RICOH
imagine. change.

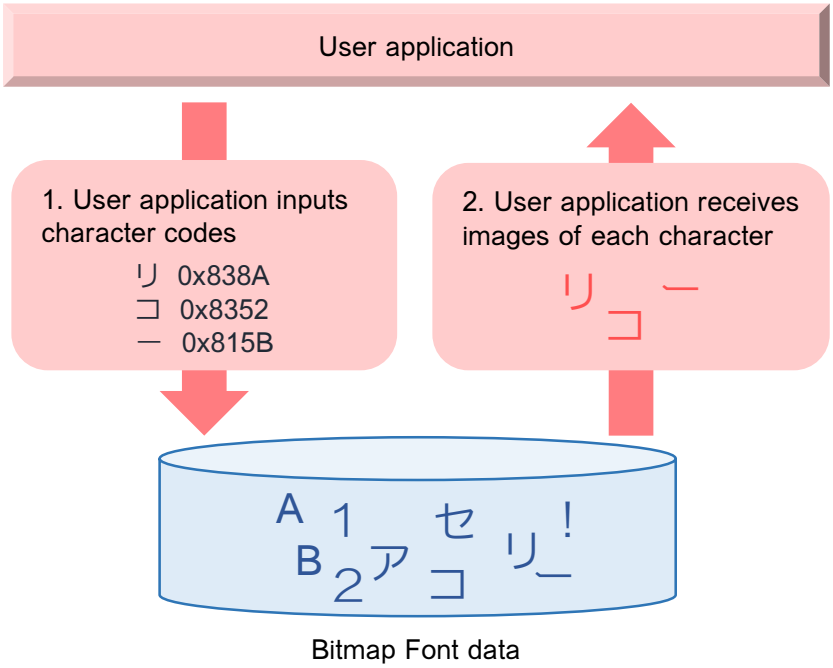
Bitmap Font

Font designed for intuitive reading despite the small number of dots

Strengths of Bitmap Font

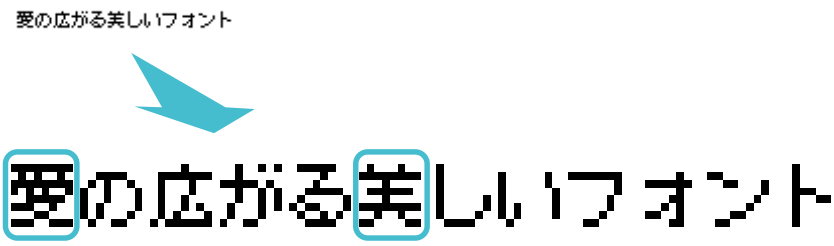
Fast display speed

Since it is image data, when the character code is received, the character image can be displayed as is.

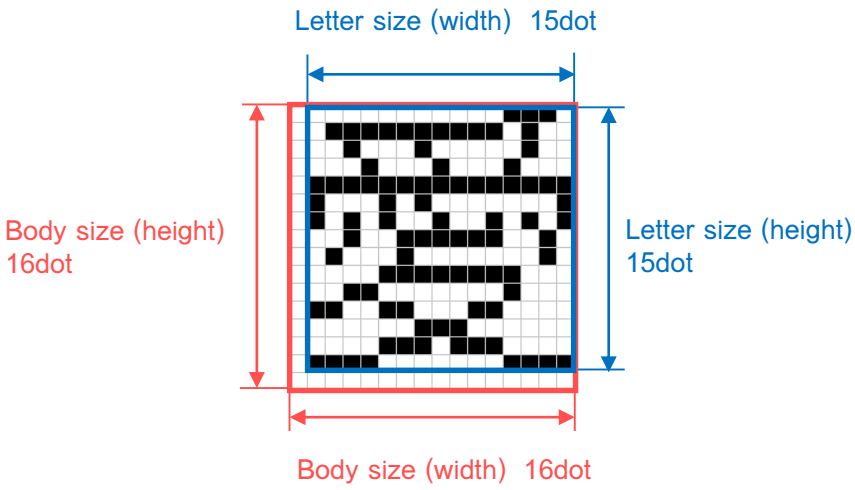


Even at small size, characters remain legible

The character is no longer correct, but it is designed for intuitive reading.



