X Logical Font Description Conventions

X Consortium Standard

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X Logical Font Description Conventions: X Consortium Standard

! " © #$$ ##% ! &

' " (( ) " ") (( ))&
(* + (+, (&)) & " & "
&) (" & & &) -) ((
((& & .) (") /

0 1) "))) &) & (
(

023 4 056 3 7 ' 4 7838 96 7 : 57024;0 56 6<0= 4 6<= >7<8 3 ' 3 4 7?'@738 7<!@;87<
A;0 <40 @7?7038 04 023 56 6<073 4 ?3 !26<06A7@70= 70<3 4 6 '6 07!;@6 '; '4 3 6<8
<4<7< 7< 3?3<0 7< <4 3 3<0 26@@ 023 !4< 4 07;? A3 @76A@3 4 6<= !@67? 86?6 3 4
4023 @76A7@70= 523023 7< 6< 6!074< 4 !4<0 6!0 04 0 4 4023 57 3 6 7 7< 4? 4;0 4
4 7< !4<<3!074< 5702 023 4 056 3 4 023 ; 3 4 4023 836@7< 7< 023 4 056 3

3B))) (! & & 1 "
& " (& & C (! &

5 D (0 4 &

! " E #$$ #$# 8 " 3F& ! ? ?6 6 " 1

' &) (&)& (& & ("
1 1) "))) 8 " 3F& !
D & & (& (( )& 0
)& 1 & B

2 1) 0 " D (@ !

70! 61) " D (7 0 ( ) !

0 " D (? !

A 6 " " D (A 7)

" D (6 7)

Table of Contents

7 &)
G F& G
' 1 ; F& 8) 1 < G
& ?& !) G
&) ') G
& 0 (& " (H
A 7 (1 4 " 7
H
& 6 ! B ?) " & & H
A 3B H
H @ ") 8) %
< %
< B %
< 8 (
3B G
' H
4;<8 = H
6?7@=I<6?3 %
537 20I<6?3 %
@6<0 %
3057802I<6?3 %
688I 0=@3I<6?3 %
'7 3@I 7J3 %
'47<0I 7J3
3 4@;074<I
3 4@;074<I=
'6!7<
6 3 6 3I57802 M
!26 30I 3 7 0 = M
!26 30I3<!487< M
?7<I '6!3 M
<4 ?I '6!3 M
?6 I '6!3
3<8I '6!3
6 I!6'706@I57802
6 I@453 !6 3I57802 $
K;68I57802 $
7 ; 3I57802 $
;'3 ! 7'0I $
;'3 ! 7'0I= #
;A ! 7'0I #
;A ! 7'0I= #
;'3 ! 7'0I 7J3 GU
;A ! 7'0I 7J3 GU
?6@@I!6'I 7J3 GU
;<83 @7<3I'4 7074< GU
;<83 @7<3I027!><3 G
0 7>34;0I6 !3<0 G
0 7>34;0I83 !3<0 G
706@7!I6< @3 GG
!6'I237 20 GG

I237 20 GG
3@607 3I 3057802 GH
3@607 3I537 20 GH
537 20 G%
3 4@;074< G%
4<0 G
6!3I<6?3 G
;@@I<6?3 G
!4'= 7 20 G
<407!3 G
83 07<6074< GM
4<0I0='3 GM
4<0I 3 74< G
6 03 7J3 I<6?3 G
6 03 7J3 I 3 74< G
65I6 !3<0 G
65I83 !3<0 G
65IL G$
6 7 I<6?3 G$
6 7 I@7?70 G$
6 7 I0='3 G$
A& ' 6 G$
% ? B 0 (HU
?) ' H
) HH
M ') H
6(( ) 3 (') H$
$ A8 ! ( ) H#
@ 8 ! ( ) F& H#
4<0I6 !3<0 4<0I83 !3<0 83 6;@0I!26 H#
4<0I6 !3<0 H#
4<0I83 !3<0 %U
83 6;@0I!26 %U

