

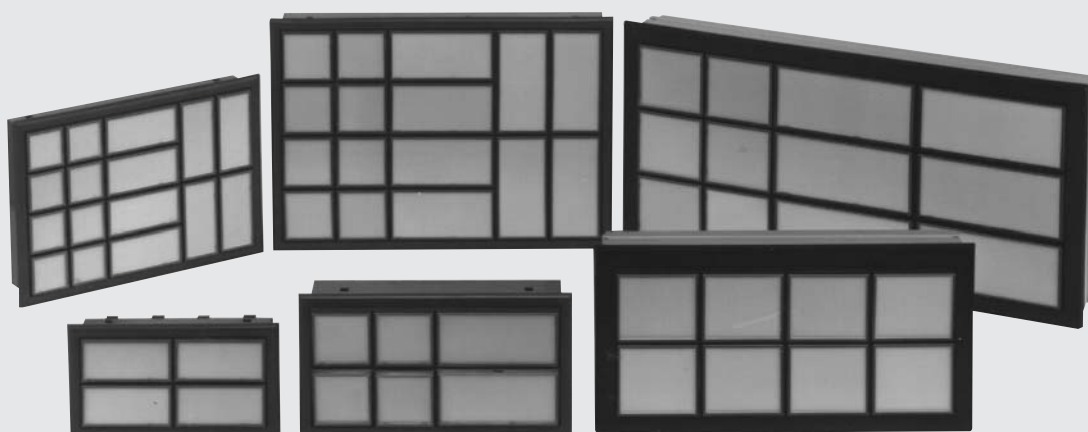
Incandescent Annunciator Lights

KFD/KFT/KFR Series

KFD-27F-27H-27V

KFD-37F-37H-37V

KFD-50F-50H



■ Features

- Available in a variety of lighting panel sizes.
- 12 indicators (8 flat and 4 diagonal models) ranging in size from 24 × 24mm (Model 27F) to 43 × 102mm (Model 50H).
- Simultaneous bicolor lighting possible by installing a separator to models 27 and 37 (H and V models).
- Full voltage, built-in transformer, and built-in resistor types are available for the lighting method.
- Circuit modification is simple because transformers and resistors can be easily removed.
- Lamps, legend plates and other parts can be easily replaced from the front surface.
- Short bar makes wiring much easier.



WARNING

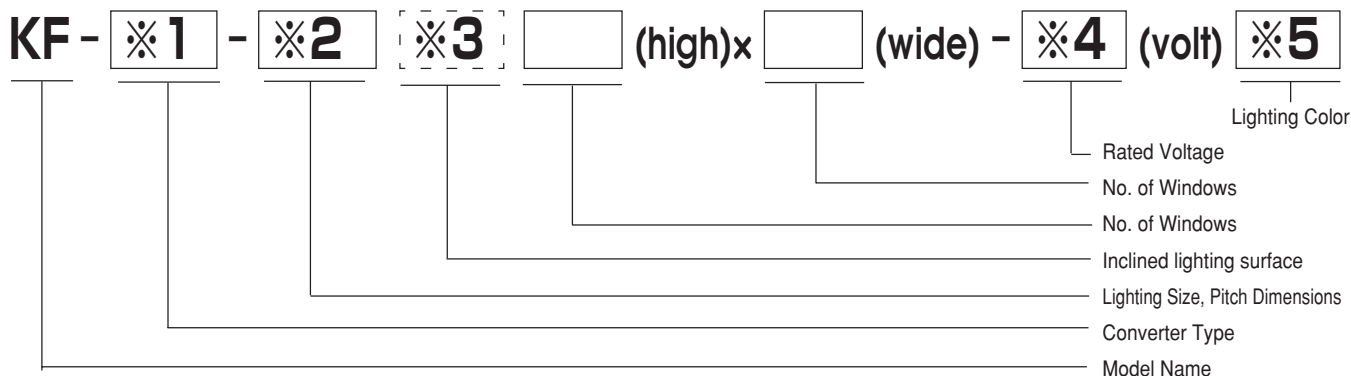
- Because resistors become very hot, there is the possibility that wires or other flammable objects may catch on fire. Therefore, wires and flammable objects must be placed at least 50 mm away from the resistor.
- KFR models may be very hot when lit, and immediately after turning off. To avoid being burned, do not touch KFR-27, KRF-37 under these circumstances.



NOTICE

- When lamps are arranged in a very close order, the heat produced may exceed the heat resistance levels for some parts.
- Unless otherwise mentioned, all dimensions are indicated in “mm” in this book.

Model Designation



Note: The bezel color is black.

※1

Code	Converter Type
D	Full voltage
T	Transformer
R	Resistor

※2

(unit: mm)

※3

Code	Lighting Size	Inclined lighting surface
27F	24 × 24	—
27H	24 × 54	—
27V	54 × 24	—
37F	34 × 34	N
37H	34 × 74	N
37V	74 × 34	—
50F	43.7 × 48.9	N
50H	43 × 102	N

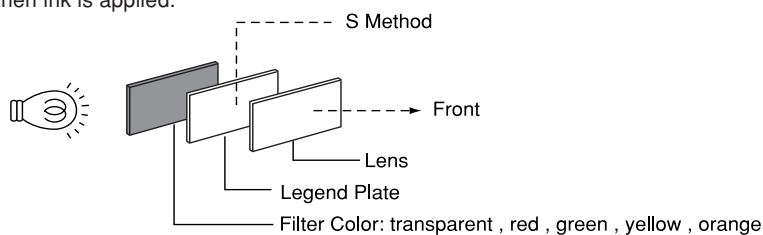
• Designate as **N** for the inclined lighting surface.

