ACE measuring arm
and Skyline scanners:

Skyline Skyline Skyline

EYES - WIDE - OPEN

ace

IMPECCABLE
3D MEASUREMENTS

Kreon®

ACE MEASURING ARM RANGE

PRECISELY FOR YOU

Thanks to innovative technology and state-of-the-art manufacturing, Kreon® measuring arms from the ACE range offer advanced 3D measuring solutions for both scanning and probing.

Compliant with the latest ISO standards and compatible with leading software available on the market, they meet increasingly stringent demands in terms of precision and productivity.

The ACE range comprises two models: the ACE and the ACE+ measuring arm. Working with the latest encoder technology, the ACE+ arm also boasts an advanced calibration method, ensuring exceptional levels of performance.

Portable and exceptionally easy to use, measuring arms from the ACE range have their place in any working environment – workshops, measuring labs, outdoor sites – and in a wide range of high-tech industries, such as automotive and aeronautics.

ACE arm ACE+ arm

7 AXIS AND 6 AXIS

Kreon ACE measuring arms are available in 6-axis and 7-axis versions. Each offers benefits for specific applications.

6-AXIS VERSION FOR PROBING

- Perfect for applications requiring highly accurate probing
- At identical sizes, greater accuracy with 6 axis as compared to 7
- The compact ergonomics of the arm-end improves the access for the narrow measurement
- Compatible with Kreon 3D scanners (Zephyr and Solano ranges)

7-AXIS VERSION FOR SCANNING

- An additional axis and a joint enhance ergonomics when scanning
- Integration of the Skyline 3D scanners range
- Easy switchover from scanning to probing
- Both scanning and probing within the same measuring range
- Scanning precision up to 45 µm

7-AXIS VERSION WITH SKYLINE SCANNER = **ACE SKYLINE**

EXCELLENCE IN EVERY DETAIL

Efficient, lightweight and accurate, KREON ACE arms are the ultimate solution for ensuring flawless production quality, whatever your application and the size of your company.

ACE arms fitted with the Skyline 3D scanners can digitise any part in the twinkling of an eye. Accurate and at high resolution, they capture the smallest details in the most complex parts. A Skyline scanner combined with an ACE arm offers an ergonomic system for effortless scanning.

SAVE MORE TIME
with a reliable, performant and easy to use system,
at an incredible acquisition speed.

SCAN ANY PART
dark or clear, dull or shiny, big or small or all at once.
Its freedom of movement enables an access to internal or b ack side of difficult or closed volumes.

SCAN ANYWHERE
in a metrology room, a workshop, on a machine tool or even outside,
due to temperature compensation

CONTROL WITH CONFIDENCE
the freeform parts with the extreme accuracy of Skyline scanner
and the geometrical elements with the probe integrated under the scanner.

“ALL YOU NEED ...

Safe
Axes’ limits autodetection
Stable magnetic rest position
Parking position bumper
Laser class 2M (no protection needed)

Portable
Integrated battery
Wi-Fi connexion for probing
Temperature compensation
Universal Brunson attachment

Easy to use
Quick set up
Freedom of movement
Short learning curve
No warm-up time
Compatible with leading metrology software

Flexible
Removable scanner
Probe diameter autodetection
Ergonomic handle
«Push and Pull» trigger

Effortless
Lightweight mobile parts
Counterbalance
Infinite joint rotation

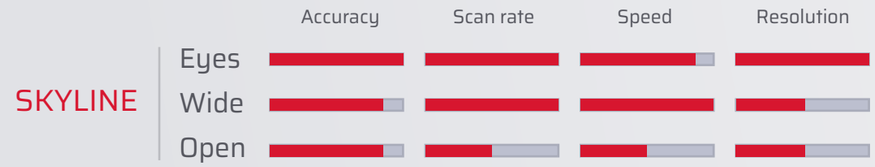
Performant
High accuracy
High resolution
High speed
Compact and lightweight scanner
Probing and scanning in the same measuring range

... AND MORE”

SKYLINE SCANNERS: SPEED AND ACCURACY

Skyline scanners use state-of-the-art technologies developed by KREON for nearly 30 years. Apart from leading technical capabilities, they are highly reliable, compact and adapt to almost any working environment.