Chapter 1. Introduction

7 F&)) &) 1
1 (((") 1 (
2 1 ( )) F& (
) (1) 1 ((1 F&
((")) " ") (

) &) (1 " 1
1 & ( ) &
" (( )D)) 7 ( ) F&
)) & 1 (") ( ) " (
(ListFonts F& B (&)
2 1) ( ) ( )) & F& 1
(2 1) (" C
)) 1 ((

0)& " 1 ") ( ) * ((
@ 8,) 1 &)))) F&
))))) 1 7
)) (" " 1 ((FontName @ 8
1 ((D FontProperties) (

0 @ 8 1 F& (") (&)
!6'I237 20 I237 20 3@607 3I 3057802 (& "
) " ( ) " & & ")&
) (" 1 & & D (7
(F&)) &) &)
) ") ") 1 &

Chapter 2. Requirements and Goals

0 @ 8 " " 1 ") (
) /

N ' 1 & F&) 1 (&) "

N & & (1))) "

N & ") " ( )) (

N & (& " ((

N 7 (1 " (

N &) B ( ) " & &

N 7 B

Provide Unique and Descriptive Font Names

7 & 1 (" &") 1
&" 1 (" & F& & 1 "
" " C & C (& 1
(&) (

0 (& &) &) "
" & ")) (F& & (
(1

Support Multiple Font Vendors and Character Sets

0 (& "& (&
(((1 & 5)
") 1 (D & & ((
&))) ")& F&

6 & ((1 1) (" " ((
) " ( ) " 1) 1
( ) "))
(4 (") 1
' 1 & ((F&) (
( ) ( )) " 1 1 &)
&

Support Scalable and Polymorphic Fonts

7((&))) C 1 &
( ) ( ) (((
) &) &) (( ) ( ))

Support Transformations and Subsetting of Fonts

6 (((&
F&)) &) ((& ( ) (
( ) F& " ( )) ( ) (((((
& F& ( )) ((((( ))

Be Independent of X Server and Operating or File System Implementations

)) F&)& (& &)
1 & D " ((&
1 2 1 & (1 " 1 (
(B D &) "
& F& ((0 " & 1 * B)
,

Support Arbitrarily Complex Font Matching and Substitution

7 (@ 8 & (( ) 1
(" & ( )D ((0))
1 ( ) ( ) (" (( ) "
& & D & D (F&

Be Extensible

0 @ 8 & B - 1) 1 (
)) (" (& D " B ") 1

Chapter 3. X Logical Font Description

@ 8 1)) / FontName) " 1 (
(& F& (( ) F& *(B
OpenFont ListFonts , 1 (FontProperties
)) (

0 FontName & (F& &))
F& 7) (1 & (FONT ! &
!) A 8 & *A8 G ,

0 FontProperties & ((&
)) F& (XFontStruct &) & 0
) 1 & ( ) (FontProperties
(STARTPROPERTIES ENDPROPERTIES A8 G) ( )

FontName

3) FontName ")) ("/ FontNameRegistry (B
(FontNameSuffix 0 FontName & 7 4 $$ #) " 0
FontNameRegistry B " * "
! &, (" &) (
FontNameSuffix B)

6 ( ) ( ) ( ) & FontNameRegistry
(B) (" + + *2='23<, 6 FontNameRegistry
(B ((/O) (1) (& & @ 8
) ( ) 1 ! & ((& & B @ 8 (
7(F& B)& @ 8 ( ) &)
" ( )& &) &) B "
(0 1 (FontNameRegistry (B (
& " 1

7)) ( ) FontName F& "P)
&) (1 & " F& 1 6 Font-
NameSuffix((FontPropertiesP &) 1 &
" & " "

FontName Syntax

0 FontName &) & " * (0 7< $, A)D&
< & B) (/

< //Q < " < &((B R ' 1
< " ' 1 < &((B

< " //Q <8 R <3B ' (B <8

< &((B //Q 4;<8 = <8 6?7@=I<6?3 <8
537 20I<6?3 <8 @6<0 <8
3057802I<6?3 <8 688I 0=@3I<6?3
<8 '7 3@I 7J3 <8 '47<0I 7J3 <
8 3 4@;074<I <8 3 4@;074<I=
<8 '6!7< <8 6 3 6 3I57802
<8 !26 30I 3 7 0 = <8
!26 30I3<!487<