※4

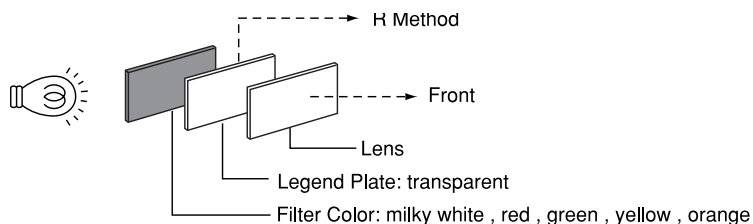
Rated Voltage	Model
6V, 18V, 24V, 28V, 48V	D27
18V, 24V, 28V, 48V	D37
100V/110V AC, 200V/220V AC	T27
100V AC, 200V AC	T37
100V AC/DC, 125V AC/DC	R27
100V AC/DC, 125V AC/DC	R37

Engraving Example

With this method, letters are engraved on the front surface of the legend plate (milky white) and then ink is applied.



With this method, letters are inversely engraved on the back side of the legend plate (transparent) and then painted with black color.



※5

Code	Lighting Color
W	Milky white
R	Red
G	Green
O	Orange
Y	Yellow

■ Specifications

Model \ Item	Rated Voltage	Lamp Voltage	Applicable Lamps
KFD-27	—————	Max. 48V AC/DC	T-10, 28L, E-10 base (standard 6.3V, 1W)
KFD-37			T-14, 34L, E-12 base (standard 18V, 2W)
KFD-50			
KFT-27	100/110V AC 200/220V AC (90~115V) (180~230V)	—————	T-10, 28L, E-10 base (standard 6.3V, 1W)
KFT-37	100, 200V AC ±10%		T-14, 34L, E-12 base (standard 18V, 2W)
KFR-27	100V AC/DC ±10%		T-10, 28L, E-10 base (standard 6.3V, 1W)
KFR-37			T-14, 34L, E-12 base (standard 18V, 2W)

Insulation Resistance	100M Ω or more between live parts and display panels measured by 500V DC megohmmeter 100M Ω or more between live parts and ground measured by 500V DC megohmmeter
Withstand Voltage	2000V AC for 1 minute between live parts and display panels 2000V AC for 1 minute between live parts and ground
Heat Resistance	For 2 hours at $-25 \pm 3^{\circ}\text{C}$ and 2 hours at $55 \pm 3^{\circ}\text{C}$
Humidity Resistance	For 96 hours at $40 \pm 2^{\circ}\text{C}$ and 95% RH
Vibration Resistance	3-dimensional vibration for 1 hour with a sweep time of 1 minute (amplitude: 0.35mm, frequency: 10~50Hz)
Shock Resistance	3-dimensional shock of 490m/s ² to 6 surfaces, 5 times
Operating Environment	Temperature: $-10 \sim 40^{\circ}\text{C}$, Humidity: 45~85% RH (No freezing or condensation)
Lighting Color	Milky white, red, green, orange
Panel Thickness	1.0~5mm
Wiring	KFD-27 KFR-27 KFR-37 M3 $\times$ 6 thread fastening screws (torque: 0.6~0.9N·m)
	KFT-27 KFD-37 KFT-37 KFD-50 M3.5 $\times$ 8 thread fastening screws (torque: 0.6~0.9N·m)

■ Materials

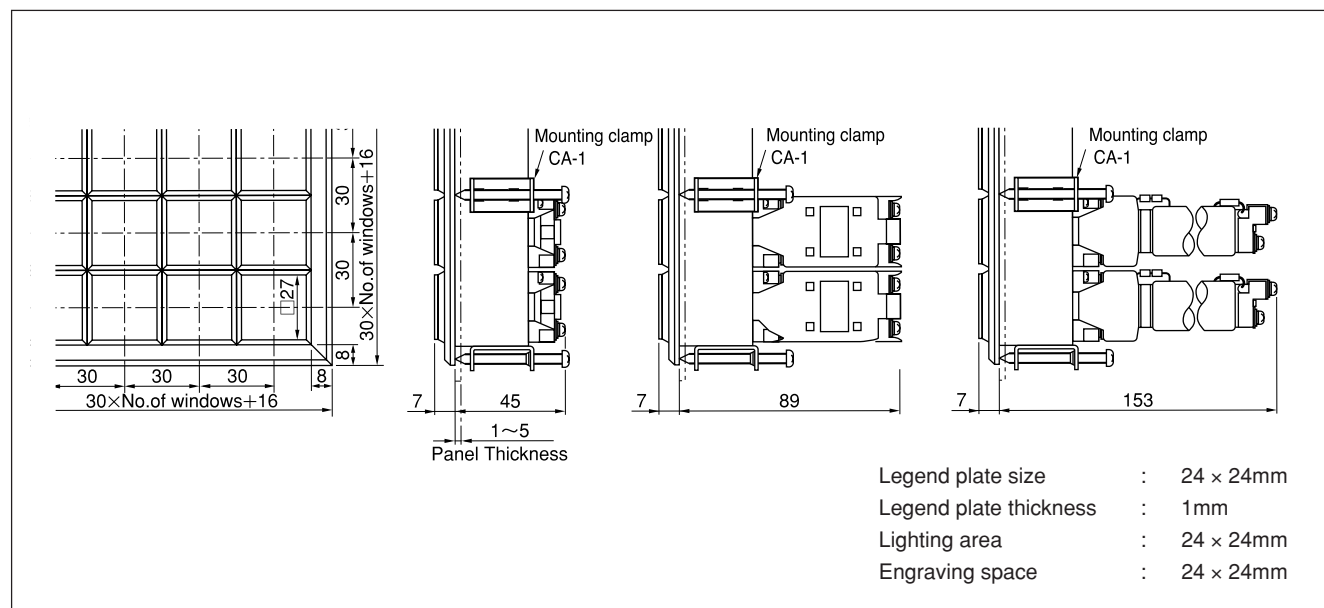
Lens	Acrylic resin (transparent)	UL94HB
Lens Frame	Polycarbonate resin (black)	UL94V-2
Legend Plate	Acrylic resin (milky white)	1mm
Filter	Acrylic resin (transparent, red, green, orange, yellow)	1mm
Bezel	ABS resin (black)	UL94HB
Metal Box	Polished steel (gray)	
Terminal Screws	Carbon steel (zinc plated with chrome treatment)	M3 $\times$ 6 or M3.5 $\times$ 8
Mounting Clamp	Polished steel (zinc plated with chrome treatment)	
Mounting Screws	Carbon steel (zinc plated with chrome treatment)	M3.5 $\times$ 40