Body size and Letter size



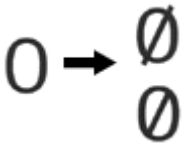
Customization

Requests such as those below can be handled with customization.

Handle requirements by creating characters

To change the character form

Example: Clearly differentiate the number zero and the letter o



Display characters using character forms from an old standard

To use characters not included in standard products

To use images and logos that have been converted into font data

Handle requirements by creating a user-defined character file

To use both characters that have duplicate character codes

To use both new and old character forms

To use characters to which character codes have not been assigned

Handle requirements by changing file format

Normally, we provide font files in our company's original file format.

For more information, please use the free consultation. zjc_font@jp.ricoh.com

To display bitmap fonts in an environment that uses TrueType Fonts (TTF format)

To use as image files (BMP format, etc.)

To use BDF format

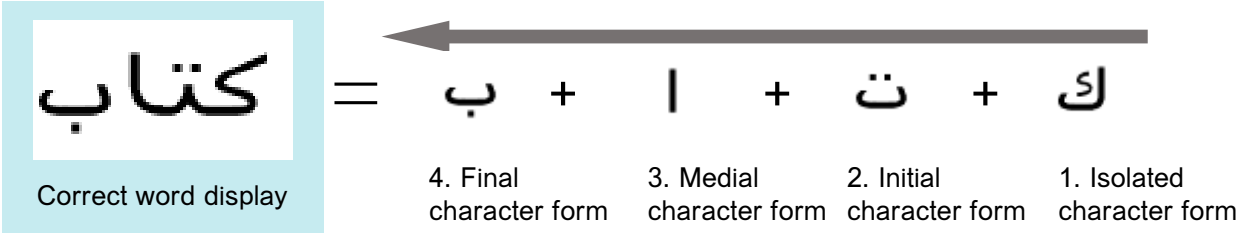
Layout Engine (option)

The Layout Engine puts individual character images in character strings. It can also do a variety of processing such as adjusting character and line spacing and rotating character strings. This software is necessary to correctly display languages with complex writing rules (Arabic, Thai, etc.).

<Arabic grammar rule processing example>

Input text character code string { 0643, 062A, 0627, 0628 }

		Final character form	Medial character form	Initial character form	Isolated character form
1. 0643	Convert to initial character form	ك	ك	ك	ك
2. 062A	Convert to medial character form	ت	ت	ت	ت
3. 0627	It is a medial position, but there is no medial character form definition, so allocate the final form	ا			ا
4. 0628	Since the previous character is final character form, next would be an initial-form character, but since there are no following characters, allocated character form	ب	ب	ب	ب



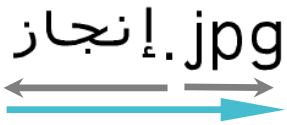
Ricoh's layout engine equips with Bidi (Bidirectional) Algorithm. It is a bidirectional algorithm.

When characters written left to right and characters written right to left are mixed together, there are ambiguities in the direction in which the characters should be displayed. For such cases, an algorithm defined in Unicode® is used to decide the display direction.

<Example mixing Arabic and English characters>

The writing direction of the text as a whole is the direction used by Arabic (right to left), but the numbers are written left to right.

The writing direction of the text as a whole is the direction used by European languages (left to right), but the portion containing Arabic characters is written right to left.