//Q 0 7< $ @ 8 1 (B
(B *(B + %+,

<3B ' (B //Q 4!030 +O+ *'@; ,

<8 //Q 4!030 + + *2='23<,

' 1 < " //Q 0 7< $ " 1 @ 8

' 1 < &((B //Q 0 7< $

1 &) &) " (7 4 $$ # "))) B) & "
("/

N S S *2='23<, @ 8 ( ))

N STS *K;3 074< ?6 >, +L+ *6 03 7 >,) ( )
))

N S S *!4??6, & @ 8 ((

N S+S *K;406074< ?6 >, &)) &) F& (

6))) & (&))
! (" 1 ( ) " (F&
F& ( ) 0 (" & 1
G)) 7))) &) (F&
B)) & " (1 & B) & <
'6!3 1)) (FontName (P (B " +70! 61
)+ " 6?7@=I<6?3

FontName Field Definitions

0))& FontName/

N 4;<8 = (

N 6?7@=I<6?3 (

N 537 20I<6?3 (

N @6<0 (

N 3057802I<6?3 (

N 688I 0=@3I<6?3 (

N '7 3@I 7J3 (

N '47<0I 7J3 (

N 3 4@;074<I 3 4@;074<I= (

N '6!7< (

N 6 3 6 3I57802 (

N !26 30I 3 7 0 = !26 30I3<!487< (

FOUNDRY Field

4;<8 = B " ((" (&
" C & (((((("
C (( ) (

0)) " 1 (")
(&) *(B 70!, & " C & (((
& 3) " 1 (" " "
(( ) (C " ( ) &
) ((& (( )) (
D " ( ) ( )& " (& &) "
) (D

7 & & " ! & & (
FontName( )) " ") & (! &

0 ! & ( ) & (" "(&
& (&) & " (&)
" (& @ 8 (

FAMILY_NAME Field

6?7@=I<6?3 " (" ((( ) "
1 ( ) ") 0 & & (&
) F& 0 & & &
& ((& (( ) (

7 & & & & " (
(( )& " " 1
"& " (" (S) " D A) 1
6?7@=I<6?3 6?7@=I<6?3) &) (
" ( ) 1 (( ) (

0 (" B (6?7@=I<6?3/

N 2 1)

N 70! 61)

N 0

N 0

N A 6 "

N

WEIGHT_NAME Field

537 20I<6?3 " ((S ") "
)D (( )) " 4;<8 =S .& " 0
& & & & ((& 0
1 & +U+ &)) (* ,

0 (( )) & ")
.& " (" 1 " (( )
(F& P 8 A " (( ) &
F& 1 ") (A (((

537 20I<6?3) & ") &
((S) & & 2 1 & &
(( ) " & & &)) & &
" (* 3@607 3I537 20 537 20, " 1
) 1 "))& ") 1

SLANT Field

@6<0) ") 1 & (( ) "
& (0) " (/

+ +	; " "
+7+ 7)	7) "))D (1)
+4+ 4 F&	4 F& & " "))D (1)
+ 7+ 1 7)	7) ") &))D (1)
+ 4+ 1 4 F&	4 F& & " ") &))D (1)
+40+ 4	4
&) ')	

0 @6<0) (" ") 1) & &) 1
F& 1 & & ((" &

SETWIDTH_NAME Field

3057802I<6?3 " " 1 (S ")
C & (( )) "
4;<8 =S .& " 0 1 & +U+ &)) (*
,

6 537 20I<6?3 (((
)) & " S .& " (

1 " (( ) (F& &
(( ) " & &)) & &
3@607 3I 3057802 (" 1 1)
))&

0 (" B (3057802I<6?3/

N <

N !

