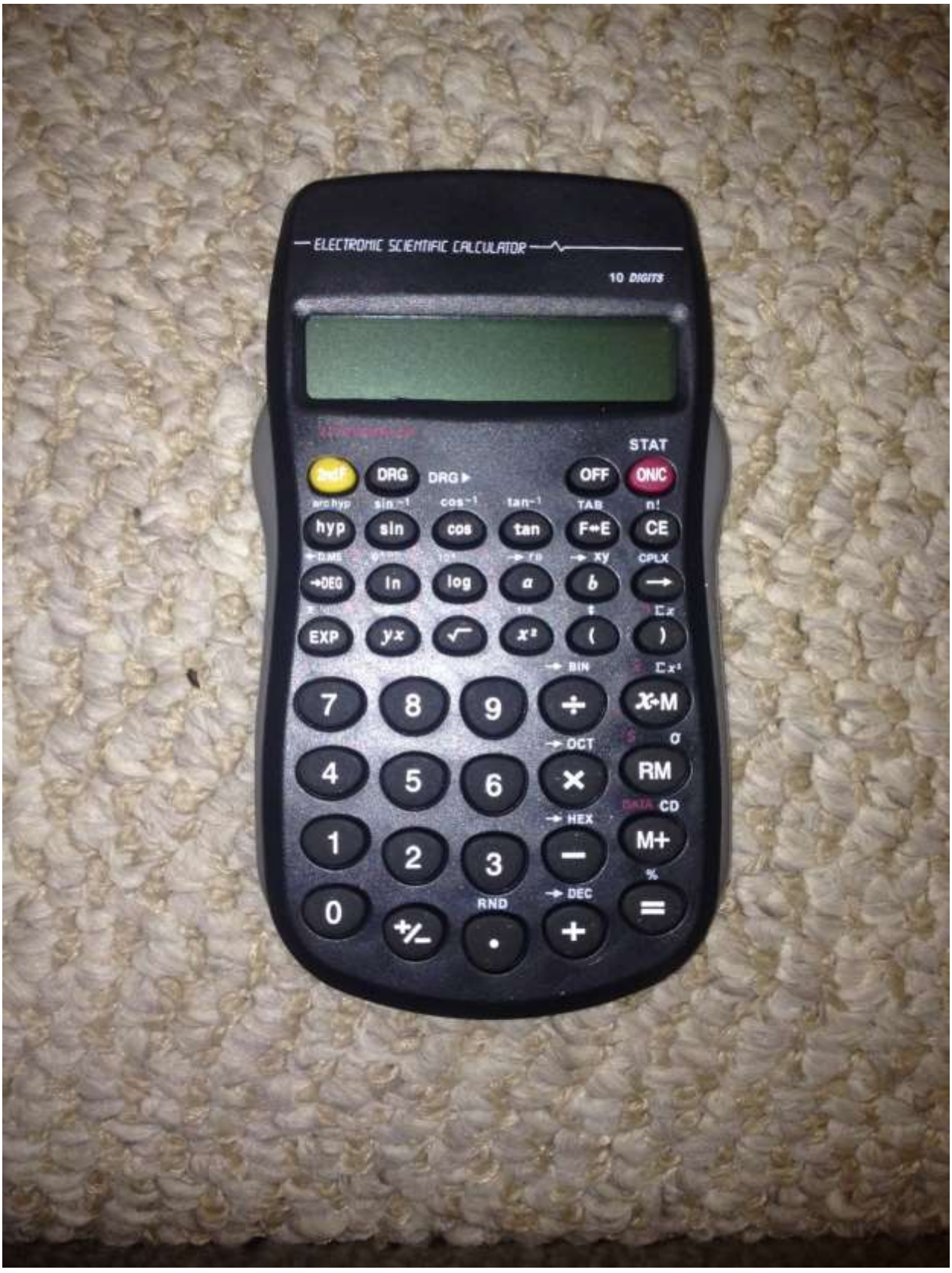

ELECTRONIC SCIENTIFIC CALCULATOR
10 DIGITS
STAT
2nd F
DRG
DRG ▶
OFF
ON/C
arc hyp
sin⁻¹
cos⁻¹
tan⁻¹
TAB
n!
hyp
sin
cos
tan
F↔E
CE
→DMS
→ xy
CPLX
→DEG
ln
log
a
b
EXP
yx
√
x²
(
)
→ BIN
7
8
9
÷
x↔M
→ OCT
σ
4
5
6
×
RM
→ HEX
DATA
CD
1
2
3
−
M+
%
0
RND
→ DEC
+/−
.
+
=

(19) [(] **Open parenthesis/exchange key**

[(] Used to open parenthesis.

