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SANYO ELECTRIC TRADING CO., LTD  
OSAKA, JAPAN

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service as approved by  
the JBMMA



**SANYO**  
**Lithium *power***

**CZ-1201**

**ELECTRONIC (L.C.D.)  
SCIENTIFIC  
CALCULATOR**

**INSTRUCTION MANUAL  
MODE D'EMPLOI  
BEDIENUNGSANLEITUNG**

Battery Duracell DL2430 3UT.

## ATTENTION

For your protection in the event of theft or loss of this product, please fill in the information requested below:

Model No. CZ-1201	Date of Purchase
Serial No.	Purchased Price
(Located on bottom side of unit)	Where Purchased

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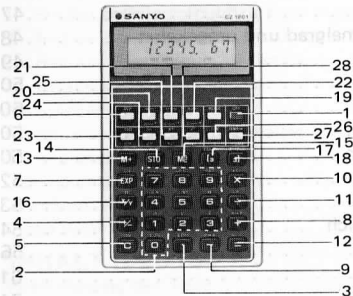
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# Name of Parts

## Nomenclature des Pièces

### Bezeichnung der Teile



- |  |   |  |   |   |
|--|---|--|---|---|
| 1. Arrêt   | * Factorielle   | 1. AUS   | tausch-Taste  | den in Dezimal-                                       |
| 2. Touches numériques  | 17. Parenthèse d'ouverture/Affichage de résultat statistique ( $\Sigma$ out)  | 2. Zifferntasten   | 15. Speicherabruf/Speicherlöschung  | grad  |
| 3. Point décimal (virgule)   | 18. Parenthèse de fermeture/Entrée de donnée statistique ( $\Sigma^+$ )/Effacement de donnée statistiques (DEL).    | 3. Kommataste  | 16. Registertausch *Taste für Fakultät  | * Umwandlung von Dezimalgrad in Grad/Minuten/Sekunden |
| 4. Changement de signe   | 19. Mode  | 4. Vorzeichenwechsel-Taste   | 17. Klammeröffnungs/Statistik-Taste   | 28. Quadratwurzel/* Quadrat                           |
| 5. Marche/Effacement de registres  | 20. Sinus/* Arc sinus   | 5. Ein-Taste/Löschtaste  | 18. Klammerschließ-/Statistikdaten ( $\Sigma^+$ )/Statistikdatenlösch-Taste (DEL) |   |
| 6. Fonction inverse  | 21. Cosinus/* Arc cosinus   | 6. Umkehrtaste   | 19. Modus-Taste   |   |
| 7. Exposant *Changement de système de notation   | 22. Tangente/* Arc tangente   | 7. Exponententaste *Notierungswechsel-Taste                                  | 20. Taste für Sinus/* Arcussinus  |   |
| 8. Addition *Conversion de coordonnées rectangulaires $\rightarrow$ coordonnées polaires     | 23. Logarithme décimal/* Antilogarithme décimal   | 8. Plus-Taste *Umrechnung von rechtwinkligen Koordinaten in Polarkoordinaten | 21. Taste für Kosinus/* Arkuskosinus  |   |
| 9. Soustraction *Conversion de coordonnées polaires $\rightarrow$ coordonnées rectangulaires | 24. Logarithme népérien/* Antilogarithme népérien   | 9. Minus-Taste *Umrechnung von Polarkoordinaten in rechtwinklige Koordinaten | 22. Taste für Tangens/* Arkustangens  |   |
| 10. Multiplication *Combinaison  | 25. Puissance/* Racines $n^e$   | 10. Multiplikations-taste *Kombinations-taste                                | 23. Dekadischer Logarithmus/* Exponent zur Basis 10                               |   |
| 11. Division *Permutation  | 26. Réciproque/* Pi   | 11. Divisionstaste *Permutations-taste                                       | 24. Natürlicher Logarithmus/* Exponent zur Basis e                                |   |
| 12. Egal   | 27. Conversion degrés sexagésimaux $\rightarrow$ degrés décimaux *Degrés décimaux $\rightarrow$ degrés sexagésimaux | 12. Gleichheits-taste  | 25. Potenzierung/* Multiple Wurzel  |   |
| 13. Mémoire plus *Mémoire moins  | 28. Racine carrée/* Carré   | 13. Plus-Speicher-taste *Minus-Speichertaste                                 | 26. Reziproke/* Pi-Taste  |   |
| 14. Enregistrement mémoire *Echange mémoire  |   | 14. Speicher-Taste *Speicheraus-   | 27. Umwandlung von Grad/Minuten/Sekun-  |   |
| 15. Rappel mémoire/Effacement mémoire  |   |  |   |   |
| 16. Permutation de facteurs  |   |  |   |   |

## Keys

- OFF** **OFF Key**
- 0 ~ 9** **Numeral Entry Keys**
- .** **Decimal Point Key**
- +/-** **Sign Change Key:** For changing the sign (+ or -) of the displayed numerals of mantissa or exponents.
- ON** **C** **ON Key/Clear Key**
- When the **C** key is depressed once after entering numerals, it clears only those numerals just entered. (Clear Indicator)
  - When the **C** key is depressed after keys other than **.**, **0 ~ 9**, **+/-** or **EXP** keys, or if it is depressed twice successively, it clears the contents of the register without affecting memory. (Clear)
  - When the calculator is set in the statistical calculation mode (when the  $\Sigma$  mark appears in the lower tier) combined use of the  $\Sigma^{OUT}$  key and the **C** key clears the statistical calculation registers.

- INV** **Inverse Key**
- For performing inverse functions (by combined use of the keys indicated with the asterisks herein.)  
Example:  $\sin^{-1} 0.5 \rightarrow .5$  **INV** **SIN**

When this key is depressed twice successively it releases inverse functions.

- CN** **EXP** **Exponential Key:** For entering the exponent.  
\***Change Notation Key:** For displaying up to 8 digits of the mantissa of a result given by the exponent system.
- R→P** **+** **Plus Key**  
\***Rectangular → Polar Conversion Key**
- P→R** **-** **Minus Key**  
\***Polar → Rectangular Conversion Key**
- nCr** **X** **Multiplication Key**  
\***Combination Key**
- nPr** **÷** **Division Key**  
\***Permutation Key**
- =** **Equal Key**
- M+** **Memory Plus Key:** For adding numerals in the memory.  
\***Memory Minus Key:** For subtracting numerals from the memory.
- x/M** **STO** **Store Memory Key:** For storing the displayed numerals in the memory.  
\***Memory Exchange Key:** For exchanging the displayed numeral with the content of the memory or vice versa.