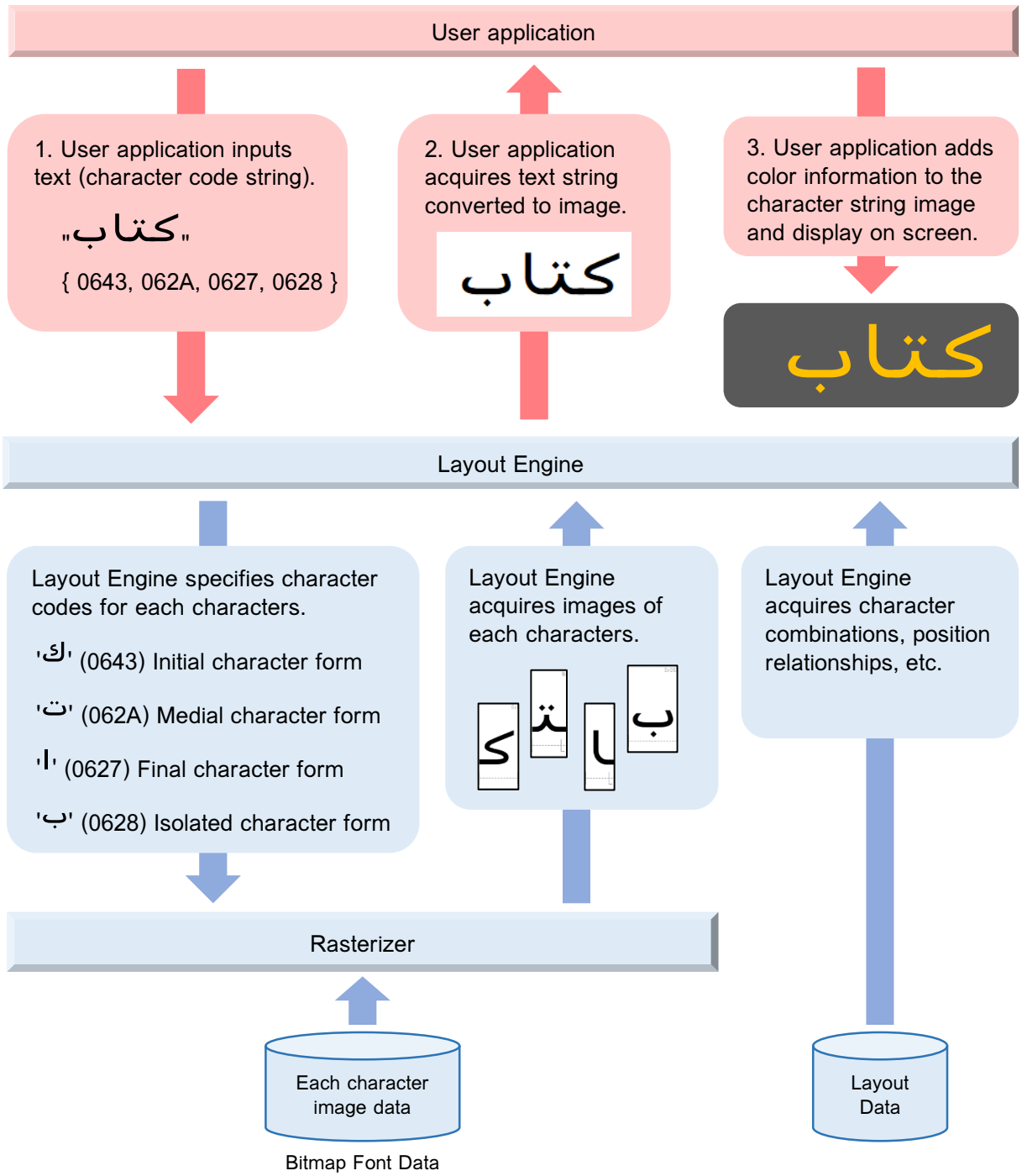
Ricoh's rasterizer and layout engine:
Since this is totally internally developed software, you do not have to worry about open-source license problems or quality assurance.
Since the source code is provided, you don't have to be concerned about the development environment or execution environment.