N <

N 8 & 5

ADD_STYLE_NAME Field

688I 0=@3I<6?3 " (") (
) & (& ( )& (
0)) +V+ (&)) (*
,

688I 0=@3I<6?3 ( )) ( ) (& (& F&
7 & &) "))

0 (" B (688I 0=@3I<6?3/

N (

N (

N 7 (

N 8)

PIXEL_SIZE Field

'7 3@I 7J3 " 1 C (( )& '47<0I 7J3
3 4@;074<I= '7 3@I 7J3 " " " " "
+V+ 6 " " " +V+ B * ,
'7 3@I 7J3 & &) 1)) ")
((" *< 1 1 &) F& 1
" ((& " B , J &)) (*
,

'7 3@I 7J3 & & &)) F& ( ))
" 1) C " (C 1) & (
) ("

SN POINT_SIZE Field

'47<0I 7J3 " 1 C ( ) (" '47<0I 7J3
" " " " " +V+ 6 " " " +V+
B * , 0 (& &)
1)) ") ((" *< 1
'47<0I 7J3) F& 1 " ((& "
B , '47<0I 7J3 B) * (

) G G F&) , J &)) (*
,

'47<0I 7J3 3 4@;074<I= &) F& ( )) "
1) C) B C " (
'7 3@I 7J3 & ((

RESOLUTION_X and RESOLUTION_Y Fields

3 4@;074<I 3 4@;074<I= & " " " " 1
C 1) & & B) * , (
) (" J &)) (*
, 2 C 1) 1 & F&) & (
& " (1 (( ) *(B /
%/H G/ ,

0 (B C &)) & (
1 1 ((1))) *(B C 1
) &) B C B ,))
(0 ((B & ((%
(" (* C (& % B , % ("
(U * C (& G$ B , & 1
( ) & &))) 1 & '47<0I 7J3
3 4@;074<I= 1 ((
((B C ("))

SPACING Field

'6!7<) "))) ((
) *(B) , *1) ,)) *)
) ( ) ("))) (
, 0) " (/

+'+	'	6 ("))) 1 ( ) " <))) ((
+?+	?)	6 (")))) * 1 " (") , <))) ( ) (
+!+	! !	6) (( ))) * " (( )) + B + (" " (B " (B , A (" 1 "))) " 1 + D+ & ( ))) 0 D " *)) 1) / U WQ (" WQ " " WQ P " 1) / WQ (" WQ "

" WQ C , 6 1) B (
(B) 1)) " *
)) /) WQ (
)) WQ ( ) , 0)
" Q ( ) O ( )
Q 6 3 6 3I57802

AVERAGE_WIDTH Field

6 3 6 3I57802 " " ")) 1 & " 1 &
") (& 1 & (( ) "
(* & (B , & (")
((" (6 " +X+ *07@83,) " 1 1 &
)))) ((" (J
&)) (* ,

CHARSET_REGISTRY and CHARSET_ENCODING Fields

0)) &) " ((*) (S
" , ! &)) "
!26 30I 3 7 0 = B " (" &
) ( ) " !26 30I3<!487< "
( ))) (" &
& "

6 &") B) 1 D " &))
) " B) 1 (D "
( ) (((
( )) 1) 0 !26 30I 3 7 0 = !26 30I3<!487<
( ) (F&) ( ) ( ))
" 1 1 &) & 0 1
( )&)) (1

0 1) (")))
!26 30I 3 7 0 = !26 30I3<!487<) &))
) " (") 1 /

! " //Q ! " < R ' 1! " <
! 3) " //Q ! 3) "< R ' 1! 3) "
<
! " 4 " C 7 <& R 4 " C 7
< //Q <& 8 =
' 1! " 4 " C 7 0 7< $
< //Q
! 3) " 0 7< $ &) & (( )
< //Q
' 1! 3) " 0 7< $
< //Q
4 " C 7 //Q 0 7< $ ") ((
) " C