**MC Recall Memory Key/Clear Memory Key:** A double function key. If depressed once, it recalls the memory content. If depressed twice successively, it clears the memory contents.

**X/Y Reverse Key:** For interchanging a numeral to be calculated and a calculating numeral.

**\*Factorial Key**

**ΣOUT [3] Open Parentheses/Statistical Calculation Output Indicating Key:**

- When the calculator is set in the statistical calculation mode, this key puts out statistical calculation results by combined use of any of the  $\overset{\sigma}{1} \sim \overset{n}{6}$  keys. (Refer to page 20)
- It is used for the Open Parenthesis key when the calculator is set at other than statistical calculation mode.

**Σ+/DEL [3] Close Parentheses/Statistical Calculation Data Input (Σ+)/Statistical Calculation Data Delete (DEL) Key:**

- When the calculator is set in the statistical calculation mode, it is used to input statistical calculation data, or it deletes statistical calculation data by combined use of  $\overset{INV}{\square}$  Key.

**MODE  $\square$  Mode Key:**

It is used for changing the degree units and for setting the calculator in the statistical calculation mode.

- This key is used for setting the angle mode indicated in "DEG" for degree units, "RAD" for radian units, or "GRAD" for gradian units.

Depressing  $\overset{DEG}{7}$   $\overset{GRAD}{8}$  or  $\overset{RAD}{9}$  following to this key depression, angle mode can be selected.

In calculation of trigonometric function, the displayed number is assumed as the angle selected by this key. When calculating any inverse trigonometric function, the result is calculated in units as selected by this key.

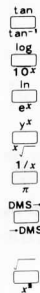
The relation to each unit is  $200^{GRAD} = 180^{DEG} = \pi^{RAD}$

- The calculator is set in the statistical calculation mode by depressing the  $\overset{MODE}{\square}$   $\overset{\Sigma ON}{0}$  keys in succession. When the calculator is in the statistical calculation mode, the  $\Sigma$  mark appears in the lower tier. The calculator is released from the statistical calculation mode by depressing the  $\overset{MODE}{\square}$   $\overset{\Sigma OFF}{\bullet}$  keys in succession.

$\overset{\sin}{\square}$   
 $\overset{\sin^{-1}}{\square}$   
 $\overset{\cos}{\square}$   
 $\overset{\cos^{-1}}{\square}$

**Sine Key/\*Arc Sine Key**

**Cosine Key/\*Arc Cosine Key**



**Tangent Key/\*Arc Tangent Key**

**Common Logarithm Key/\*Common Antilogarithm Key**

**Natural Logarithm Key/\*Natural Antilogarithm Key**

**Power Key/\*Multiple Root Key**

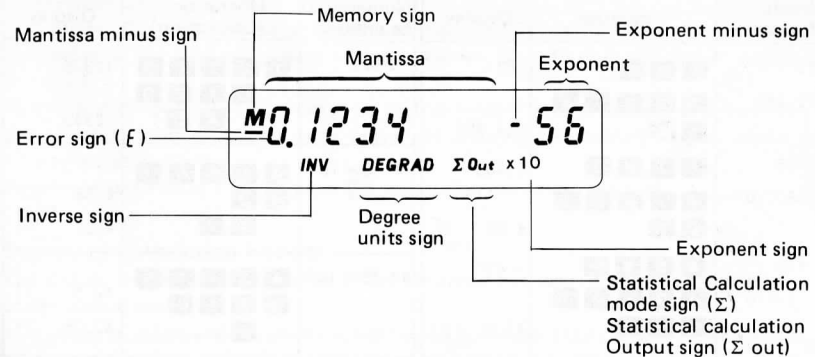
**Reciprocal Key/\*Pi Key**

**Degree-minute-second → Decimal Degrees Conversion Key**

**\*Decimal Degrees → Degree-minutes-second Conversion Key**

**Square Root Key/\*Square Key**

## Display



## How to Enter Numerals

Input Numerals	Operation	Display
123	<b>1 2 3</b>	123.
123.456	<b>1 2 3 . 4 5 6</b>	123.456
0.789	<b>. 7 8 9</b>	0.789
$4.56 \times 10^{25}$	<b>4 . 5 6 EXP 2 5</b>	$4.56 \times 10^{25}$
-456	<b>4 5 6 +/-</b>	-456
$43.2 \times 10^{-21}$	<b>4 3 . 2 EXP 2 1 +/-</b>	$43.2 \times 10^{-21}$

## How to Correct Entered Numerals

Numerals to be entered	Operation (Correction)	Display
12345	<b>1 2 3 7 5</b> ( <b>C 1 2 3 4 5</b> )	12375. 12345.
$4.56 \times 10^{42}$	<b>4 . 5 6 EXP 4 3</b> ( <b>4 2</b> )	$4.56 \times 10^{43}$ $4.56 \times 10^{42}$
$42.75 \times 10^{21}$	<b>4 2 . 7 5</b> <b>EXP 2 1 +/-</b> ( <b>+/-</b> )	$42.75 \times 10^{-21}$ $42.75 \times 10^{21}$

\* When exceeding five digits integers are entered into mantissa, entry to exponential parts is not possible.

## Auto Power-off System

### Auto Power-OFF

This Model CZ-1201 will be shut off automatically in approx. 10 ~ 15 minutes after depression of the last key. (means leaving it approx. 10 ~ 15 minutes without depressing any key.)

This time may vary under circumstances such as battery voltage become low down etc. This machine also gives you auto power-off warning by flashing display about one minute before shut off.

In order to get display back, depress **ON C** key during the auto power-off. ("0." will be appeared.)

## Display of Calculation Results

The display of results will be either of the following two ways according to the numerals of calculation results.

- Results are displayed in as many as eight significant digits  $0.01 < \text{result} < 99999999$ .