■ Mounting

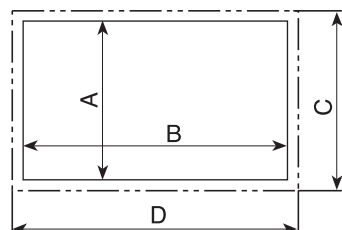
Annunciator lights shall be mounted on the control panel from the front surface. From the back, hook the mounting clamp (CA-1) evenly to the metal box and screw tightly with the mounting screws. Recommended torque is 0.4~0.5N·m.

KFD / KFT / KFR-27F

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_0$)

$$A = 30 \times \text{No. of Windows (vertical)} + 5$$

$$B = 30 \times \text{No. of Windows (horizontal)} + 5$$

Calculating External Dimensions (unit: mm)

$$C = 30 \times \text{No. of Windows (vertical)} + 16$$

$$D = 30 \times \text{No. of Windows (horizontal)} + 16$$

■ Dimension Tables

Vertical Windows

No. of windows	Panel Cut Dimensions A $^{+1}_0$	External Dimensions C
1	35	46
2	65	76
3	95	106
4	125	136
5	155	166
6	185	196

■ Weight (per window)

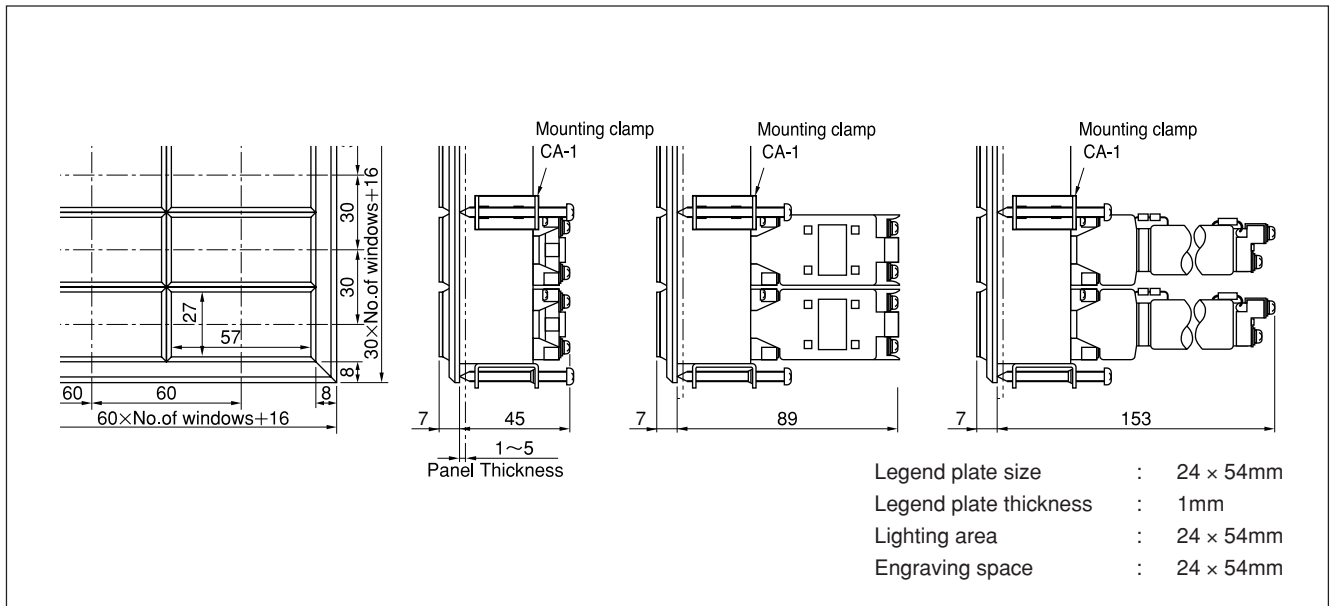
KFD-27F	KFT-27F	KFR-27F
40g	102g	86g

Horizontal Windows

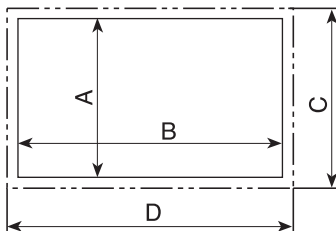
No. of windows	Panel Cut Dimensions B $^{+1}_0$	External Dimensions D	No. of windows	Panel Cut Dimensions B $^{+1}_0$	External Dimensions D
1	35	46	11	335	346
2	65	76	12	365	376
3	95	106	13	395	406
4	125	136	14	425	436
5	155	166	15	455	466
6	185	196	16	485	496
7	215	226	17	515	526
8	245	256	18	545	556
9	275	286	19	575	586
10	305	316	20	605	616

KFD / KFT / KFR-27H

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