Layout Engine (option)

Program size

Bitmap font handler		30 [KB]
Layout engine		30 [KB]
Layout data	Japanese	15 [KB]
	European languages	21 [KB]
	Traditional Chinese characters	12 [KB]
	Korean	12 [KB]
	Arabic	54 [KB]
	Thai	53 [KB]
	Vietnamese	20 [KB]

Note:
Varies depending on the environment where compiled.



There is a possibility that third-party font files can be used if they are converted to our format.
For more information, please use the free consultation. zjc_font@jp.ricoh.com

Character Set

Language	Character Set	Total Characters	Encoding (Character Code)
Japanese	CP932 JIS X 0201 Half-width (158 characters) JIS X 0208 Non-Kanji (524 characters) JIS X 0208 Kanji Level 1 (2,965 characters) JIS X 0208 Kanji Level 2 (3,390 characters) NEC special (83 characters) NEC special IBM® extension (374 characters) IBM extension (388 characters) Characters for vertical writing (108 characters)	7,990 (Including overlapping)	JIS Shift_JIS Unicode® encoding
	JIS X 0213:2004 JIS X 0201 Half-width (158 characters) JIS X 0208 Non-Kanji (524 characters) JIS X 0208 Kanji Level 1 (2,965 characters) JIS X 0208 Kanji Level 2 (3,390 characters) JIS X 0213:2004 Non-Kanji (659 characters) JIS X 0213:2004 Kanji Level 3 (1,249 characters) JIS X 0213:2004 Kanji Level 4 (2,436 characters) Characters for vertical writing (98 characters)	11,489	
	ARIB STD-B24 JIS X 0201 Half-width (158 characters) JIS X 0208 Non-Kanji (524 characters) JIS X 0208 Kanji Level 1 (2,965 characters) JIS X 0208 Kanji Level 2 (3,390 characters) ARIB Additional code (394 characters) ARIB Additional Kanji (137 characters) Characters for vertical writing (58 characters)	7,626	

[NOTE]
<ARIB STD-B24>
As for overlapping 16 characters of JIS form and ARIB form, ARIB form is loaded.

Character Set

Language		Character Set	Total Characters	Encoding (Character Code)
European languages	Western Europe	ISO 8859-1	191	Unicode encoding Local code [NOTE] If multiple character sets are integrated, only Unicode encoding can be used.
		ISO 8859-15	191	
		CP1252	218	
	Central Europe	ISO 8859-2	191	
		CP1250	218	
	Southern Europe	ISO 8859-3	184	
	Northern Europe	ISO 8859-4	191	
	Cyrillic (Russian, etc.)	ISO 8859-5	191	
		CP1251	223	
	Greek	ISO 8859-7	188	
		CP1253	206	
	Turkish	ISO 8859-9	191	
		CP1254	216	
	North Germanic Languages	ISO 8859-10	191	
	Baltic	ISO 8859-13	191	
		CP1257	211	
	Celtic	ISO 8859-14	191	
	Southeastern Europe	ISO 8859-16	191	
Traditional Chinese characters		Big5-1984 + E-TEN	13,563 (Including overlapping)	Big5 Unicode encoding
Korean		KS X 1001:2004 (Without hanja) + KS X 1003-1993	3,434	KS (EUC-KR) Unicode encoding
Arabic		CP1256	223	CP1256
		CP1256 + 137 characters	360	Unicode encoding
Thai		CP874	192	CP874 Unicode encoding
Vietnamese		CP1258	214	CP1258
		CP1258 + 104 characters	318	Unicode encoding

