in Different Industries

Dynamsoft Barcode Reader SDK enhances tracking and inventory management by efficiently scanning barcodes on products and components, improving overall operations.

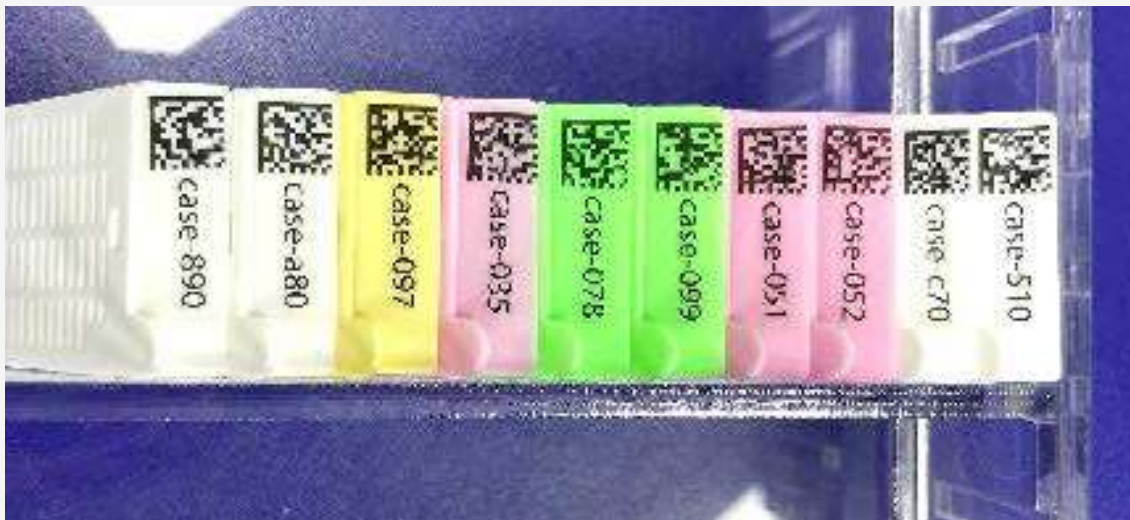
Retail:

Streamlines checkout and inventory processes through quick and accurate barcode scanning.



Healthcare:

Improves patient care and medication management by reliably scanning barcodes on medical records and prescriptions.



 **Air Travel:**

Facilitates efficient check-in and baggage handling by scanning barcodes on boarding passes and luggage tags.



Benchmark & Accuracy Comparison

Accuracy is crucial for barcode reading SDKs, defined by the correct detection and return of barcode values in an image. Choosing an engine with optimal speed, accuracy, robustness, and support is vital for a successful barcode scanner application.



1D Barcode Scanning Accuracy Benchmark and Comparison

Evaluation and comparison of the precision of different leading barcode scanners in reading 1D barcodes. Here are the results.

Datasets Used for Comparison

Dataset	Artelab Medium Barcode 1D Collection	Muenster BarcodeDB	DEAL Lab's Barcode Dataset
Symbologies	EAN13	EAN13, UPC-A	EAN13
Include images with multiple barcodes	No	No	No
Number of images	430	1054	2000
Image quality	Barcodes are relatively large compared to the image size	Barcodes are relatively large compared to the image size	Resolutions range from 400x217 to 3480x4640
Web page	http://artelab.dista.uninsubria.it/downloads/datasets/barcode/medium_barcode_1d/medium_barcode_1d.html	https://www.uni-muenster.de/PRIA/en/forschung/index.shtml	https://www.resl.kaist.ac.kr/doc/datasets

Performance Test Results: Artelab Medium Barcode 1D Collection

Dataset 1

SDK	Dynamsoft Barcode Reader	Commercial SDK A v5.19	ZXing-CPP v1.2.0	pyZbar v0.1.8
Correctly recognizedv	215 out of 215	197 out of 215	177 out of 215	193 out of 215
Misread	0	0	1	1
Reading rate	100%	91.63%	82.36%	89.77%
Precision	100%	100%	99.44%	99.48%