$$A = 30 \times \text{No. of Windows (vertical)} + 5$$

$$B = 60 \times \text{No. of Windows (horizontal)} + 5$$

Calculating External Dimensions (unit: mm)

$$C = 30 \times \text{No. of Windows (vertical)} + 16$$

$$D = 60 \times \text{No. of Windows (horizontal)} + 16$$

■ Dimension Tables

Vertical Windows

No. of windows	Panel Cut Dimensions $A \begin{smallmatrix} +1 \\ -0 \end{smallmatrix}$	External Dimensions C
1	35	46
2	65	76
3	95	106
4	125	136
5	155	166
6	185	196

Horizontal Windows

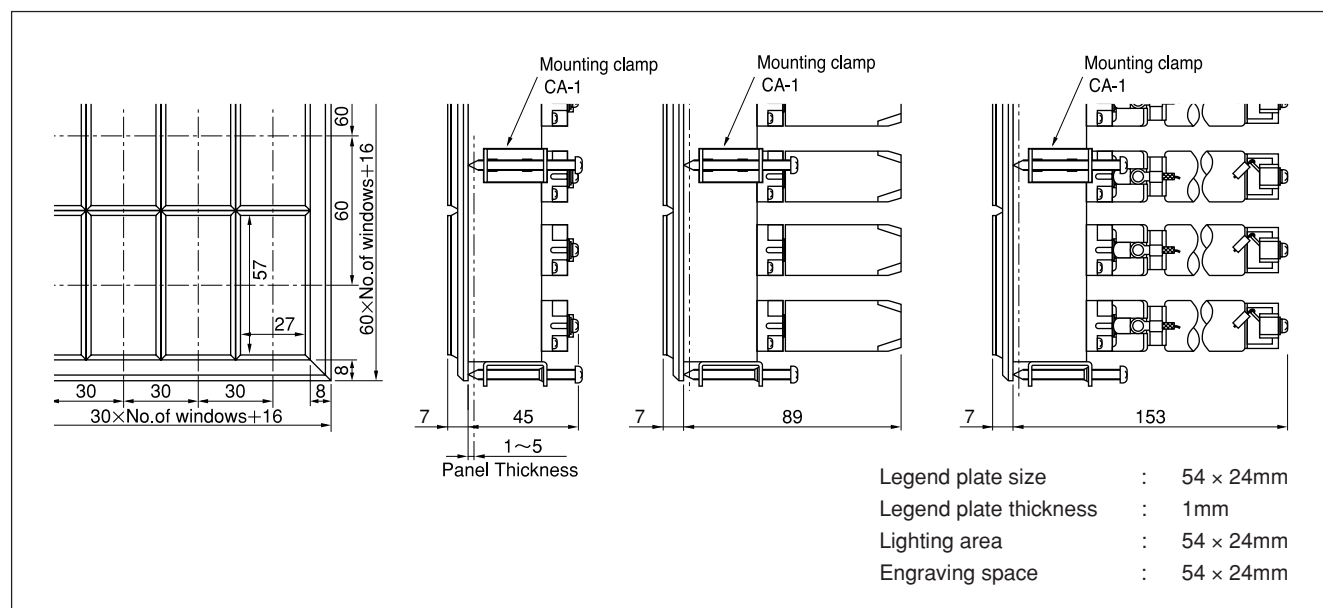
No. of windows	Panel Cut Dimensions $B \begin{smallmatrix} +1 \\ -0 \end{smallmatrix}$	External Dimensions D
1	65	76
2	125	136
3	185	196
4	245	256
5	305	316
6	365	376
7	425	436
8	485	496
9	545	556
10	605	616

■ Weight (per window)

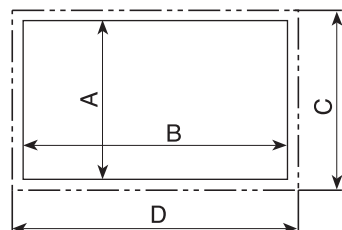
KFD-27H	KFT-27H	KFR-27H
80g	204g	172g

KFD / KFT / KFR-27V

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

$$A = 60 \times \text{No. of Windows (vertical)} + 5$$

$$B = 30 \times \text{No. of Windows (horizontal)} + 5$$

Calculating External Dimensions (unit: mm)

$$C = 60 \times \text{No. of Windows (vertical)} + 16$$

$$D = 30 \times \text{No. of Windows (horizontal)} + 16$$

■ Dimension Tables

Vertical Windows

No. of Windows	Panel Cut Dimensions A $^{+1}_{-0}$	External Dimensions C
1	65	76
2	125	136
3	185	196