<& //Q 0 7< $ ( ) &
4 " C 7 //Q 0 7< $ ") (
" C
8 //Q 4!030 + + * ;@@ 04',
= //Q 0 7< $ &) *(B #$#,

0 ! & & " (&)))
(&) ( ) (@ 8

0 7 4 @)) " ! &
!26 30I 3 7 0 = !26 30I3<!487< 1 & / +7 4$$ # +

7(!26 30I3<!487<) +V+ *@3 0 K;6 3 A 6!>30, +V+
)) (& +Y+ * 7 20 K;6 3 A 6!>30, & "
" (&)) & ( ))
((0 (&)) & ( )
)) & ( )) 0)) B) 1
") ( )) ( ))
(0 ( ))&) "
)) &

0 A< (& "

& //Q @ (A)D " @ " A)D
" @ //Q " R ") " @
" //Q <& R <& ;) <&
<& //Q +UB+ 2 B<& R 8)<&
2 B<& //Q 2 B8 " R 2 B8 " 2 B<&
8)<& //Q 8)8 " R 8)8 " 8)<&
8)8 " //Q +U+ R + + R +G+ R +H+ R +%+ R + + R +M+ R + + R +$+ R +#+
2 B8 " //Q 8)8 " R + + R + + R +)+ R + + R + + R +(+
@ (A)D //Q +V+ *@3 0 K;6 3 A 6!>30,
" A)D //Q +Y+ * 7 20 K;6 3 A 6!>30,
) //Q +ZU+ * '6!3,
;) //Q +I+ *@45 @7<3,

3) ") ( )) (&) &
(6 ") " <&) (( ))) &
1 (" ( )) 6 " " <&) ("
))) & (6 2 B<& B)
& 6 8)<&) & 0 ( ) (
& (" " @

B

-misc-fixed-medium-r-normal--0-0-0-0-c-0-iso8859-1[65 70 80_90]

(&)))) M U $U #U

Examples

0 (" B ((1 ( ) (
! & &

75-dpi Fonts	
! G	A ! ? & < G GU 'M$ 7 4$$ #
! A G	A ! A < G GU ' M 7 4$$ #
! A 7) G	A ! A 7 < G GU ' 7 4$$ #
! 7) G	A ! ? & 7 < G GU 'MM 7 4$$ #
! & $	6 ! & ? & < $ $U ? U 7 4$$ #
! & U	6 ! & ? & < U UU ? MU 7 4$$ #
! & G	6 ! & ? & < G GU ? U 7 4$$ #
! & G%	6 ! & ? & < G% G%U ? U 7 4$$ #
! & A U	6 ! & A < U UU ? MU 7 4$$ #
! & A 4 F& U	6 ! & A 4 < U UU ? MU 7 4$$ #
! & 4 F& U	6 ! & ? & 4 < U UU ? MU 7 4$$ #
100-dpi Fonts	
U	6 ? & < % UU UU UU '$ 6 4<0 '3!7 7!
%	6 ? & < GU %U UU UU ' U 6 4<0 '3!7 7!
$	6 ? & < G $U UU UU ' %G 6 4<0 '3!7 7!
G%	6 ? & < H% G%U UU UU ' # 6 4<0 '3!7 7!
0 A U	6 0 A < % UU UU UU ' M 7 4$$ #
0 A 7) U	6 0 A 7 < % UU UU UU ' 7 4$$ #
0 7) U	6 0 ? & 7 < % UU UU UU ' H 7 4$$ #
0 U	6 0 ? & < % UU UU UU ' % 7 4$$ #

Font Properties

6 (& ") & ((
((& (& ( ) 1 & (
F& & (" 0 @ 8) (B 1 (
(( )D &
((" 1 (0 " 1))
&" ((D &) (")
" ") &

& 7 4 $$ #) "

6 ((((& &
1 B (' 1 (&
( ) (") ( ) 1
1 ( ) "& & 1 (
((/ +I+ *@45 @7<3, (" C (
(+I+ *@45 @7<3,

0 A)D& < & B) (((/

' //Q 4 ' @

4 ' <;@@ R 4 ' 4 ' @
@ //Q

4 ' //Q ' 1 ' R '