Dataset 2

SDK	Dynamsoft Barcode Reader	Commercial SDK A v5.19	ZXing-CPP v1.2.0	pyZbar v0.1.8
Correctly recognizedv	176 out of 215	169 out of 215	22 out of 215	30 out of 215
Misread	0	1	2	8
Reading rate	81.86%	79.07%	10.23%	13.95%
Precision	100%	100%	91.67%	78.95%

Performance Test Results: Muenster BarcodeDB

SDK	Dynamsoft Barcode Reader	Commercial SDK A v5.19	ZXing-CPP v1.2.0	pyZbar v0.1.8
Correctly recognized	1022 out of 1054	984 out of 1054	792 out of 1054	744 out of 1054
Misread	0	0	1	34
Reading rate	96.96%	93.26%	75.14%	70.59%
Precision	100%	100%	99.87%	95.63%

Performance Test Result: DEAL Lab's Barcode Dataset

SDK	Dynamsoft Barcode Reader	Commercial SDK A v5.19	ZXing-CPP v1.2.0	pyZbar v0.1.8
Correctly recognized	1839 out of 2000	1221 out of 2000	1264 out of 2000	1452 out of 2000
Misread	0	0	26	9
Reading rate	96.95%	61.05%	63.20%	72.60%
Precision	100%	100%	97.98%	99.38%



Conclusion

Results show that the Dynamsoft Barcode Reader achieves the highest reading rate across all three datasets and excels at reading more blurred barcodes.



QR Code Reading Benchmark and Comparison

We evaluated the performance of Dynamsoft Barcode Reader SDK and other prominent barcode libraries, specifically focusing on their accuracy and error rates when scanning various types of 1D barcodes. Here are the results.

Performance Test Results: Detection Results (Reading Rate in Percentage)

Category	Dynamsoft	BoofCV	ZXing	ZBar	OpenCV WeChat	Commercial SDK A	Commercial SDK B
blurred	66.15	38.46	21.54	35.38	46.15	33.85	36.92
brightness	81.18	78.82	52.94	50.59	23.53	52.94	51.76
bright_spots	43.3	27.84	20.62	19.59	24.74	8.25	29.9
close	95	100	5	12.5	67.5	22.5	25
curved	70	56.67	31.67	35	43.33	31.67	36.67
damaged	51.16	16.28	20.93	25.58	30.23	27.91	27.91
glare	84.91	32.08	20.75	35.85	58.49	43.4	20.75
high_version	97.3	40.54	5.41	27.03	18.92	78.38	35.14
lots	100	99.76	82.86	18.1	0	14.52	97.14
monitor	100	82.35	0	0	94.12	11.76	5.88
nominal	93.59	89.74	53.85	66.67	71.79	64.1	65.38
noncompliant	92.31	3.85	15.38	50	76.92	61.54	11.54
pathological	95.65	43.48	34.78	65.22	91.3	0	78.26
perspective	62.86	80	37.14	42.86	42.86	65.71	34.29
rotations	99.25	96.24	42.11	48.87	32.33	99.25	69.17
shadows	100	85	65	90	60	90	95

Speed Performance Test Results

Engine	Speed in milliseconds
Dynamsoft	195.01ms
Commercial SDK A	1400.43ms
Commercial SDK B	346.27 ms
ZXing	179.57ms
ZBar	157.31ms
BoofCV	104.95ms
OpenCV Wechat	757.71ms



Conclusion

Dynamsoft Barcode Reader demonstrates the best QR code reading rate on the test set and offers remarkable speed.