■ Weight (per window)

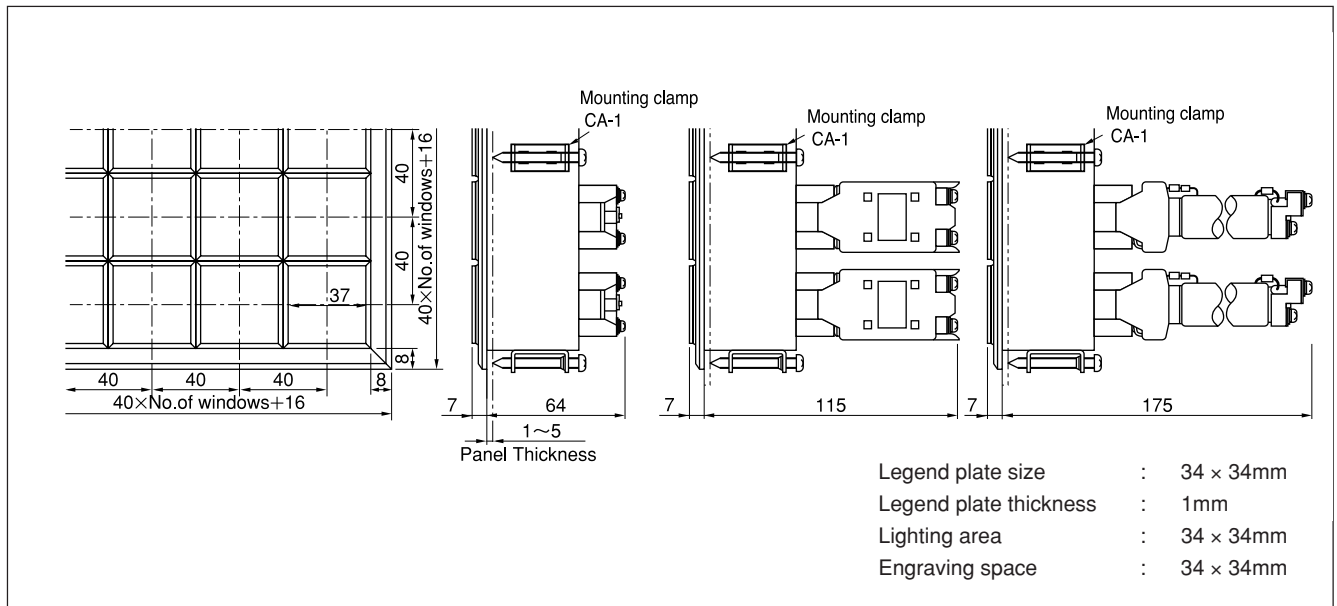
KFD-27V	KFT-27V	KFR-27V
80g	204g	172g

Horizontal Windows

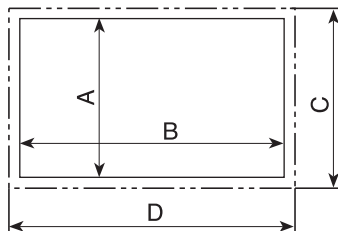
No. of Windows	Panel Cut Dimensions B $^{+1}_{-0}$	External Dimensions D	No. of Windows	Panel Cut Dimensions B $^{+1}_{-0}$	External Dimensions D
1	35	46	11	335	346
2	65	76	12	365	376
3	95	106	13	395	406
4	125	136	14	425	436
5	155	166	15	455	466
6	185	196	16	485	496
7	215	226	17	515	526
8	245	256	18	545	556
9	275	286	19	575	586
10	305	316	20	605	616

KFD / KFT / KFR-37F

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

$$A = 40 \times \text{No. of Windows (vertical)} + 5$$

$$B = 40 \times \text{No. of Windows (horizontal)} + 5$$

Calculating External Dimensions (unit: mm)

$$C = 40 \times \text{No. of Windows (vertical)} + 16$$

$$D = 40 \times \text{No. of Windows (horizontal)} + 16$$

■ Dimension Tables

Vertical Windows

No. of windows	Panel Cut Dimensions A_{-0}^{+1}	External Dimensions C
1	45	56
2	85	96
3	125	136
4	165	176
5	205	216
6	245	256

■ Weight (per window)