Based on a single technology platform, Skyline 3D scanners are available in four models: Skyline **Eyes, Wide, Xtra Wide** and **Open**.



TO BETTER CAPTURE REALITY, KEEP "EYES WIDE OPEN"

ADVANCED SCANNING SPEED **300mm*** laser line

- Decreased number of scan passes on the part given to max 300 mm laser line*
- Faster movement of the 3D scanner assured by the increased frequency
- Acquisition speed of 600,000 points/sec, allowing to quickly get the dense point cloud*
- Ergonomic "push and pull" handle, providing a fabulous scanning efficiency

HIGH RESOLUTION **25µm*** AND HIGH ACCURACY **9µm***

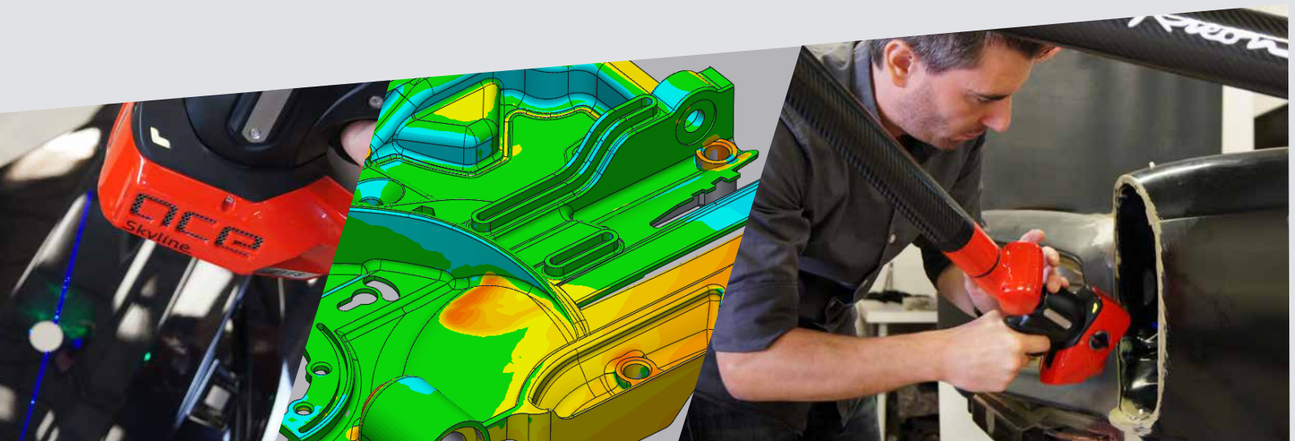
- 2,000 points per laser line for a high resolution level*
- Optimal accuracy, even on shiny reflective surfaces, due to blue laser fineness
- Temperature compensation of the 3D scanner to avoid pre-heating and to maintain a constant accuracy

EASE OF USE

- Scan longer owing to the 3D scanner lightness (weight less than 400 g)
- Reach and scan the hard-to-access zones of each part, thanks to compactness
- Visualize precisely the ideal scanning distance with the LED indicator
- Remove the scanner rapidly and without any tool to accelerate the probe mounting

Software used for probing and scanning:
Polyworks, Metrolog, Geomagic, PowerInspect, Capps, etc

maximum values depending on the Skyline scanner model



SKYLINE **EYES**

THE MOST ACCURATE

catches the eye on the most challenging parts and applications

SKYLINE **WIDE**

THE MOST AGILE

is the perfect combination between accuracy and productivity.

Available with two laser line width
Skyline Wide : 200 mm
Skyline Xtra Wide : 300 mm