Japanese character size list

Body size (Letter size) [dot]	File size [KB]	New Gothic M	New Gothic B	Gothic M	Gothic B	Round Gothic M	Round Gothic B	Mincho M	Mincho B
9 x 9 (8 x 8)	155.9	●							
10 x 10 (9 x 9)	170.8	●		●					
12 x 12 (11 x 11)	200.4	● ARIB STD-B24 support possible	● ARIB STD-B24 support possible	●				●	
13 x 13 (12 x 12)	215.2			●					
14 x 14 (13 x 13)	230.1	●	●	●	●			●	●
16 x 16 (15 x 15)	259.7	● ARIB STD-B24 JIS 3rd, 4th level kanji JIS2004 character form support possible	● ARIB STD-B24 support possible	●	●	●	●	●	●
18 x 18 (17 x 17)	422.8			●				●	
18 x 18 (18 x 18)	422.8		●						
20 x 20 (18 x 18)	467.3			●					
20 x 20 (19 x 19)	467.3	●	● ARIB STD-B24 support possible		●		●	●	
20 x 20 (20 x 20)	467.3		●						
22 x 22 (22 x 22)	511.8				●				
24 x 24 (23 x 23)	556.3		● JIS 3rd, 4th level kanji JIS2004 character form support possible	●	●	●	●	●	
24 x 24 (24 x 24)	556.3			●					
26 x 26 (24 x 24)	793.5				●				
26 x 26 (25 x 25)	793.5		●						
29 x 29 (27 x 27)	882.5			●				●	
30 x 30 (29 x 29)	912.2		● ARIB STD-B24 support possible						
32 x 32 (30 x 30)	971.5			●	● ARIB STD-B24 support possible			●	
32 x 32 (32 x 32)	971.5			●					
36 x 36 (35 x 35)	1,357.0							●	
36 x 36 (36 x 36)	1,357.0				●				
40 x 40 (38 x 38)	1,505.3		●					●	
40 x 40 (40 x 40)	1,505.3			●	●				
48 x 48 (46 x 46)	2,157.7			●	●	●	●	●	●
56 x 56 (54 x 54)	2,928.8				●	●	●	●	●
64 x 64 (60 x 60)	3,818.5				●			●	

Japanese

New Gothic M	UD font
9 x 9 (8 x 8)	愛の広がる美しいフォント
10 x 10 (9 x 9)	愛の広がる美しいフォント
12 x 12 (11 x 11)	愛の広がる美しいフォント
14 x 14 (13 x 13)	愛の広がる美しいフォント
16 x 16 (15 x 15)	愛の広がる美しいフォント
20 x 20 (19 x 19)	愛の広がる美しいフォント

New Gothic B	UD font
12 x 12 (11 x 11)	愛の広がる美しいフォント
14 x 14 (13 x 13)	愛の広がる美しいフォント
16 x 16 (15 x 15)	愛の広がる美しいフォント
18 x 18 (18 x 18)	愛の広がる美しいフォント
20 x 20 (19 x 19)	愛の広がる美しいフォント
20 x 20 (20 x 20)	愛の広がる美しいフォント
24 x 24 (23 x 23)	愛の広がる美しいフォント
26 x 26 (25 x 25)	愛の広がる美しいフォント
30 x 30 (29 x 29)	愛の広がる美しいフォント
40 x 40 (38 x 38)	愛の広がる美しいフォント

Japanese

Gothic M

10 x 10 (9 x 9)	愛の広がる美しいフォント
12 x 12 (11 x 11)	愛の広がる美しいフォント
13 x 13 (12 x 12)	愛の広がる美しいフォント
14 x 14 (13 x 13)	愛の広がる美しいフォント
16 x 16 (15 x 15)	愛の広がる美しいフォント
18 x 18 (17 x 17)	愛の広がる美しいフォント
20 x 20 (18 x 18)	愛の広がる美しいフォント
24 x 24 (23 x 23)	愛の広がる美しいフォント
24 x 24 (24 x 24)	愛の広がる美しいフォント
29 x 29 (27 x 27)	愛の広がる美しいフォント
32 x 32 (30 x 30)	愛の広がる美しいフォント
32 x 32 (32 x 32)	愛の広がる美しいフォント
40 x 40 (40 x 40)	愛の広がる美しいフォント
48 x 48 (46 x 46)	愛の広がる美しいフォント