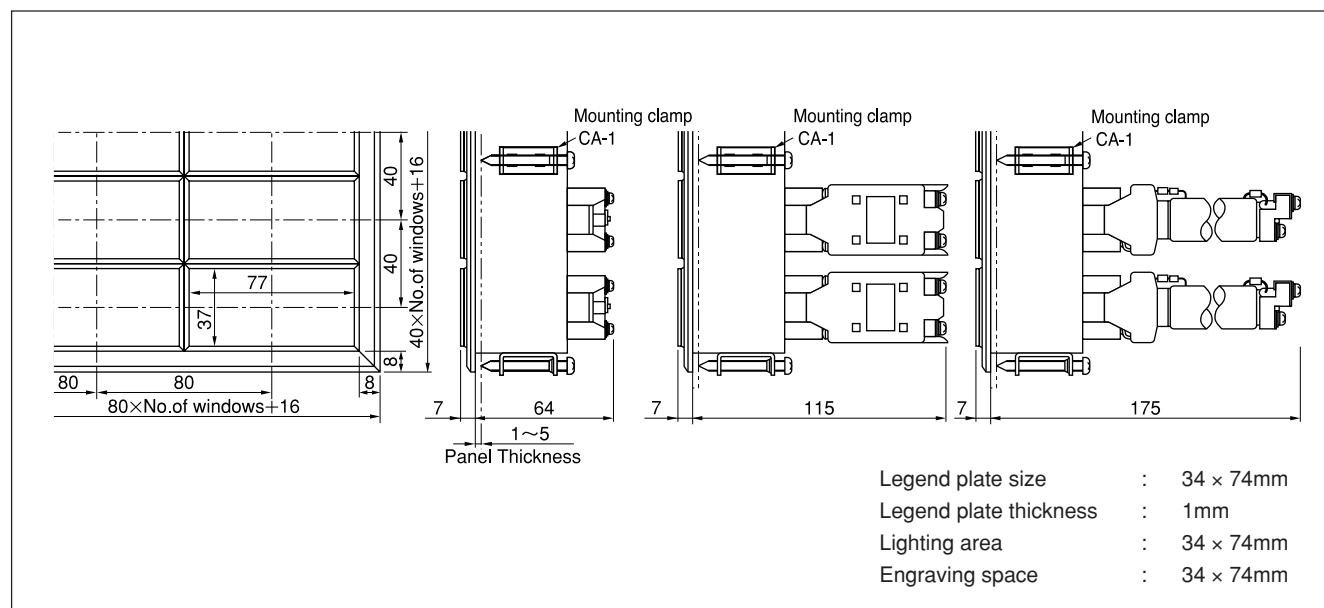
KFD-37F	KFT-37F	KFR-37F
90g	162g	138g

Horizontal Windows

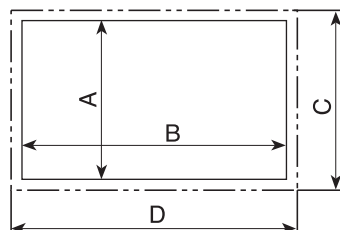
No. of windows	Panel Cut Dimensions B_{-0}^{+1}	External Dimensions D	No. of windows	Panel Cut Dimensions B_{-0}^{+1}	External Dimensions D
1	45	56	11	445	456
2	85	96	12	485	496
3	125	136	13	525	536
4	165	176	14	565	576
5	205	216	15	605	616
6	245	256			
7	285	296			
8	325	336			
9	365	376			
10	405	416			

KFD / KFT / KFR37H

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

$$A = 40 \times \text{No. of Windows (vertical)} + 5$$

$$B = 80 \times \text{No. of Windows (horizontal)} + 5$$

Calculating External Dimensions (unit: mm)

$$C = 40 \times \text{No. of Windows (vertical)} + 16$$

$$D = 80 \times \text{No. of Windows (horizontal)} + 16$$

■ Dimension Tables

Vertical Windows

No. of Windows	Panel Cut Dimensions A^{+1}_{-0}	External Dimensions C
1	45	56
2	85	96
3	125	136
4	165	176
5	205	216
6	245	256

Horizontal Windows

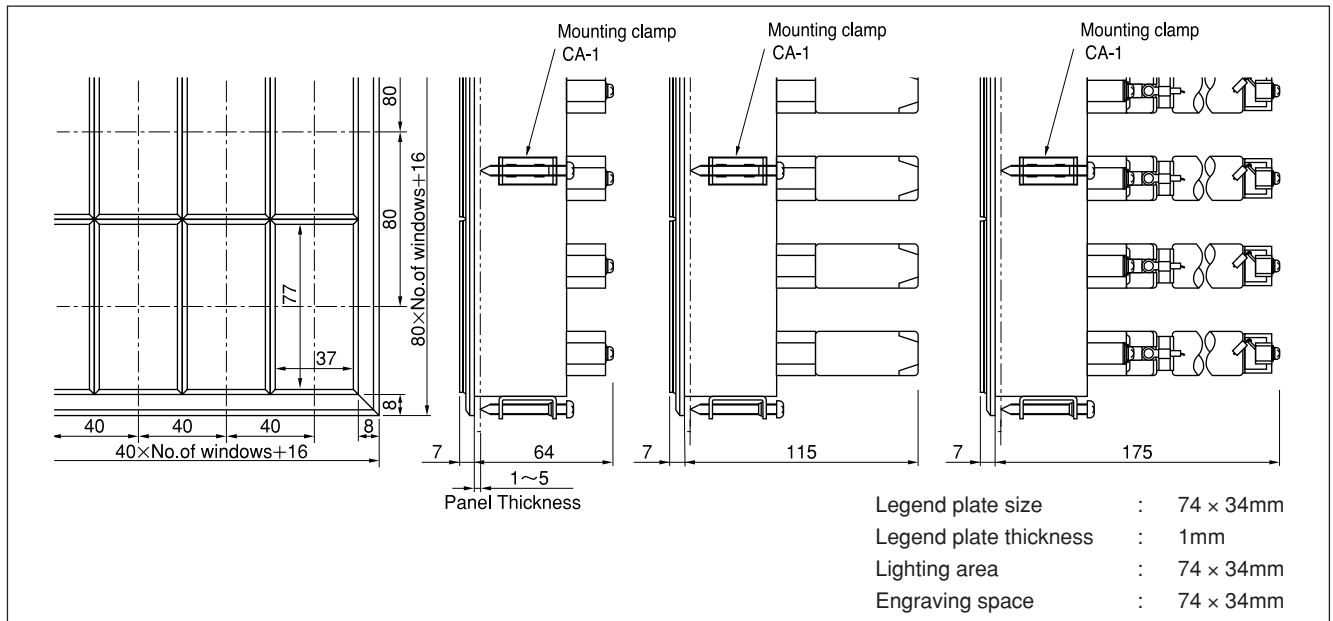
No. of Windows	Panel Cut Dimensions B^{+1}_{-0}	External Dimensions D
1	85	96
2	165	176
3	245	256
4	325	336
5	405	416
6	485	496
7	565	576