Example:

Result

Display

0.123

0.123  
0.00

2. Results are in exponential display for result  $< 0.01$  or result  $> 99999999$ .

Example:

Result	Display
0.00123 →	
123000000 →	

### Change Notation

Results displayed in the exponent can be changed to the mantissa display of 8 significant digits for more accurate readout.

Example:

11111110 11111110

### Errors

#### Overflow Errors

The calculator will overflow in the following instances, and further calculations will not be possible as the calculator will be electronically locked:

- 1) The calculation result is  $> 1 \times 10^{104}$
- 2) Content of the memory is  $> 1 \times 10^{104}$
- 3)  $A \div 0$  (division with 0 as divisor) is performed.
- 4) Data exceeds the range of any function.
- 5) In calculations of  $\tan x$ , when the value of  $x$  is approximately  $\pm 90^\circ, \pm 270^\circ, \pm 450^\circ, \dots \pm (90^\circ + 180^\circ \times n)$  the calculator will overflow.
- 6) When the parentheses keys are not used as a pair.
- 7) In the statistical calculation mode, if  $\sigma$ ,  $V$ , or  $\bar{x}$  is output at  $n = 0$  (data is not input), or  $\sigma$  is output at  $n = 1$ .
- 8) In the statistical calculation mode, the content of data  $> 1 \times 10^{104}$ .

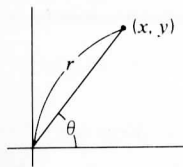
The overflow display is



Clear the overflow error by depressing the key.



## Conversion from/to Polar and Rectangular Coordinates



Polar Conversion

$x$   $\boxed{\text{INV}}$   $\boxed{+}$   $y$

$\boxed{=}$

Result

$(r)$

$\boxed{\text{X/Y}}$

$(\theta)$

Input Range:

$$\sqrt{x^2 + y^2} < 10^{104}$$

Rectangular Conversion

$r$   $\boxed{\text{INV}}$   $\boxed{-}$   $\theta$

$\boxed{=}$

$(x)$

$\boxed{\text{X/Y}}$

$(y)$

Input Range:  $\theta < 2880^\circ$

$r < 10^{104}$

### How to Use the Reverse Key $\boxed{\text{X/Y}}$

Example	Key operation (Display)
$\frac{123}{456 + 789} = 0.0987951$	456 $\boxed{+}$ 789 $\boxed{\div}$
	123
	$\boxed{\text{X/Y}}$
	$\boxed{=}$

## Conversion of Degrees-minutes-seconds and Decimal Degrees

The calculator must be set in the DEG (Degree) mode when performing conversion of degrees-minutes-seconds and decimal degrees.

### Degrees-minutes-seconds $\rightarrow$ Decimal Degrees

Example	Key operation (Result)
$123^\circ 45' 57'' \rightarrow 123.76583^\circ$	123 $\boxed{\bullet}$ 4557 $\boxed{\text{DMS} \rightarrow}$ $\boxed{\text{DEG}}$ 123.76583
$5' 3'' \rightarrow 0.0841666^\circ$	$\boxed{\bullet}$ 0503 $\boxed{\text{DMS} \rightarrow}$ $\boxed{\text{DEG}}$ 0.0841666

### Decimal Degrees $\rightarrow$ Degrees-minutes-seconds

$2.3456^\circ \rightarrow 2^\circ 20' 44''$	2 $\boxed{\bullet}$ 3456 $\boxed{\text{INV DMS} \rightarrow}$ $\boxed{\text{DMS}}$ 2.2044
---	---

When converting from decimal degree to degrees-minutes-seconds, numerals below seconds are ignored.

## How to Use the Parentheses **[3]** **3]** Keys

The CZ-1201 can perform calculations using up to 3 sets of parentheses.

$2 \times (3 + 4) = 14$	2 <b>×</b> <b>[3]</b> 3 <b>+</b> 4 <b>3]</b>	7.
	=	14.
$[[(4 - 3.6 + 5) \times 0.8 - 6] + 0.7] \times 4.2 = -4.116$	<b>[3]</b> <b>[3]</b> <b>[3]</b> 4 <b>-</b> 3.6 <b>+</b> 5 <b>3]</b> <b>×</b> .8 <b>-</b> 6 <b>3]</b> <b>+</b> .7 <b>3]</b> <b>×</b> 4.2 <b>=</b>	-4.116
$2 \times (3 + 4) \div (7 - 2) = 2.8$	2 <b>×</b> <b>[3]</b> 3 <b>+</b> 4 <b>3]</b> <b>÷</b> <b>[3]</b> 7 <b>-</b> 2 <b>3]</b> <b>=</b>	2.8

- \* The **[3]** and **3]** keys are always used as a pair. If either key is depressed alone during an operation, the calculation will not be executed.
- \* The parentheses keys can not be used in the statistical calculation mode.

## How to Perform Statistical Calculations

1. Setting the statistical calculation mode **MODE** **ΣON** **0**

2. Entering Statistical Data

Example 1: 2 <sup>Σ+/DEL</sup> **[3]** 3 <sup>Σ+/DEL</sup> **3]** 4 <sup>Σ+/DEL</sup> **3]**

Example 2: 2 **×** 3 **=** <sup>Σ+/DEL</sup> **[3]** 4 **×** 5 **=** <sup>Σ+/DEL</sup> **3]**

Example 3: 125 <sup>log Σ+/DEL</sup> **[3]** 100 <sup>log Σ+/DEL</sup> **3]**

\* Input range of statistical calculation data is

$$|x| < 10^{52}$$

3. Output of Statistical Calculation Results

Output	Operation	Equation
Standard deviation of sample (*1)	<sup>ΣOUT</sup> <b>[3]</b> <b>1</b>	$\sigma = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2}$
Variance (*2)	<sup>ΣOUT</sup> <b>[3]</b> <b>2</b>	$V = \frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2$
Mean	<sup>ΣOUT</sup> <b>[3]</b> <b>3</b>	$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$

Sum of variates	$\Sigma^{OUT} \Sigma^x$ [3] 4	$\sum_{i=1}^n x_i$
Sum of squares	$\Sigma^{OUT} \Sigma^{x^2}$ [3] 5	$\sum_{i=1}^n x_i^2$
Number of variates	$\Sigma^{OUT} n$ [3] 6	$n$

(\*1) To obtain standard deviation of population  
extract the square root of variance of population.