[2ndF] [x⇄y] Used to exchange the number being displayed with the number stored in the working register. (x⇄y)

(20) [)] **Close parenthesis/statistical calculation key**

[)] Used to close parenthesis when the statistical mode is set.

[n] Displays the number of samples entered. (n)

[2ndF] [Σx] Used to obtain the sum of the data (Σx).

(21) [0] – [9] **Number keys**

Used to enter numbers.

(22) [÷] **Division / binary number mode key**

[÷] Depressed for division.

[2ndF] [▸BIN] Used to set the binary system mode.
Converts the number displayed into a number in base 2.

(23) [×] **Multiplication / octal number mode key**

[×] Depressed for multiplication.

[2ndF] [▸OCT] Used to set the octal system mode.
Converts the number displayed into a number in base 8.

(24) [−] **Minus / hexadecimal number mode key**

[−] Depressed for subtraction.

[2ndF] [▸HEX] Used to set the hexadecimal system mode.
Converts the number displayed into a number in base 16.

(25) [+] **Plus / decimal number key**

[+] Depressed for addition.

[2ndF] [▸DEC] Used to set the decimal system mode (normal mode).
Converts the number displayed into a number in base 10.

(26) [X→M] **Memory – in / statistical calculation key**

[X→M] Clears the number in the memory and then stores the number being displayed in the memory.
To clear the memory depress the [ON/C] key followed by the [X→M] key.
When the statistical mode is set

[x̄] Used to obtain the mean value of the data. (x̄)

[2ndF] [Σx²] Used to obtain the sum of squares of data. (Σx²)

(27) [RM] **Recall memory / statistical calculation key**

[RM] Displays the contents of the memory. The contents of the memory remain unchanged after this key operation.
When the statistical mode is set

[s] Used to obtain the standard deviation of the sample of data.

[2ndF] [σ] Used to obtain the standard deviation of the population of data.

(28) [M+] **Memory plus / DATA CD key**

[M+] Used to add the number being displayed or a calculated result to the contents of the memory.

When subtracting a number from the memory, depress the [−] and the [M+] keys in this order.
When the statistical mode is set

[DATA] Used to enter the data (numbers)

[2ndF] [CD] Used to correct the misentry. (delete function)

(29) [+/−] **Change sign key**

Changes the sign of the number displayed from a positive to a negative or vice versa.
Example: 5 [+/−] -5

(30) [·] **Decimal point/random number key**

[·] Example: 12.3 – [1] [2] [·] [3]
0.7 – [·] [7]

[2ndF] [RND] These keys are used to generate uniform random numbers from 0.000 to 0.999

Note: Random number generation is not possible when binary octal hexadecimal system mode is set.

(31) [=] **Equals/percent key**

[=] Completes four arithmetic calculations (+, −, x, ÷), $\sqrt[x]{y}$, y^x and complex number calculations

[2ndF] [%] Used for the percentage calculation and add-on discount calculator

DISPLAY

(1) **Display format**

(Floating decimal system, normal display)

(Scientific notation system)