SKYLINE **OPEN**

THE MOST AFFORDABLE

is open to any kind of project and application

SKYLINE SPECIFICATIONS

	EYES	WIDE	XTRA WIDE	OPEN
Max scanning speed	600.000 pts/sec	600.000 pts/sec	600.000 pts/sec	200.000 pts/sec
MPE (P[Size.Sph.All:Tr:ODS]) (2σ) *[1]	9 µm	15 µm	28 µm	15 µm
MPL (P[Form.Sph.D95%:Tr:ODS]) (2σ) *[2]	15 µm	17 µm	31 µm	20 µm
MPL (P[Form.Pla.D95%:Tr:ODS]) (2σ) *[3]	18 µm	22 µm	36 µm	25 µm
Max laser line width	100 mm	200 mm	300 mm	100 mm
Max frequency	300 Hz	300 Hz	300 Hz	200 Hz
Laser line color	Blue	Blue	Blue	Blue
Line resolution	25 µm	50 µm	60 µm	50 µm
Stand-off distance	90 mm	85 mm	100 mm	85 mm
Field of view	80 mm	110 mm	135 mm	110 mm
Led indicators	Yes	Yes	Yes	No
Temperature compensation	Yes	Yes	Yes	No

APPLICATIONS

Kreon fulfills the needs and expectations of demanding customers regarding quality control, 3D measurement, deviation viewing, providing highly effective measurement solutions since many years.

ACE SKYLINE OPTIMIZES ALL YOUR 3D MEASUREMENT PROCESSES

TESTIMONIALS

OUR CUSTOMERS CHOOSE ACE ARMS BECAUSE...

Ryan Chapman, Head Metrologist at Mann Hummel:
"We never imagined that the ACE arm with its scanner would increase our productivity, inspection quality and profitability so significantly. "

Michele Rausse, Head of Technical Department at IMarc:
"The ACE arm is a high-performance, versatile piece of equipment that meets all our measurement needs. Hard to see how we ever got by without it!"

Levi Meyer, Head Metrologist Herman Miller:
"The ACE Skyline arm, initially acquired for inspecting tubes, has come into its own in other applications too."

Marco Magnifico, Aerospace Engineer at Eurotech:
"Sometimes we use the Kreon measuring arm non-stop for a whole week. During these peak periods, we know we can count on its reliability."

Fabio Panarelli, Quality Inspector at Compositech:
"The speed and ease of use of the ACE Skyline arm have allowed us to significantly increase our productivity across the inspection phases."

SPECIFICATIONS

ACE MEASURING ARM

	Arm model	Working volume	E_{UNI}*	P_{SIZE}*	P_{FORM}*	L_{DIA}*	SPAT*
7 AXIS	Ace-7-20	2 m	0.033 mm	0.012 mm	0.020 mm	0.043 mm	0.022 mm
	Ace-7-25	2.5 m	0.036 mm	0.015 mm	0.024 mm	0.049 mm	0.027 mm
	Ace-7-30	3 m	0.059 mm	0.020 mm	0.035 mm	0.081 mm	0.042 mm
	Ace-7-35	3.5 m	0.069 mm	0.024 mm	0.041 mm	0.095 mm	0.054 mm
	Ace-7-40	4 m	0.083 mm	0.029 mm	0.048 mm	0.115 mm	0.066 mm
	Ace-7-45	4.5 m	0.112 mm	0.045 mm	0.060 mm	0.125 mm	0.078 mm
	Ace-7-50	5 m	0.140 mm	0.060 mm	0.075 mm	0.135 mm	0.095 mm
6 AXIS	Ace-6-20	2 m	0.029 mm	0.010 mm	0.016 mm	0.033 mm	0.020 mm
	Ace-6-25	2.5 m	0.032 mm	0.012 mm	0.019 mm	0.038 mm	0.025 mm
	Ace-6-30	3 m	0.044 mm	0.018 mm	0.028 mm	0.053 mm	0.033 mm
	Ace-6-35	3.5 m	0.056 mm	0.021 mm	0.037 mm	0.068 mm	0.042 mm
	Ace-6-40	4 m	0.067 mm	0.025 mm	0.043 mm	0.086 mm	0.051 mm
	Ace-6-45	4.5 m	0.080 mm	0.029 mm	0.048 mm	0.100 mm	0.069 mm
	Ace-6-50	5 m	0.120 mm	0.040 mm	0.060 mm	0.120 mm	0.090 mm