$$\left[ \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2} \right]$$

(\*2) To obtain the variance of sample  
multiply normal deviate of sample by 2.

$$\left[ \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})^2 \right]$$

#### 4. Delete Function

Example 1: 1  $\Sigma^{+}/DEL$  [3] 2  $\Sigma^{+}/DEL$  [3] 4  $\Sigma^{+}/DEL$  [3]  $\Sigma^{+}/DEL$  [ ]  $\Sigma^{+}/DEL$  [3] 3  $\Sigma^{+}/DEL$  [3]

Example 2: 1  $\Sigma^{+}/DEL$  [3] 2  $\Sigma^{+}/DEL$  [3] 3  $\Sigma^{+}/DEL$  [3] 1  $\Sigma^{+}/DEL$  [ ]  $\Sigma^{+}/DEL$  [3]

Example 3: 2.3  $\Sigma^{+}/DEL$  [3] 1.8  $\Sigma^{+}/DEL$  [3] 2.2  $\Sigma^{+}/DEL$  [3] 5.4  $\Sigma^{+}/DEL$  [3]  $\Sigma^{OUT} \bar{x}$  (2.925)

5.4  $\Sigma^{+}/DEL$  [ ]  $\Sigma^{+}/DEL$  [3]  $\Sigma^{OUT} \bar{x}$  (2.1)

#### Touches et commandes

OFF

Arrêt

0 ~ 9

Touches numériques

.

Point décimal (virgule)

+/-

Changement de signe: Appuyer sur cette touche pour changer le signe (+ ou -) de la mantisse ou de l'exposant affiché.

ON

C

Marche/Effacement de registres:

- Une pression unique sur cette touche  $\Sigma^{ON} C$  après affichage de valeurs numériques n'efface que lesdites entrées. (Effacement d'affichage)
- Si on actionne cette touche après une touche autre que ., 0 ~ 9, +/-, EXP, ou si on l'actionne deux fois de suite, elle efface le contenu de tous les registres, à l'exception de la mémoire. (Effacement de registre)
- Quand la calculatrice est prédisposée sur le mode statistique, (c.à.d. quand le symbole  $\Sigma$  est affiché), une pression combinée sur les deux touches  $\Sigma^{OUT}$  [3] et  $\Sigma^{ON} C$  efface les registres de calcul statistique.

INV

[ ]

Fonction inverse:

- Cette touche permet d'exécuter des calculs de fonctions inverses (en combinant les emplois des touches indiquées ci-après par un astérisque.)

Exemple:  $\sin^{-1} 0.5 \rightarrow .5$   $\Sigma^{INV}$  [ ]  $\Sigma^{sin}$   $\Sigma^{sin^{-1}}$

## How to Replace a Battery

One lithium battery (LF-1/2W) provides approximately 2300 hours of normal use of the calculator. When the display becomes dim, with low contrast of the figures, it indicates that the battery life is coming to its end. In that case, replace the battery with new one.

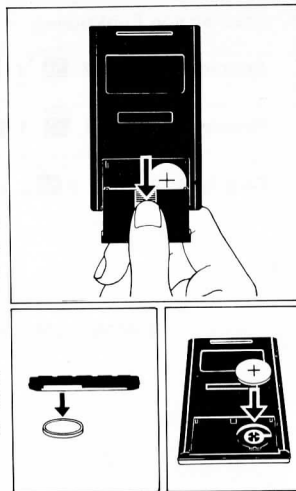
## Remplacement de la pile.

Une pile au lithium (LF-1/2W) assure environ 2300 heures de fonctionnement normale. Quand l'affichage devient peu lisible avec des chiffres insuffisamment contrastée, la pile doit être remplacée.

## Batterie

Eine Lithium-Batterie (LF-1/2W) betreibt das Gerät etwa 2300 Stunden lang bei normalem Gebrauch. Wird die Anzeige dunkler und kontrastarm, so sind die Batterien verbraucht.

Die Batterie muß dann ersetzt werden.



## Types of Functions, Key Operations And Input Range

### Fonctions, touches et intervalles de définition

### Funktionsrechnungen: Ausführung und Eingabebereich

Function Fonction Funktion	Key Operation Exécution Ausführung	Input Range Intervalle de définition Eingabebereich
$y = \sin x$	$x \begin{matrix} \sin \\ \sin^{-1} \end{matrix}$	$ x  < 2880^\circ$ $ x  < 3200^{\text{GRAD}}$ $ x  < (2880 \times \frac{\pi}{180})^{\text{RAD}}$
$y = \cos x$	$x \begin{matrix} \cos \\ \cos^{-1} \end{matrix}$	
$y = \tan x$	$x \begin{matrix} \tan \\ \tan^{-1} \end{matrix}$	
$y = \sin^{-1} x$	$x \begin{matrix} \text{INV} \\ \sin^{-1} \end{matrix}$	$ x  \leq 1$
$y = \cos^{-1} x$	$x \begin{matrix} \text{INV} \\ \cos^{-1} \end{matrix}$	$ x  \leq 1$
$y = \tan^{-1} x$	$x \begin{matrix} \text{INV} \\ \tan^{-1} \end{matrix}$	$10^{-103} \leq  x  < 10^{104}, x=0$
$y = \log x$	$x \begin{matrix} \log \\ 10^x \end{matrix}$	$0 < x < 10^{104}$
$y = \ln x$	$x \begin{matrix} \ln \\ e^x \end{matrix}$	$0 < x < 10^{104}$