DataMatrix Reading Benchmark and Comparison

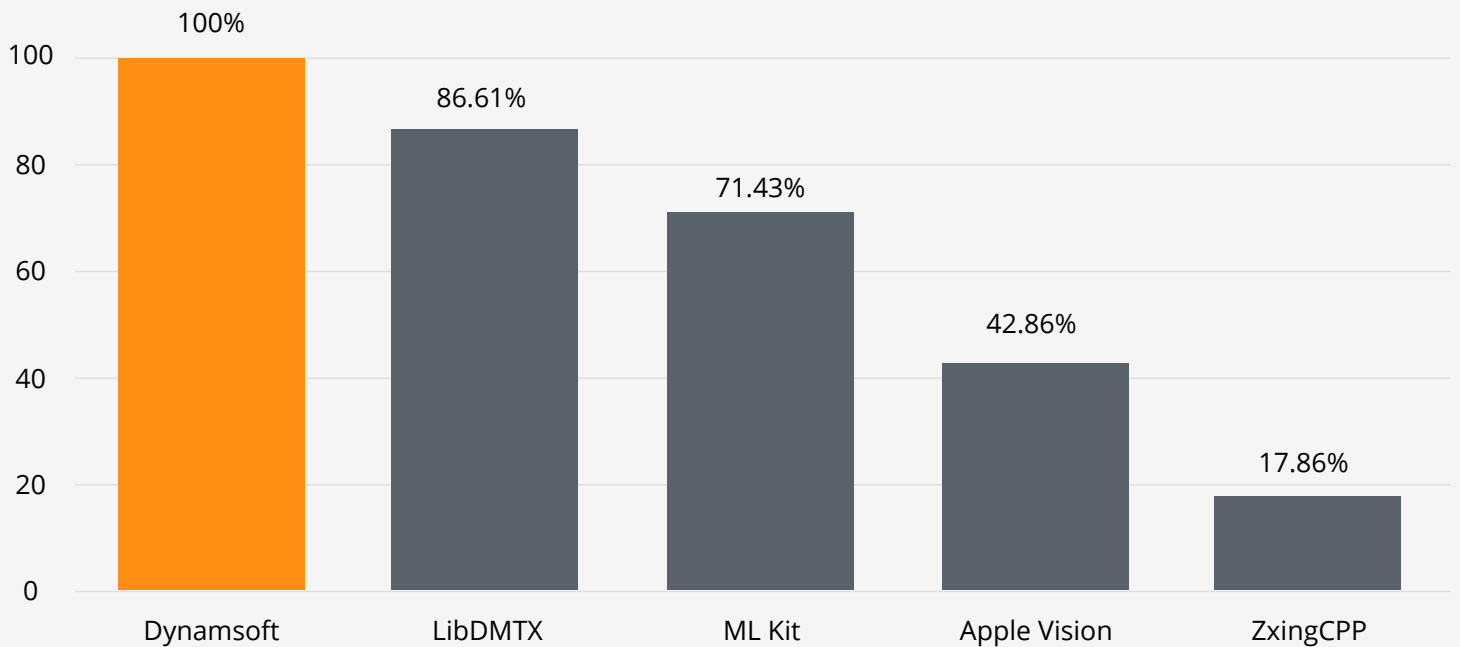
Comparison of the effectiveness of different scanners in reading DataMatrix barcodes. Here are the results.



Reading Rate Performance Test Results

Engine	Reading Rate in Percentage
Dynamsoft	100%
LibDMTX	86.61%
ML Kit	71.43%
Apple Vision	42.86%
ZxingCPP	17.86%