■ Weight (per window)

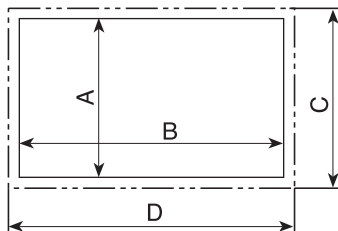
KFD-37H	KFT-37H	KFR-37H
180g	324g	276g

KFD / KFT / KFR-37V

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

$$A = 80 \times \text{No. of Windows (vertical)} + 5$$

$$B = 40 \times \text{No. of Windows (horizontal)} + 5$$

Calculating External Dimensions (unit: mm)

$$C = 80 \times \text{No. of Windows (vertical)} + 16$$

$$D = 40 \times \text{No. of Windows (horizontal)} + 16$$

■ Dimension Tables

Vertical Windows

No. of Windows	Panel Cut Dimensions A_{-0}^{+1}	External Dimensions C
1	85	96
2	165	176
3	245	256

■ Weight (per window)

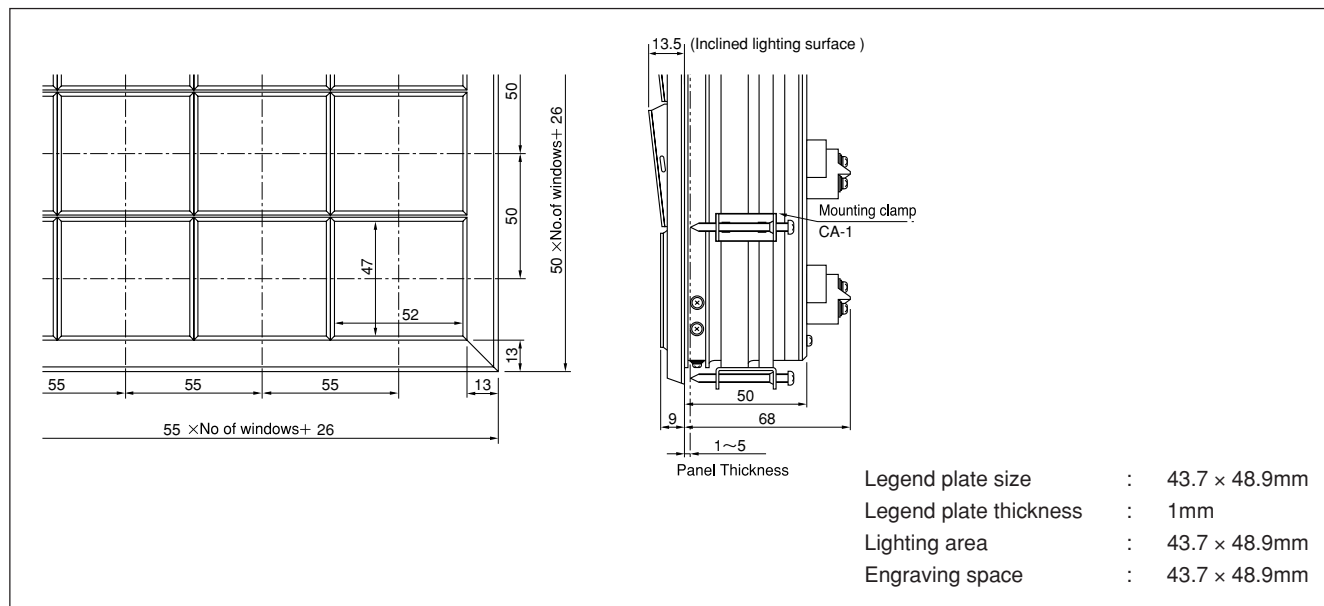
KFD-37V	KFT-37V	KFR-37V
180g	324g	276g

Horizontal Windows

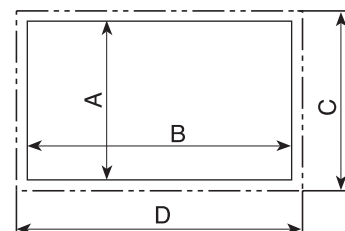
No. of Windows	Panel Cut Dimensions B_{-0}^{+1}	External Dimensions D	No. of Windows	Panel Cut Dimensions B_{-0}^{+1}	External Dimensions D
1	45	56	11	445	456
2	85	96	12	485	496
3	125	136	13	525	536
4	165	176	14	565	576
5	205	216	15	605	616
6	245	256			
7	285	296			
8	325	336			
9	365	376			
10	405	416			