$$y = 10^x$$

$$y = e^x$$

$$y = a^x$$

$$y = {}^x\sqrt{a}$$

$$y = \sqrt{x}$$

$$y = x^2$$

$$y = 1/x$$

$$y = n!$$

$$y = nPr$$

$$y = nCr$$

$$x \overset{\text{INV}}{\square} \overset{\text{log}}{\square}$$

$$x \overset{\text{INV}}{\square} \overset{\text{ln}}{\square}$$

$$a \overset{y^x}{\square} x =$$

$$a \overset{\text{INV}}{\square} \overset{y^x}{\square} x =$$

$$x \overset{\sqrt{\square}}{\square}$$

$$x \overset{\text{INV}}{\square} \overset{\square}{\square}$$

$$x \overset{1/x}{\square}$$

$$n \overset{\text{INV}}{\square} \overset{n}{\square} \text{X/Y}$$

$$n \overset{\text{INV}}{\square} \overset{nP}{\square} r =$$

$$n \overset{\text{INV}}{\square} \overset{nCr}{\square} r =$$

$$|x| < 104$$

$$|x| < 104 \cdot \ln 10$$

$$10^{-103} \leq |x| < 10^{104}, 0 \leq a < 10^{104},$$

$$x \cdot \ln a < 104 \cdot \ln 10$$

$$0 \leq |x| < 10^{104} \& 0 \leq a < 10^{104} \&$$

$$\frac{1}{x} \cdot \ln a < 104 \cdot \ln 10 \text{ or } x=a=0$$

$$0 \leq x < 10^{104}$$

$$10^{-51} \leq |x| \leq 10^{51}$$

$$10^{-103} \leq |x| < 10^{104}$$

$$0 \leq n \leq 72 \text{ Integer Ganzzahl}$$

Entier

$$0 \leq r \leq n \leq 99 \text{ Integer Ganzzahl}$$

Entier

$$0 \leq r \leq n \leq 99 \text{ Integer Ganzzahl}$$

Entier

## Calculation Examples Exemples de calculs Rechenbeispiele

Expression Exemple Ausdruck	Operation Exécution Ausführung	Display Affichage Anzeige
-----------------------------------	--------------------------------------	---------------------------------

Addition and Subtraction, Addition et Soustraction, Addition und Subtraktion

$$12+34.5+67=113.5$$

$$12 \text{ + } 34.5 \text{ + } 67 =$$

113.5  
(DEG)

$$98-76-54=-32$$

$$98 \text{ - } 76 \text{ - } 54 =$$

-32.  
(DEG)

Repeated Addition and Subtractions

Additions et soustractions répétées

Wiederholte Addition und Subtraktion

$$6+6+6+6=24$$

$$6 \text{ + } = = =$$

24  
(DEG)

$12-3-3-3=3$	$12 \text{ [M-] } 3 \text{ [=] [=] [=]}$	3. (DEG)
Multiplication and Division, Multiplication et division, Multiplikation und Division		
$1.2 \times 3.4 = 4.08$	$1.2 \text{ [Mx] } 3.4 \text{ [=]}$	4.08 (DEG)
$789 \div 3.3 = 239.0909$	$789 \text{ [M/] } 3.3 \text{ [=]}$	239.0909 (DEG)
Mixed Calculation, Calculs mixtes, Mischrechnungen		
$(6+7) \times 8 = 104$	$6 \text{ [+]} 7 \text{ [Mx] } 8 \text{ [=]}$	104. (DEG)
$(6 \times 7 \div 4) + 1.5 = 12$	$6 \text{ [Mx] } 7 \text{ [M/] } 4 \text{ [+]} 1.5 \text{ [=]}$	12. (DEG)
Power Calculation, Elévation à une puissance, Potenzierung		
$147^2 = 21609$	$147 \text{ [Mx] } [=]$	21609. (DEG)

## Exponential Calculation, Calculs en notation scientifique, Exponentielle Rechnungen

$$(1.23 \times 10^{45}) \times (6.78 \times 10^9) \\ = 8.3394 \times 10^{54}$$

$$(147 \times 10^{-25}) \times (83 \times 10^{69}) \\ = 1.2201 \times 10^{48}$$

$$(32.1 \times 10^{65}) \div (4.9 \times 10^8) \\ = 6.5510 \times 10^{57}$$

$$1.23 \text{ [EXP] } 45 \text{ [Mx] } 6.78 \text{ [EXP] } 9 \text{ [=]}$$

$$147 \text{ [EXP] } 25 \text{ [+/-] [Mx] } 83 \text{ [EXP] } 69 \text{ [=]}$$

$$32.1 \text{ [EXP] } 65 \text{ [M/] } 4.9 \text{ [EXP] } 8 \text{ [=]}$$

$$8.3394 \quad 54 \\ \text{(DEG)} \quad \times 10$$

$$1.2201 \quad 48 \\ \text{(DEG)} \quad \times 10$$

$$6.5510 \quad 57 \\ \text{(DEG)} \quad \times 10$$

## Constant Calculation, Calculs avec facteur constant, Rechnungen mit Konstanten

$$4 + \frac{5}{\text{C}} = 9$$

$$6 + \frac{5}{\text{C}} = 11$$

$$9 - \frac{3}{\text{C}} = 6$$

$$6 - \frac{3}{\text{C}} = 3$$

$$4 \text{ [+]} 5 \text{ [=]}$$

$$6 \text{ [=]}$$

$$9 \text{ [M-] } 3 \text{ [=]}$$

$$6 \text{ [=]}$$

$$9. \quad \text{(DEG)}$$

$$11. \quad \text{(DEG)}$$

$$6. \quad \text{(DEG)}$$

$$3. \quad \text{(DEG)}$$

$$\frac{9}{\text{C}} \times 8 = 72$$

$$\frac{9}{\text{C}} \times 3 = 27$$

$$8 \div \frac{2}{\text{C}} = 4$$

$$6 \div \frac{2}{\text{C}} = 3$$

$$9 \times 8 =$$

$$3 =$$

$$8 \div 2 =$$

$$6 =$$

72.  
(DEG)

27.  
(DEG)

4.  
(DEG)

3.  
(DEG)

### Memory Calculation, Calculs utilisant la mémoire, Speicherrechnungen

$$30 \times 20 = 600$$

$$50 \times 40 = 2000$$

$$20 \times 15 = 300$$

$$2900$$

$$\text{—) } 124 \times 50 = 6200$$

$$\text{— } 3300$$

$$30 \times 20 = \text{M}^- \text{M}^+$$

$$50 \times 40 = \text{M}^- \text{M}^+$$

$$20 \times 15 = \text{M}^- \text{M}^+$$

M600.  
(DEG)

M2000.  
(DEG)

M300.  
(DEG)

MC

M2900.  
(DEG)

$$124 \times 50 = \text{INV} \text{M}^- \text{M}^+$$

M6200.  
(DEG)

MC

M3300.  
(DEG)