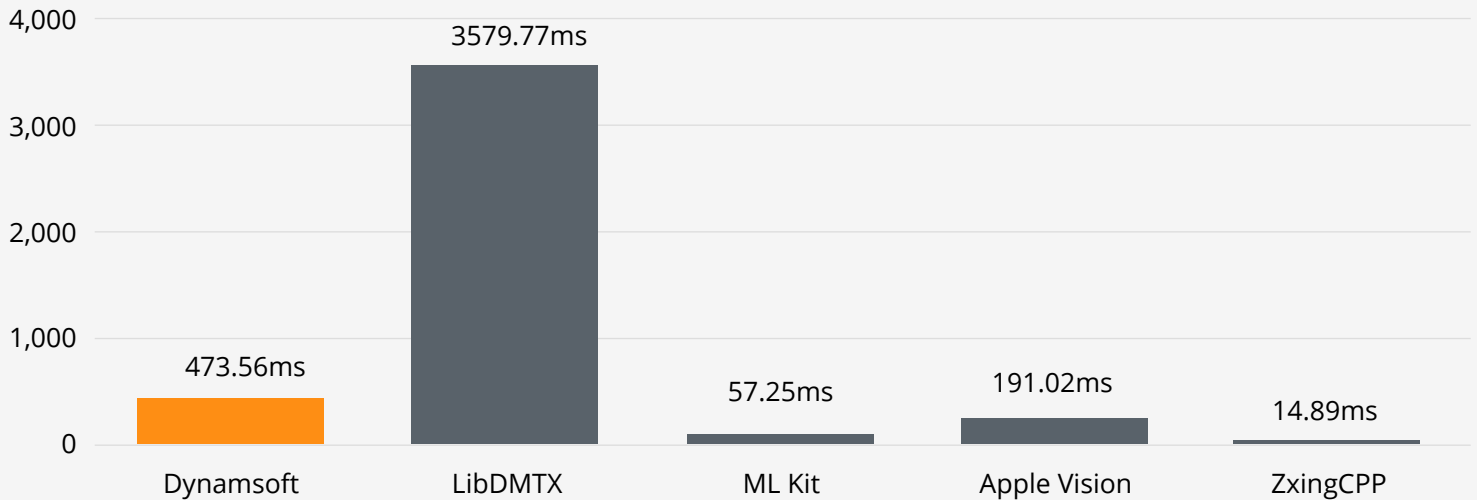
Reading Rate



Speed Performance Test Results

Engine	Speed in milliseconds
Dynamsoft	473.56ms
LibDMTX	3579.77ms
ML Kit	57.25ms
Apple Vision	191.02ms
ZxingCPP	14.89ms

Average Time



Conclusion

Dynamsoft Barcode Reader can decode all Data Matrix codes, unlike other SDKs. It also maintains a good balance between reading rate and runtime. While libdmtx has a high reading rate, it is slow in decoding, and ZxingCPP is fast but lacks accuracy.