Japanese

Gothic B

14 x 14 (13 x 13)	愛の広がる美しいフォント
16 x 16 (15 x 15)	愛の広がる美しいフォント
20 x 20 (19 x 19)	愛の広がる美しいフォント
22 x 22 (22 x 22)	愛の広がる美しいフォント
24 x 24 (23 x 23)	愛の広がる美しいフォント
26 x 26 (24 x 24)	愛の広がる美しいフォント
32 x 32 (30 x 30)	愛の広がる美しいフォント
36 x 36 (36 x 36)	愛の広がる美しいフォント
40 x 40 (40 x 40)	愛の広がる美しいフォント
48 x 48 (46 x 46)	愛の広がる美しいフォント
56 x 56 (54 x 54)	愛の広がる美しいフォ
64 x 64 (60 x 60)	愛の広がる美しいフ

Japanese

Round Gothic M

16 x 16 (15 x 15) 愛の広がる美しいフォント

24 x 24 (23 x 23) 愛の広がる美しいフォント

48 x 48 (46 x 46) 愛の広がる美しいフォント

56 x 56 (54 x 54) 愛の広がる美しいフォ

Japanese

Round Gothic B

16 x 16 (15 x 15) 愛の広がる美しいフォント

20 x 20 (19 x 19) 愛の広がる美しいフォント

24 x 24 (23 x 23) 愛の広がる美しいフォント

48 x 48 (46 x 46) 愛の広がる美しいフォント

56 x 56 (54 x 54) 愛の広がる美しいフォ

Japanese

Mincho M

12 x 12 (11 x 11)	愛の広がる美しいフォント
14 x 14 (13 x 13)	愛の広がる美しいフォント
16 x 16 (15 x 15)	愛の広がる美しいフォント
18 x 18 (17 x 17)	愛の広がる美しいフォント
20 x 20 (19 x 19)	愛の広がる美しいフォント
24 x 24 (23 x 23)	愛の広がる美しいフォント
29 x 29 (27 x 27)	愛の広がる美しいフォント
32 x 32 (30 x 30)	愛の広がる美しいフォント
36 x 36 (35 x 35)	愛の広がる美しいフォント
40 x 40 (38 x 38)	愛の広がる美しいフォント
48 x 48 (46 x 46)	愛の広がる美しいフォント
56 x 56 (54 x 54)	愛の広がる美しいフォ
64 x 64 (60 x 60)	愛の広がる美しいフ

Japanese

Mincho B

14 x 14 (13 x 13) 愛の広がる美しいフォント

16 x 16 (15 x 15) 愛の広がる美しいフォント

48 x 48 (46 x 46) 愛の広がる美しいフォント

56 x 56 (54 x 54) 愛の広がる美しいフォ

European languages (proportional)

Character size [dot]	File size [KB]	TU Sans Medium	TU Sans Bold	Gothic Medium	Gothic Bold
Pro x 12	14.3	●	●	●	●
Pro x 14	16.4	●	●	●	●
Pro x 16	18.5	●	●	●	●
Pro x 20	33.2	●	●	●	●
Pro x 24	39.5	●	●	●	●

TU Sans Medium

Pro x 12 Beautiful typeface

Pro x 14 Beautiful typeface

Pro x 16 Beautiful typeface

Pro x 20 Beautiful typeface

Pro x 24 Beautiful typeface

TU Sans Bold

Pro x 12 Beautiful typeface

Pro x 14 Beautiful typeface

Pro x 16 Beautiful typeface

Pro x 20 Beautiful typeface

Pro x 24 Beautiful typeface

Gothic Medium

Pro x 12 Beautiful typeface

Pro x 16 Beautiful typeface

Pro x 20 Beautiful typeface

Pro x 24 Beautiful typeface

Gothic Bold

Pro x 12 Beautiful typeface

Pro x 16 Beautiful typeface

Pro x 20 Beautiful typeface

Pro x 24 Beautiful typeface

European languages (half width)