### Composition Ratio Calculation Calcul du taux de contribution Prozentuale Verteilungsrechnung

$$A \quad 145 \quad (29\%)$$

$$B \quad 175 \quad (35\%)$$

$$C \quad 180 \quad (36\%)$$

$$(500) \quad 100\%$$

$$A = \frac{145}{500} \times 100$$

$$B = \frac{175}{500} \times 100$$

$$145 + 175 + 180 =$$

500.  
(DEG)

$$\div 100 \div 145 \times /Y = \text{M}^- \text{M}^+$$

M29.  
(DEG)

$$175 = \text{M}^- \text{M}^+$$

M35.  
(DEG)

$$C = \frac{180}{500} \times 100$$

$$A + B + C = 100$$

$$180 \equiv \overset{M-}{\text{M}+}$$

**MR**

**M 36.**  
(DEG)

**M 100.**  
(DEG)

# Basic Function Calculations Calculs des fonctions de base Funktionsrechnungen

Trigonometric Functions, Fonctions trigonométriques, Trigonometrische Funktionen

$$\sin 123^\circ = 0.8386705$$

(DEG) 123  $\frac{\sin}{\sin^{-1}}$

**0.8386705**  
DEG

$$\cos 45^\circ = 0.7071067$$

(DEG) 45  $\frac{\cos}{\cos^{-1}}$

**0.7071067**  
DEG

$$\tan 90^{\text{GRAD}} = 6.3137515$$

(GRAD) 90  $\frac{\tan}{\tan^{-1}}$

**6.3137515**  
GRAD

$$\sin \frac{\pi}{6}^{\text{RAD}} = 0.5$$

(RAD)  $\frac{\text{INV}}{\frac{1}{x}} \frac{\pi}{\pi} \div 6 \equiv \frac{\sin}{\sin^{-1}}$

**0.5**  
RAD

# Inverse Trigonometric Function Fonctions trigonométriques inverses Inverse Trigonometrische Funktionen

$$\sin^{-1} 0.5 = 30^\circ$$

(DEG) .5  $\frac{\text{INV}}{\frac{\sin}{\sin^{-1}}}$

**30.**  
DEG

$$\cos^{-1} 0.5 = 60^\circ$$

(DEG) .5  $\frac{\text{INV}}{\frac{\cos}{\cos^{-1}}}$

**60.**  
DEG

$$\tan^{-1} 0.5 = 26.565051$$

(DEG) .5  $\frac{\text{INV}}{\frac{\tan}{\tan^{-1}}}$

**26.565051**  
DEG

$$\sin^{-1} 1 = 1.5707963^{\text{RAD}}$$

(RAD) 1  $\frac{\text{INV}}{\frac{\sin}{\sin^{-1}}}$

**1.5707963**  
RAD

# Logarithmic Functions, Logarithmes, Logarithmische Funktionen

$$\log 123 = 2.0899051$$

123  $\frac{\log}{10^x}$

**2.0899051**  
(DEG)

$$\ln 123 = 4.8121843$$

123  $\frac{\ln}{e^x}$

**4.8121843**  
(DEG)



# Exponential Functions, Fonction exponentielles, Exponentielle Funktionen

$e^{10} = 22026.465$	10 $\boxed{\text{INV}}$ $\boxed{\text{In}}$ $e^x$	22026.465 (DEG)
$10^{1.2} = 15.848931$	1.2 $\boxed{\text{INV}}$ $\boxed{\log}$ $10^x$	15.848931 (DEG)

## Power Calculations, Élévation à une puissance, Potenzierung

$1.23^4 = 2.2888664$	1.23 $\boxed{\text{y}^x}$ 4 $\boxed{=}$	2.2888664 (DEG)
$5^{1.2} = 6.8986483$	5 $\boxed{\text{y}^x}$ 1.2 $\boxed{=}$	6.8986483 (DEG)

## Multiple Root, Racine n<sup>e</sup>, Multiple Wurzel

$\sqrt[3]{125} = 5$	125 $\boxed{\text{INV}}$ $\boxed{\text{y}^x}$ 3 $\boxed{=}$	5. (DEG)
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# Extraction of Square Roots, Racine carrée, Quadratwurzel

$\sqrt{3} = 1.7320508$	3 $\boxed{\text{INV}}$ $\boxed{\text{y}^x}$	1.7320508 (DEG)
$\sqrt{(1+2) \times 3} = 3$	1 $\boxed{+}$ 2 $\boxed{\times}$ 3 $\boxed{=}$ $\boxed{\text{INV}}$ $\boxed{\text{y}^x}$	3. (DEG)

## Reciprocal Calculations, Calcul de réciproque, Reziprokenrechnung

$\frac{1}{123} = 8.1300 \times 10^{-3}$	123 $\boxed{\text{INV}}$ $\boxed{\pi}$	8.1300 -03 (DEG) $\times 10$
$\frac{1}{2 \times 3 + 4} = 0.1$	2 $\boxed{\times}$ 3 $\boxed{+}$ 4 $\boxed{=}$ $\boxed{\text{INV}}$ $\boxed{\pi}$	0.1 (DEG)

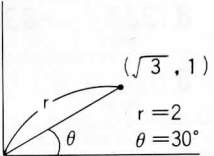
## Square Calculations, Élévation au carré, Quadrierung

$1.23^2 = 1.5129$	1.23 $\boxed{\text{INV}}$ $\boxed{\text{y}^x}$	1.5129 (DEG)
$(4.5 \times 3)^2 = 182.25$	4.5 $\boxed{\times}$ 3 $\boxed{=}$ $\boxed{\text{INV}}$ $\boxed{\text{y}^x}$	182.25 (DEG)

# Factorial Calculations, Calculs de factorielle, Fakultät

$5! = 120$	$5 \text{ [INV] } [X/Y] [n!]$	120. (DEG)
$(3 \times 2 - 1)! = 120$	$\Sigma^+ \text{OUT} [3] 3 [X] 2 [-] 1 [3] \text{ [DEL] } [INV] [n!] [X/Y]$	120. (DEG)

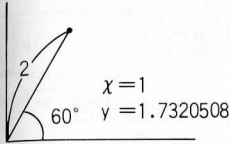
# Polar Conversion, Conversion en coordonnées polaires, Polare Umrechnung