KFD-50F

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

A = 50 × No. of Windows (vertical) + 16

B = 55 × No. of Windows (horizontal) + 16

Calculating External Dimensions (unit: mm)

C = 50 × No. of Windows (vertical) + 26

D = 55 × No. of Windows (horizontal) + 26

■ Dimension Tables

Vertical Windows

No. of Windows	Panel Cut Dimensions A $^{+1}_{-0}$	External Dimensions C
1	66	76
2	116	126
3	166	176
4	216	226
5	266	276
6	316	326

■ Weight (per window)

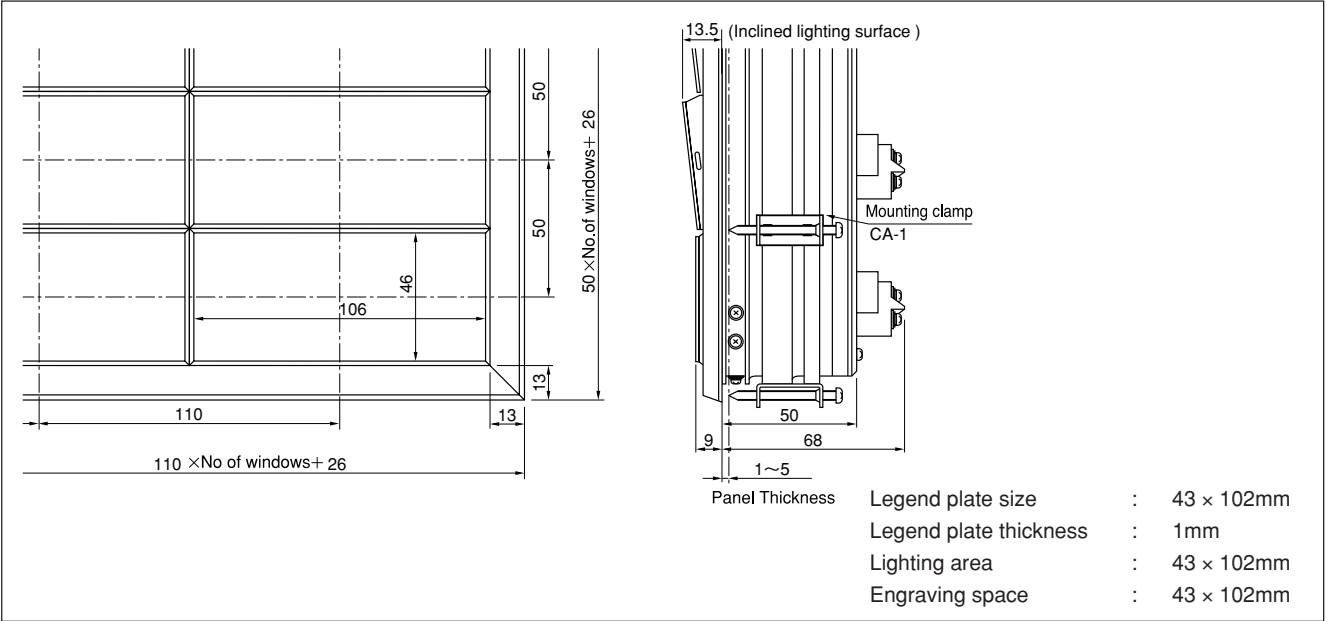
Approx. 140g

Horizontal Windows

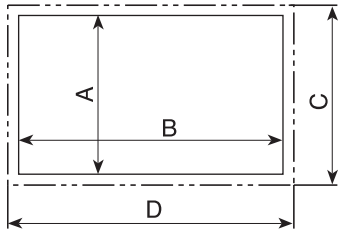
No. of Windows	Panel Cut Dimensions B $^{+1}_{-0}$	External Dimensions D	No. of Windows	Panel Cut Dimensions B $^{+1}_{-0}$	External Dimensions D
1	71	81	11	621	631
2	126	136	12	676	686
3	181	191	13	731	741
4	236	246	14	786	796
5	291	301	15	841	851
6	346	356	16	896	906
7	401	411	17	951	961
8	456	466	18	1006	1016
9	511	521	19	1061	1071
10	566	576	20	1116	1126

KFD-50H

■ Dimensions



■ Panel Cut and External Dimensions



Calculating Panel Cut Dimensions (unit: mm, $^{+1}_{-0}$)

$$A = 50 \times \text{No. of Windows (vertical)} + 16$$

$$B = 110 \times \text{No. of Windows (horizontal)} + 16$$

Calculating External Dimensions (unit: mm)

$$C = 50 \times \text{No. of Windows (vertical)} + 26$$

$$D = 110 \times \text{No. of Windows (horizontal)} + 26$$

■ Dimension Tables

Vertical Windows

No. of Windows	Panel Cut Dimensions A^{+1}_{-0}	External Dimensions C
1	66	76
2	116	126
3	166	176
4	216	226
5	266	276
6	316	326

Horizontal Windows

No. of Windows	Panel Cut Dimensions B^{+1}_{-0}	External Dimensions D
1	126	136
2	236	246
3	346	356
4	456	466
5	566	576
6	676	686
7	786	796
8	896	906
9	1006	1016
10	1116	1126

■ Weight (per window)

Approx.280g