Body size (Letter size) [dot]	File size [KB] Character set : CP1252	Gothic M	New Gothic M	New Gothic B
5 x 10 (4 x 9)	2.7		●	
6 x 12 (5 x 11)	3.2	●	●	●
7 x 14 (6 x 13)	3.6			●
8 x 16 (7 x 15)	4.0	●	●	●
10 x 20 (9 x 19)	9.1			●
12 x 24 (11 x 23)	10.8		●	●
15 x 30 (14 x 29)	13.4			●
20 x 40 (18 x 38)	26.1			●

Gothic M

6 x 12 (5 x 12) Beautiful typeface

8 x 16 (7 x 15) Beautiful typeface

New Gothic M UD font

5 x 10 (4 x 9) Beautiful typeface

6 x 12 (5 x 11) Beautiful typeface

8 x 16 (7 x 15) Beautiful typeface

12 x 24 (11 x 23) Beautiful typeface

New Gothic B UD font

6 x 12 (5 x 11) Beautiful typeface

7 x 14 (6 x 13) Beautiful typeface

8 x 16 (7 x 15) Beautiful typeface

10 x 20 (9 x 19) Beautiful typeface

12 x 24 (11 x 23) Beautiful typeface

15 x 30 (14 x 29) Beautiful typeface

20 x 40 (18 x 38) Beautiful typeface

Traditional Chinese characters

Gothic M		
12 x 12 (11 x 11)	美麗的字體	357.7 [KB]
14 x 14 (13 x 13)	美麗的字體	410.7 [KB]
16 x 16 (15 x 15)	美麗的字體	463.7 [KB]
18 x 18 (17 x 17)	美麗的字體	755.0 [KB]
20 x 20 (19 x 19)	美麗的字體	834.5 [KB]
24 x 24 (23 x 23)	美麗的字體	993.4 [KB]
26 x 26 (25 x 25)	美麗的字體	1417.2 [KB]

Korean

Gothic M		
10 x 10 (9 x 9)	아름다운 서체	77.3 [KB]
12 x 12 (11 x 11)	아름다운 서체	90.7 [KB]
16 x 16 (15 x 15)	아름다운 서체	117.5 [KB]
18 x 18 (17 x 17)	아름다운 서체	191.3 [KB]
20 x 20 (19 x 19)	아름다운 서체	211.4 [KB]
24 x 24 (23 x 23)	아름다운 서체	251.7 [KB]
26 x 26 (25 x 25)	아름다운 서체	359.0 [KB]

Arabic (Layout Engine required)

Gothic M		
Pro x 12	محرف جميل	11.0 [KB]
Pro x 16	محرف جميل	14.1 [KB]
Pro x 20	محرف جميل	25.3 [KB]
Pro x 24	محرف جميل	30.1 [KB]

Thai (Layout Engine required)

Sans Serif M		
Pro x 16	แบบอักษรที่สวยงาม	20.7 [KB]
Pro x 20	แบบอักษรที่สวยงาม	37.1 [KB]
Pro x 24	แบบอักษรที่สวยงาม	44.1 [KB]

Vietnamese

Sans Serif M		
Pro x 12	Kiểu chữ đẹp	8.7 [KB]
Pro x 16	Kiểu chữ đẹp	11.2 [KB]
Pro x 20	Kiểu chữ đẹp	20.1 [KB]
Pro x 24	Kiểu chữ đẹp	23.9 [KB]

RICOH Industrial Solutions Inc.
Font Section
3-2-3, Shin-Yokohama, Kouhoku-ku, Yokohama-shi, Kanagawa 222-8530, Japan

Free consultation zjc_font@jp.ricoh.com

Web site http://industry.ricoh.com/font/

- Unicode is a registered trademark of Unicode, Inc. in the United States and/or other countries.
- IBM is a trademark or registered trademark of International Business Machines Corp., registered in many jurisdictions worldwide.
- Other names and product names are either trademarks or registered trademarks of their respective companies.
- The information in this catalog is current as of September 2019.