	$(\text{DEG}) 3 \text{ [X] } [INV] [R \rightarrow P] 1 [=]$	2. (DEG)
	$[X/Y]$	30. (DEG)

# Rectangular Conversion

Conversion en coordonnées rectangulaires

Rechtwinklige Umrechnung

	$(\text{DEG}) 2 \text{ [INV] } [P \rightarrow R] 60 [=]$	1. (DEG)
	$[X/Y]$	1.7320508 (DEG)

# Permutations, Permutations, Permutationen

${}_4P_2 = 12$	$4 \text{ [INV] } [nPr] 2 [=]$	12. (DEG)
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# Combinations, Combinaisons, Kombinationen

${}_4C_2 = 6$	$4 \text{ [INV] } [nC_r] 2 [=]$	6. (DEG)
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# Probability, Calculs de probabilités, Wahrscheinlichkeit

${}_4C_3 \times \left(\frac{1}{2}\right)^4 = 0.25$	$4 \text{ [INV] } [nC_r] 3 [X] \Sigma^+ \text{OUT} [3] 2 \text{ [1/x] } [y^x] 4 \text{ [DEL] } [3] [=]$	0.25 (DEG)
--	---	---------------

$3 \sin^2 30^\circ = 0.75$ $\sin \frac{\pi}{4} \times \cos \sqrt{123}^{\text{RAD}}$ $+\tan 60^\circ = 1.7990983$	(DEG) $3 \times 30 \overset{\sin}{\boxed{\phantom{0}}} \overset{\text{INV}}{\boxed{\phantom{0}}} \overset{\sqrt{\phantom{x}}}{\boxed{\phantom{x}}} =$ (RAD) $\overset{\text{INV}}{\boxed{\phantom{0}}} \overset{1/x}{\boxed{\phantom{0}}} \overset{\pi}{\boxed{\phantom{0}}} \div 4 = \overset{\sin}{\boxed{\phantom{0}}} \overset{\text{INV}}{\boxed{\phantom{0}}} \times 123$ $\overset{\sqrt{\phantom{x}}}{\boxed{\phantom{x}}} \overset{\cos}{\boxed{\phantom{0}}} \overset{\text{INV}}{\boxed{\phantom{0}}} +$ (DEG) $60 \overset{\tan}{\boxed{\phantom{0}}} \overset{\text{INV}}{\boxed{\phantom{0}}} =$	<div>0.75 DEG</div> <div>1.7990983 DEG</div>
--	--	--

$\cos 30^\circ + e^{\ln 10}$ $= 10.866025$	(DEG) 30 $\boxed{\cos}$ $\boxed{+}$ 10 $\boxed{e^x}$ $\boxed{\text{INV}}$ $\boxed{\ln}$ $\boxed{=}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">           10.866025 DEG         </div>
$e^{\sqrt{25}} + e^{\ln 10}$ $= 158.41315$	25 $\boxed{\sqrt{\phantom{x}}}$ $\boxed{\text{INV}}$ $\boxed{\ln}$ $\boxed{=}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;">           158.41315 DEG         </div>

45. (DEG)

210.  
(DEG)

32. (DEG)

243.  
(DEG)

1024.  
(DEG)

2. DEG

2. DEG

68

Degree  $\rightarrow$  Radian Conversion  
Conversion degrés  $\rightarrow$  radians  
Umrechnung Altgrad  $\rightarrow$  Bogenmaß

$$30^\circ \longleftrightarrow 0.5235987$$

(DEG) 30  $\frac{\sin}{\sin^{-1}}$  (RAD)  $\frac{\sin}{\sin^{-1}}$

0.5235987  
RAD

$\sin^{-1}$  (DEG)  $\sin^{-1}$

30. DEG

Gradian  $\rightarrow$  Radian Conversion  
Conversion grades  $\rightarrow$  radians  
Umrechnung Neugrad  $\rightarrow$  Bogenmaß

49.999999 <sup>GRAD</sup> ↔  
0.7853981

(GRAD) 49.999999  $\frac{\sin}{\sin^{-1}}$   
(RAD)  $\frac{\text{INV } \sin}{\sin^{-1}}$

0.7853981  
RAD

$$\boxed{\sin^{-1}} (\text{GRAD}) \boxed{\text{INV}} \boxed{\sin} \boxed{\sin^{-1}}$$

49.9999999  
GRAD

Logarithmic Mean, Moyenne logarithmique, Logarithmisches Mittel

$$\bar{L} = \frac{3-7}{\ln 3 - \ln 7} = 4.72089$$

$$3 - 7 \div \sum^{\text{OUT}} [3] 3^{\text{In}}_{e^x} - 7^{\text{In}}_{e^x} \sum^{+/\text{DEL}} [3] =$$

4.72089  
(DEG)

Geometric Mean, Moyenne géométrique, Geometrisches Mittel

$$\begin{aligned}\bar{G} &= \sqrt[4]{1.23 \times 4.56 \times 7.89} \\ &= 2.5792102\end{aligned}$$

1.23  $\times$  4.56  $\times$  7.89  
INV  $\frac{y^x}{x}$  4 =

2.5792102  
(DEG)

# Applied Calculations Applications Angewandte Rechnungen

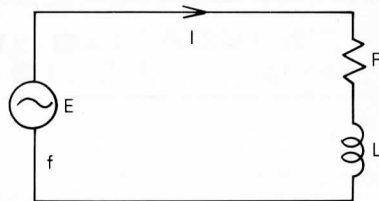
[Calculate the current I.]

[Calculer le courant I.]

[Errechnen Sie den Strom I.]

E: Voltage	100 (V)
R: Net resistance	15 ( $\Omega$ )
f: Frequency	50 (Hz)
L: Inductance	0.01 (H)
I: Electric current	? (A)

E: Voltage	100 (V)
R: Résistance	15 ( $\Omega$ )
F: Fréquence	50 (Hz)
L: Inductance	0.01 (H)
I: Intensité	? (A)



E: Spannung	100V
R: Ohmscher Widerstand	15 ohm
f: Frequenz	50Hz
L: Induktivität	0,01H
I: Strom	?A

$$I = \frac{E}{\sqrt{R^2 + (2\pi fL)^2}} = \frac{100}{\sqrt{15^2 + (2\pi \times 50 \times 0.01)^2}}$$

$\text{MC}$   $\text{MC}$   $\text{C}$  15  $\times$   $=$   $\text{M}+$  2  $\times$   $\text{INV}$   $\frac{1}{x}$   $\times$  50  $\times$  .01  $\times$   $=$   $\text{M}+$   
 $\text{MC}$   $\frac{1}{x}$   $\times$  100  $=$

$6.5250912$   
(DEG)

## [Financial Calculations]

### Repayment of Loan

Determine the monthly payment amount of a one million yen, ten-year term loan at a monthly interest of 0.74%.