' 1 0 7< $ R ;) 4 " C 7 ;) 0 7< $
' //Q

' //Q 4;<8 = R 6?7@=I<6?3 R 537 20I<6?3 R @6<0
R 3057802I<6?3 R 688I 0=@3I<6?3 R '7 3@I 7J3
R '47<0I 7J3 R 3 4@;074<I R 3 4@;074<I= R
'6!7< R 6 3 6 3I57802 R !26 30I 3 7 0 =
R !26 30I3<!487< R K;68I57802 R 3 4
@;074< R ?7<I '6!3 R <4 ?I '6!3 R ?6 I '6!3
R 3<8I '6!3 R ;'3 ! 7'0I R ;'3 ! 7'0I= R
;A ! 7'0I R ;A ! 7'0I= R ;<83 @7<3I'4 7074<
R ;<83 @7<3I027!><3 R 0 7>34;0I6 !3<0 R
0 7>34;0I83 !3<0 R 706@7!I6< @3 R I237 20 R
537 20 R 6!3I<6?3 R ;@@I<6?3 R 4<0 R !4'=
7 20 R 6 I!6'706@I57802 R 6 I@453 !6 3I57802
R 3@607 3I 3057802 R 3@607 3I537 20 R
!6'I237 20 R ;'3 ! 7'0I 7J3 R 7 ; 3I57802
R ;A ! 7'0I 7J3 R ?6@@I!6'I 7J3 R <407!3
R 83 07<6074< R 4<0I0='3 R 4<0I 3 74<
R 6 03 7J3 I<6?3 R 6 03 7J3 I 3 74< R
65I6 !3<0 R 65I83 !3<0 R 65IL R 6 7 I<6?3 R
6 7 I@7?70 R 6 7 I0='3

;) //Q 4!030+I+ *@45 @7<3,

4 " C 7 //Q 0 7< $ " (" C

FOUNDRY

4;<8 = (FontName B) 604?

4;<8 =)))& (& (& (

FAMILY_NAME

6?7@=I<6?3 (FontName B) 604?

6?7@=I<6?3)))& (& (& (

WEIGHT_NAME

537 20I<6?3 (FontName B)
604?

537 20I<6?3) (& (& ((/

```
if (WEIGHT_NAME undefined) then
   WEIGHT_NAME = ATOM("Medium")
```

SLANT

@6<0 (FontName B) 604?

@6<0) (& (& ((/

```
if (SLANT undefined) then
   SLANT = ATOM("R")
```

SETWIDTH_NAME

3057802I<6?3 (FontName B)
604?

3057802I<6?3) (& (& ((/

```
if (SETWIDTH_NAME undefined) then
   SETWIDTH_NAME = ATOM("Normal")
```

ADD_STYLE_NAME

688I 0=@3I<6?3 (FontName B)
604?

688I 0=@3I<6?3) (& (& ((/

```
if (ADD_STYLE_NAME undefined) then
   ADD_STYLE_NAME = ATOM("")
```

PIXEL_SIZE

'7 3@I 7J3 (FontName B) 7<0HG

) F& " B 1 & (1 & ")(B) *)
)) ,) & (" " ( ) & " 1 &
( )(((/

```
DeciPointsPerInch = 722.7
EMspace = ROUND ((RESOLUTION_X * POINT_SIZE) / DeciPointsPerInch)
ENspace = ROUND (EMspace / 2)
THINspace = ROUND (EMspace / 3)\fP
```

*-, 1 D *L, &)
4;<8 (&) & "& &
B " 0 & ")) " Q @44 * OU , @44
(&) & "& "

'7 3@I 7J3) B (& ( )) "
(" " /

```
DeciPointsPerInch = 722.7
if (PIXEL_SIZE undefined) then
   PIXEL_SIZE = ROUND ((RESOLUTION_Y * POINT_SIZE) / DeciPointsPerInch)
```

POINT_SIZE

'47<0I 7J3 (FontName B) 7<0HG

) F& " 1) 1 & ( )))
) & (" " /

```
EMspace = ROUND (POINT_SIZE / 10)
ENspace = ROUND (POINT_SIZE / 20)
THINspace = ROUND (POINT_SIZE / 30)
```

8 " '47<0I 7J3)))& B

RESOLUTION_X

3 4@;074<I (FontName B)
!6 8HG

3 4@;074<I)))& B

RESOLUTION_Y

3 4@;074<I= (FontName B)
!6 8HG

3 4@;074<I)))& B

SPACING

'6!7< (FontName B) 604?