(2) **Symbols**

−	**Minus symbol** Indicates that the number in the display following the "-" is a negative.
M	**Memory symbol** Appears when a number is stored in the memory.
E	**Error symbol** Appears when an overflow or an error is detected.
2ndF	**2nd function designation symbol** Appears when the 2nd function is designated.
HYP	**Hyperbolic function designation symbol** Appears when hyperbolic function is designated.
DEG	**Degree mode symbol** Appears when the degree mode is designated or shows that the angular mode of the converted result is in degree.
RAD	**Radian mode symbol** Appears when the radian mode is designated or shows that the angular mode of the converted result is in radian.
Grad	**Grad mode symbol** Appears when the grad mode is designated or shows that the angular mode of the converted result is in grad.
( )	**Parenthesis symbol** Appears when a calculation with parenthesis is performed by depressing the (key.
BIN	Appears when the binary system mode is set or shows the displayed number is a binary number.
OCT	Appears when the octal system mode is set or shows the displayed number is an octal number.
HEX	Appears when the hexadecimal system mode is set or shows the displayed number is a hexadecimal number.
CPLX	Appears when the complex number mode is set.
STAT	Appears when the statistical calculation mode is set.

(3) **Display System**

This machine displays a calculation result (x), if it is within the following range, in the floating decimal point system:

$0.0000000001 \le |x| < 1 \times 10^{10}$

And otherwise the machine displays X in the scientific notation system.
However, a calculation result within the above range is also capable of being displayed in the scientific notation system by pressing the [F↔E] key.

Example: [2ndF] [TAB] [9]

[·] [5] [+] [9] [=] → 0.055555556
(The 10th decimal place is rounded)

[F↔E] → 5.5555555-02
(The 10th decimal place of the mantissa is rounded)

[F↔E] → 0.055555556

[2ndF] [TAB] [·] → 0.055555555
This is determined by the calculator in the form of $5.55555556 \times 10^{-2}$
Rounding the 11th digit of the mantissa results in $5.55555556 \times 10^{-2}$
When changed to the flotation decimal display, the rounded parts may not be displayed as in this example.

BATTERY

Battery: LR1130 x 1 or AG10 x 1

Scientific Calculator

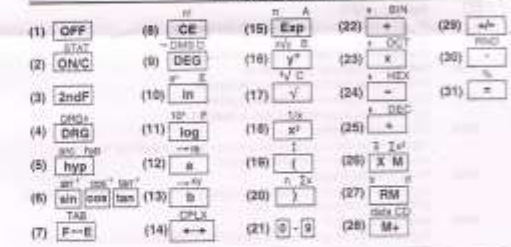
Dear Customer,

- Thank you very much for purchasing our electronic calculator.
- To fully utilize its features no special training is required, but we suggest you study this operation manual to become familiar with its many abilities.
- To help ensure its longevity do not touch the inside of the calculator, and avoid hard knocks and unduly strong key pressing. Extreme cold (BELOW 32° F or 0°C), heat (above 104° F or 40° C) and humidity may also affect the functions of the calculator. Never use volatile fluid such as lacquer thinner, benzene, etc., when cleaning the unit. FOR servicing, contact your retailer or nearby dealer.

Before starting calculation, be sure to press the [ON/C] key and to confirm that "0" is shown in the display.

Special care should be taken not to damage the unit by bending or dropping. For example, do not carry it in your hip pocket.

THE KEYBOARD



OPERATING CONTROLS

(1) [OFF] **Power off key**

When this key is depressed, the calculator is turned off.

Automatic Power – Off Function **(A.P.O.)**

The calculator is automatically turned off approximately 8 minutes after the last key operation to save the batteries.

(2) [ON/C] **Power on and clear/statistical calculation mode key**

[ON/C] Push this key to turn the calculator on. It is ready for operation. When pushed during operation it clears the calculator except for the memory.

[2ndF] [STAT] Statistical program will be activated.

When the calculator is set to the statistical calculation mode through these keys the symbol "STAT" appears and at the same time the numerical values and calculation commands, except for memory contents are cleared.

Meanwhile, in the statistical calculation mode the [ ], [X-M], [RM] and [M+] keys work as the [n], [x], [s] and [DATA] keys, respectively.

And pushing these keys immediately after the [2ndF] key they work as the [Σx], [Σx²], [n] and [CD] keys.

(3) [2ndF] **2nd function designation key**

(4) [DRG] **Degree / Radian / Grad selector / angular unit conversion key**

[DRG] Used for calculation of trigonometric, inverse trigonometric and coordinate conversion. The [DRG] key changes the angular mode.