ACE+ MEASURING ARM

	Arm model	Working volume	EUNI*	PSIZE*	PFORM*	LDIA*	SPAT*
7 AXIS	Ace+7-25	2.5 m	0.029 mm	0.012 mm	0.022 mm	0.045 mm	0.025 mm
	Ace+7-30	3 m	0.052 mm	0.017 mm	0.030 mm	0.074 mm	0.039 mm
	Ace+7-35	3.5 m	0.063 mm	0.021 mm	0.037 mm	0.089 mm	0.045 mm
	Ace+7-40	4 m	0.076 mm	0.026 mm	0.042 mm	0.105 mm	0.054 mm
	Ace+7-45	4.5 m	0.103 mm	0.040 mm	0.051 mm	0.114 mm	0.067 mm
	Ace+7-50	5 m	0.130 mm	0.056 mm	0.069 mm	0.130 mm	0.092 mm
6 AXIS	Ace+6-25	2.5 m	0.026 mm	0.009mm	0.017 mm	0.037 mm	0.021 mm
	Ace+6-30	3 m	0.039 mm	0.014 mm	0.024 mm	0.047 mm	0.030 mm
	Ace+6-35	3.5 m	0.052 mm	0.017 mm	0.031 mm	0.063 mm	0.036 mm
	Ace+6-40	4 m	0.063 mm	0.022 mm	0.038 mm	0.080 mm	0.044 mm
	Ace+6-45	4.5 m	0.073 mm	0.025 mm	0.043 mm	0.093 mm	0.059 mm
	Ace+6-50	5 m	0.110 mm	0.035 mm	0.055 mm	0.110 mm	0.080 mm

All specifications are subject to change without notification

ACE MEASURING ARM WITH SKYLINE SCANNERS

	ACE				ACE+			
Arm model	Skyline Eyes	Skyline Wide	Skyline Xtra Wide	Skyline Open	Skyline Eyes	Skyline Wide	Skyline Xtra Wide	Skyline Open
Ace-7-20	0.040 mm	0.044 mm	0.056 mm	0.046 mm				
Ace-7-25	0.046 mm	0.050 mm	0.062 mm	0.052 mm	0.042 mm	0.046 mm	0.058 mm	0.049 mm
Ace-7-30	0.061 mm	0.063 mm	0.075 mm	0.065 mm	0.052 mm	0.056 mm	0.068 mm	0.059 mm
Ace-7-35	0.076 mm	0.079 mm	0.091 mm	0.081 mm	0.066 mm	0.071 mm	0.083 mm	0.073 mm
Ace-7-40	0.088 mm	0.099 mm	0.111 mm	0.102 mm	0.077 mm	0.081 mm	0.093 mm	0.084 mm
Ace-7-45	0.120 mm	0.130 mm	0.142 mm	0.132 mm	0.095 mm	0.104 mm	0.116 mm	0.110 mm
Ace-7-50	0.140 mm	0.155 mm	0.167 mm	0.160 mm	0.125 mm	0.140 mm	0.152 mm	0.146 mm

*LDIA scanning**

Operating temperature range: 10-45 °C
Power supply: universal worldwide voltage 100-250V
Humidity: 95%, non condensing
IP51

ACE ARMS ARE COMPLIANT WITH ISO 10360-12

According to ISO 10360-12 , 2016 :
EUNI (EUni:0:Tact.AArm) : Unidirectional distance error between two probed points in the arm volume
PSIZE (PSize.Sph.1x25:Tact.AArm) : Error on the measurement of a sphere diameter by probing
PFORM (PForm.Sph.1x25::Tact.AArm) : Dispersion value in measurement of a sphere radius by probing
LDIA (LDia.5x5:Art:Tact.AArm) : Errors due to arm articulations, mainly axes 5, 6 and 7 of the wrist, measured with probe
SPAT : Measurement error when the probe is stationary and the arm elbow moves from left to right

SKYLINE SCANNERS ARE COMPLIANT WITH ISO 10360-8

According to ISO 10360-8:2013:
* LDIA scanning (LDia:j:ODS) : Errors due to arm articulations, mainly axes 5, 6 and 7 of the wrist, measured with scanner
*[1] MPE (P[Size.Sph.All:Tr:ODS]): Error on the measurement of a sphere diameter by Scanning
*[2] MPL (P[Form.Sph.D95%:Tr:ODS]): dispersion value on 95% of the measured points on a sphere
*[3] MPL (P[Form.Pla.D95%:Tr:ODS]): dispersion value on 95% of the measured points on a plane

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expert distributors
around the world

Contact us for a demo
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