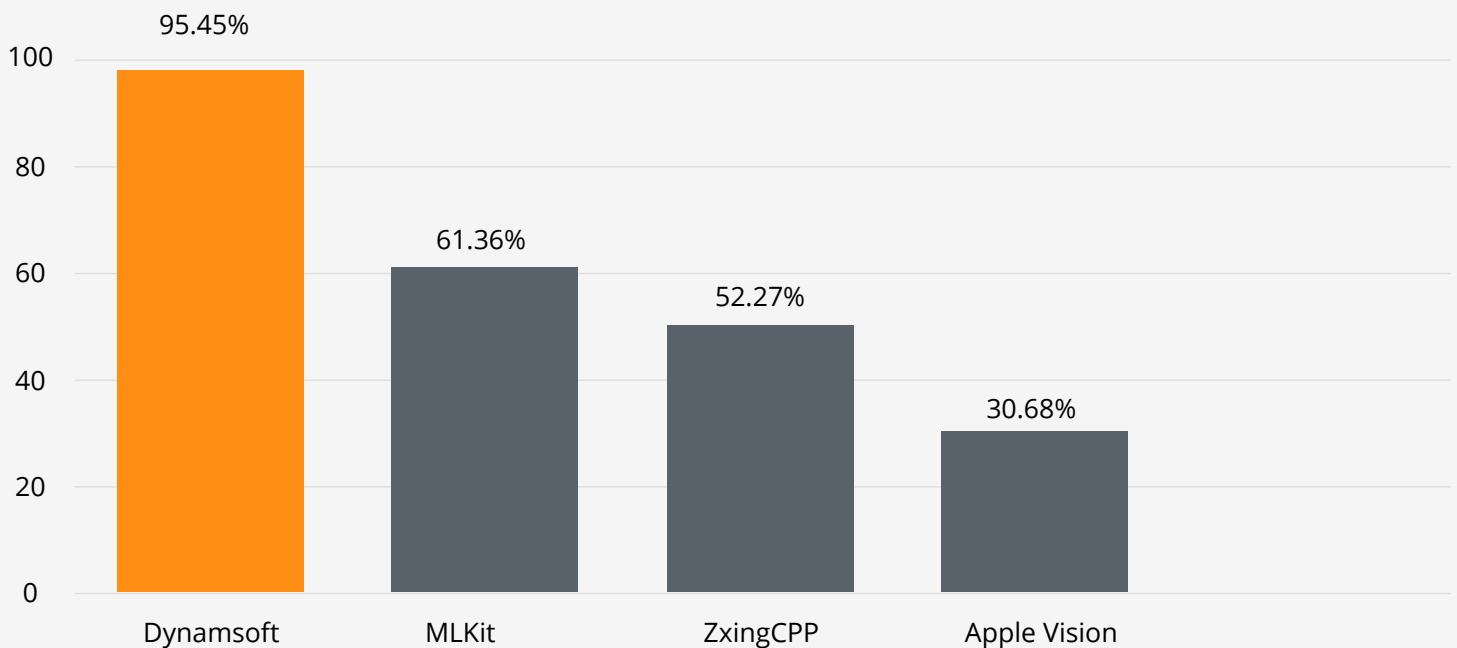
PDF417 Reading Benchmark and Comparison

Benchmark and comparison of the accuracy of PDF417 barcode scanners. Results are shown below.

Reading Rate Performance Test Results

Engine	Reading Rate in Percentage
Dynamsoft	95.45%
ML Kit	61.36%
ZxingCPP	52.27%
Apple Vision	30.68%