DEG → RAD → GRAD → (back to DEG)

(Press [DRG])

Ex. DEG GRAD: Depress the [DRG] key twice.

"DEG" mode – Entries and answers are in decimal degrees.

"RAD" mode – Entries and answers are in radians.

"GRAD" mode – Entries and answers are in grads.

(100^g = 90° = π/2 rad)

[2ndF] [DRG▸] It has the function of the [DRG] key as well as converting the displayed number into a number of specified angular mode.

(5) [hyp] **Hyperbolic/arc hyperbolic key**

(6) [sin] [cos] [tan] **Trigonometric / inverse trigonometric function key**

(7) [F↔E] **Display format exchange/Tabulation key**

[F↔E] When a calculation result is displayed in the floating decimal point system, pushing the key displays the result in the scientific notation system.
Pushing the key once more displays the result in the floating decimal point system again.

[2ndF] [TAB] To specify the number of decimal digits in the calculation result.

(8) [CE] **Clear entry / Factorial key**

[CE] Used to clear an incorrectly entered number.

123 [+] 455 [CE] 456 [=] → 579

[2ndF] [n!] Calculates the factorial of the displayed number.

Factorial of n(n!) = n • (n - 1) • (n - 2) ••••••• 2 • 1

(9) [DEG] **Degree/minute/second ↔ Decimal degrees conversion/hexadecimal number key**

[DEG] [2ndF] [DMS] To convert degree / minute / second to decimal degree and vice versa.

[D] Hexadecimal number "D" key.
(effective only in hexadecimal number mode / HEX mode).

(10) [ln] **Natural logarithm/antilogarithm and hexadecimal number key**

[ln] Used to obtain the logarithm base e (e = 2.718281828).

[2ndF] [e^x] Calculates the antilogarithm base of the displayed number.

[E] HEX mode
Hexadecimal number "E" key.

(11) [log] **Common logarithm/antilogarithm and hexadecimal number key**

[log] Used to obtain the logarithm with the base of 10.

[2ndF] [10^x] Calculates the antilogarithm with the base of 10.

[F] HEX mode
Hexadecimal number "F" key.

(12) [a] **Real number enter/coordinate conversion key**

[a] This is used when real parts of complex numbers are to be inputted and when calling the real parts of calculation results. This is used during coordinate conversions when the X coordinate of the rectangular coordinates (X, Y) is input or when the r of the polar coordinates (r, θ) is input. It is also used for calling calculated values of X or r.

[2ndF] [→re] Convert rectangular coordinate into polar coordinate.

(13) [b] **Imaginary number enter/coordinate conversion key**

[b] This is used when imaginary parts of complex numbers are to be input and when calling the imaginary parts of the calculation results.
This is used during coordinate conversions when the Y coordinate of the Rectangular coordinates (X, Y) is input or when the θ of the polar coordinates (r, θ) is input. It is also used for calling the calculated values of Y or θ.

[2ndF] [→xy] Converts polar coordinate into rectangular coordinate

(14) [←→] **Right shift/complex number mode key**

[←→]

Example	Key in			Display
(1) 123456		[←→]	[←→]	→ 123
				45 → 12345
(5) 5 [EXP] 24		[←→]	[←→]	→ 5.00
				35 → 5.35

[2ndF] [CPLX] Used to set the complex number mode.

(15) [Exp] **Enter exponent / Pi and hexadecimal number key**

[Exp] To enter number in scientific notation.

[2ndF] [π] The constant π (π = 3.141592654) is entered.

[A] HEX mode
Hexadecimal number "A" key.

(16) [y^x] **y^x/ˣ√y and hexadecimal number key**

[y^x] Raises a number to a power.

[2ndF] [x√y] Calculates the X th root of Y

[B] HEX mode
Hexadecimal number "B" key.

(17) [√] **Square root/cube root and hexadecimal number key**

[√] Calculates the square root of the number displayed.

[2ndF] [³√] Calculates the cube root of the number displayed.

[C] HEX mode
Hexadecimal number "C" key.

(18) [x²] **Square/reciprocal key**

[x²] Calculates a square of the number displayed.

[2ndF] [1/x] Calculates the reciprocal of the number displayed.