PMT = Amount of repayment  
 PV = Amount of loan  
 i = Monthly interest  
 n = Number of years

## [Calculs financiers]

### Remboursement d'un emprunt

Déterminer les mensualités d'un emprunt de 1 million de Francs, sur une période de 10 ans, à un intérêt mensuel de 0.74%.

PMT = Mensualités  
 PV = Montant de l'emprunt  
 i = Intérêt mensuel  
 n = Nombre d'années

# [Finanzrechnungen]

## Rückzahlung eines Darlehens

Gesucht ist die monatliche Rückzahlung für ein Darlehen von einer Million bei 10 Jahren und einem Monatszins von 0.74%.

PMT = Monatsrate

PV = Darlehensbetrag

i = Monatszins

n = Anzahl der Jahre

$$PMT = PV \frac{i}{1 - \frac{1}{(1+i)^n}} = 1000000 \times \frac{0.0074}{1 - \frac{1}{(1+0.0074)^{10 \times 12}}} = 12602.72513$$

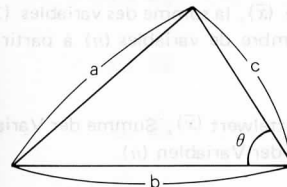
1  $\div$  .0074  $\div$  10  $\times$  12  $\div$  3  $\div$  1  $\div$  1000000  $\div$  12602.72513

12602.725  
(DEG)

[Obtain a side]

[Calculer le 3<sup>e</sup> côté d'un triangle connaissant les 2 autres côtés et l'angle entre ces 2 côtés.]

[Ermitteln Sie Seite a der Dreiecks]



$$a = \sqrt{b^2 + c^2 - 2bc \cos \theta}$$

$$b = 456, c = 123, \theta = 78^\circ (\text{DEG})$$

"DEG"  $\div$  456  $\div$  123  $\div$  78  $\div$  12602.72513

M 446.92538  
DEG

### [Statistics]

Obtain the standard deviation ( $\sigma$ ), variance ( $V$ ), mean ( $\bar{x}$ ), sum variates ( $\Sigma x$ ), sum of squared variates ( $\Sigma x^2$ ) and numbers of variates ( $n$ ) from the data shown.

### [Statistique]

Calculer l'écart type ( $\sigma$ ), la variance ( $V$ ), la moyenne ( $\bar{x}$ ), la somme des variables ( $\Sigma x$ ), la somme des carrés des variables ( $\Sigma x^2$ ) et le nombre de variables ( $n$ ) à partir des données di-dessus.

### [Statistik]

Gesucht sind Standardabweichung ( $\sigma$ ), Varianz ( $V$ ), Mittelwert ( $\bar{x}$ ), Summe der Variablen ( $\Sigma x$ ), Summe der Wertequadrate ( $\Sigma x^2$ ) und Anzahl der Variablen ( $n$ ).

$n$	$x_i$
1	78
2	90
3	91
4	80
5	73

MODE  $\Sigma$ ON 78  $\Sigma$ +DEL 90  $\Sigma$ +DEL 91  $\Sigma$ +DEL 80  $\Sigma$ +DEL 73  $\Sigma$ +DEL  
☐ 0 3] 3] 3] 3] 3]

$\Sigma$ OUT  $\sigma$   
[3] 1

$\Sigma$ OUT  $V$   
[3] 2

$\Sigma$ OUT  $\bar{x}$   
[3] 3

$\Sigma$ OUT  $\Sigma x$   
[3] 4

$\Sigma$ OUT  $\Sigma x^2$   
[3] 5

$\Sigma$ OUT  $n$   
[3] 6

MODE  $\Sigma$ OFF  
☐ •

7.8294316  
(DEG)  $\Sigma$

49.04  
(DEG)  $\Sigma$

82.4  
(DEG)  $\Sigma$

412.  
(DEG)  $\Sigma$

34194.  
(DEG)  $\Sigma$

5.  
(DEG)  $\Sigma$

0.  
(DEG)

## Specification

Calculation Capacity

For decimals

For integers  $x > |0.0001 \times 10^{-99}|$   
 $x < |99999 \times 10^{99}|$

Effective accuracy: 8 digits max.

Usable Temperature:  $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$  ( $32^{\circ}\text{F} \sim 104^{\circ}\text{F}$ )

Size: 70mm (W) x 116mm (L) x 9mm (H)  
(2-3/4" x 4-9/16" x 3/8")

Weight: 70g (2.47 oz) including a lithium battery.

Subject to change without notice.

## Fiche technique

Capacité de calcul

Valeurs décimales  $x > |0.0001 \times 10^{-99}|$   
Valeurs entières  $x < |99999 \times 10^{99}|$

Précision effective: 8 chiffres (max.)

Température d'utilisation:  $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$  ( $32^{\circ}\text{F} \sim 104^{\circ}\text{F}$ )

Dimensions: 70mm (W) x 116mm (L) x 9mm (H)  
(2-3/4" x 4-9/16" x 3/8")

Poids: 70g (2,47 oz) piles au lithium comprises

Sous réserve de modifications.

## Technische Daten

Rechenkapazität

Für Dezimalzahlen  $x > |0.0001 \times 10^{-99}|$   
Für ganze Zahlen  $x < |99999 \times 10^{99}|$

Effektive Genauigkeit: 8 (Max.)

Betriebstemperatur:  $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$  ( $32^{\circ}\text{F} \sim 104^{\circ}\text{F}$ )

Abmessungen: 70mm (W) x 116mm (L) x 9mm (H)  
(2-3/4" x 4-9/16" x 3/8")

Gewicht: 70g (2,47 oz) mit Lithium Batterien

Änderungen vorbehalten.