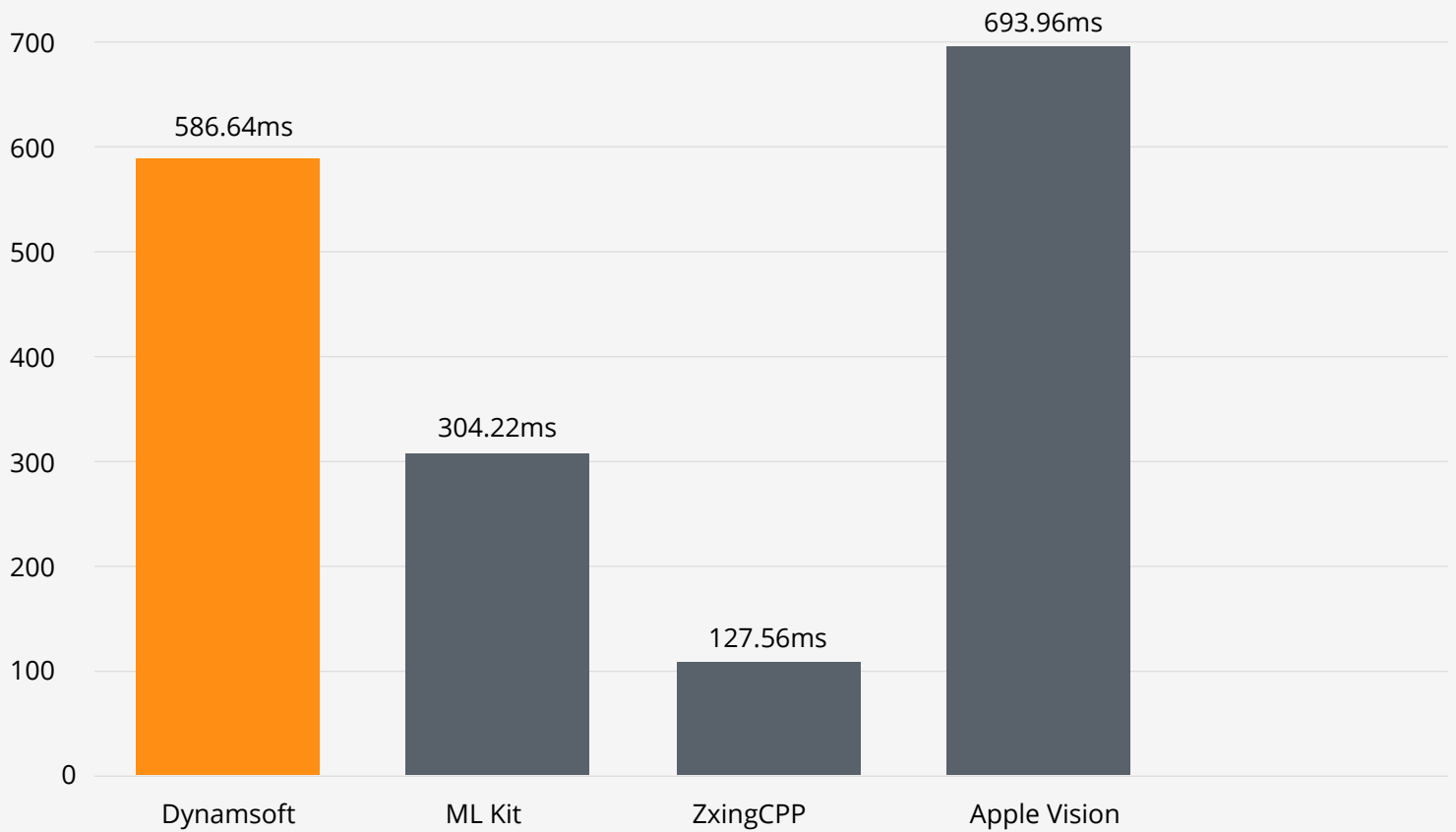
Reading Rate



Speed Performance Test Results

Engine	Speed in milliseconds
Dynamsoft	586.64 ms
ML Kit	304.22 ms
ZxingCPP	127.56 ms
Apple Vision	693.96 ms

Average Time



Conclusion

Test results highlight that the Dynamsoft Barcode Reader achieves the highest reading rate and maintains good speed.

Multiple Barcode Reading Benchmark and Comparison

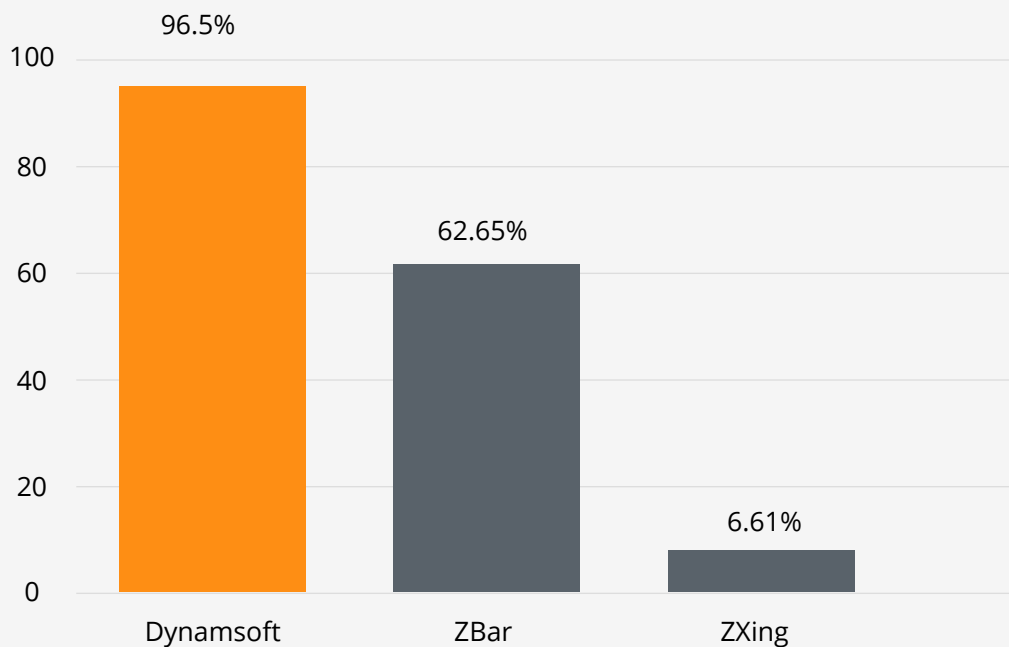
Evaluation of the performance of barcode scanners in reading multiple barcodes simultaneously. The findings are shown in the tables below.



Reading Rate Performance Test Results

Engine	Reading Rate in Percentage
Dynamsoft	96.5%
ZBar	62.65%
ZXing	6.61%

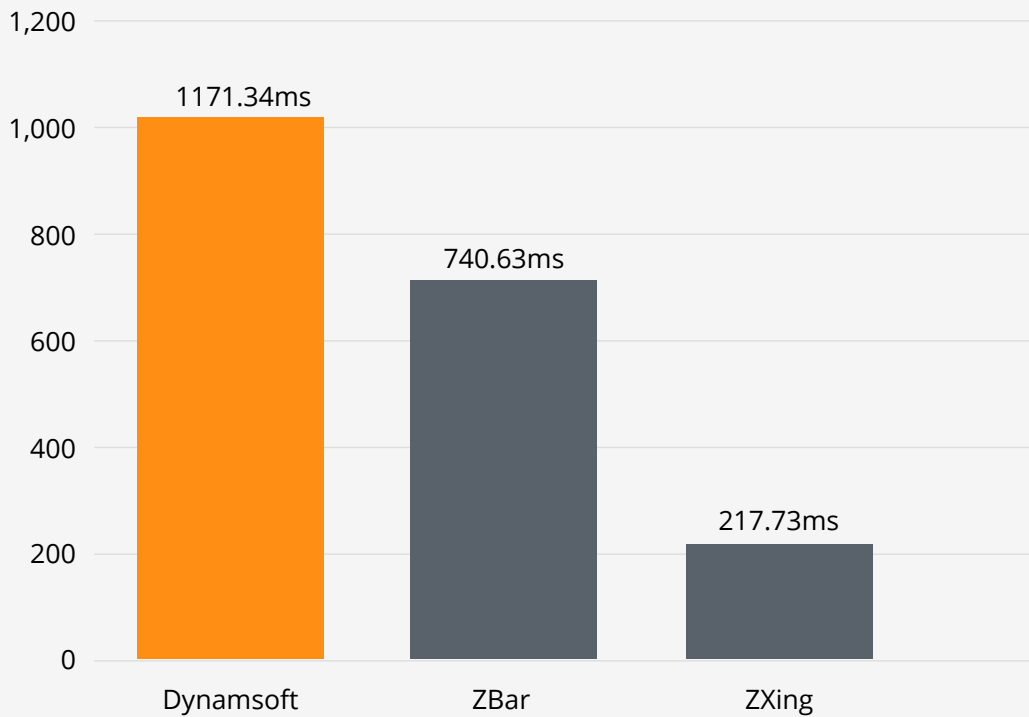
Reading Rate



Speed Performance Test Results

Engine	Speed in milliseconds
Dynamsoft	1171.34 ms
ZBar	740.63 ms
ZXing	217.73 ms

Average Time



Conclusion

Dynamsoft Barcode Reader has the highest reading rate despite requiring more time per image. It supports more barcode formats and excels at recognizing challenging barcodes, such as blurred, damaged, and low-light barcodes, contributing to its superior reading rate.



Unlock Barcode Power

Get started with Dynamsoft Barcode Reader SDK

Download Free Trial