'6!7<)))& (& ( )) " (
" 1 1 (FontName

AVERAGE_WIDTH

6 3 6 3I57802 (FontName B)
7<0HG

6 3 6 3I57802)))& (1 ( )) "
(" " /

```
if (AVERAGE_WIDTH undefined) then
     AVERAGE_WIDTH = ROUND (MEAN (ABS (width of each glyph in font)) * 10)
          * (if (dominant writing direction L-to-R) then 1 else -1)
```

?36< (&) &) ("&

) F& 1 & (& ( ))) *), (
) ( ) & (" " & " 6 3 6 3I57802
3 4@;074<I (/

```
if (SPACING not proportional) then
   CharPitch = (RESOLUTION_X * 10) / AVERAGE_WIDTH
```

CHARSET_REGISTRY

!26 30I 3 7 0 = (FontName B)
604?

!26 30I 3 7 0 =) (& (& (

CHARSET_ENCODING

!26 30I3<!487< (FontName B)
604?

!26 30I3<!487<) (& (& (

MIN_SPACE

?7<I '6!3 " 1 & * (7<0HG, " 1)
&) 1 & & (

?7<I '6!3) B (1 ( )) "
(" " /

```
if (MIN_SPACE undefined) then
   MIN_SPACE = ROUND(0.75 * NORM_SPACE)
```

NORM_SPACE

<4 ?I '6!3 " 1 & * (7<0HG, " 1)
) 1 & & (

<4 ?I '6!3) B (1 ( )) "
(" " /

```
DeciPointsPerInch = 722.7
if (NORM_SPACE undefined) then
   if (SPACE glyph exists) then
      NORM_SPACE = width of SPACE
   else NORM_SPACE = ROUND((0.33 * RESOLUTION_X * POINT_SIZE)/ DeciPointsPerInch)
```

MAX_SPACE

?6 I '6!3 " 1 & * (7<0HG, " 1) B
&) 1 & & (

?6 I '6!3) B (1 ( )) "
(" " /

```
if (MAX_SPACE undefined) then
   MAX_SPACE = ROUND(1.5 * NORM_SPACE)
```

END_SPACE

3<8I '6!3 " 1 & * (7<0HG, " 1)) "
( )

3<8I '6!3) B (1 ( )) "
(" " /

```
if (END_SPACE undefined) then
   END_SPACE = NORM_SPACE
```

AVG_CAPITAL_WIDTH

6 I!6'706@I57802 " 1 & * (7<0HG, " 1 & "
) (& 1 & (( )) " (
(B & (") ((
" (0 @ @ (@ (
) " 6 &" J 0 & & & (( ) "
& &

6 I!6'706@I57802)))& (1 ( ))
" (" " /

```
if (AVG_CAPITAL_WIDTH undefined) then
   if (capitals exist) then
      AVG_CAPITAL_WIDTH = ROUND (MEAN
           (ABS (width of each capital glyph)) * 10)
           * (if (dominant writing direction L-to-R) then 1 else -1)
   else AVG_CAPITAL_WIDTH undefined
```

AVG_LOWERCASE_WIDTH

6 I@453 !6 3I57802 " 1 & * (7<0HG, " 1 &
") (& 1 & (( )
) " ((B & ("
) ((" (@ ( ) "
&" C 0 & & & (( ) " & &

5 6 I@453 !6 3I57802) B (1
( )) " (" " /

```
if (AVG_LOWERCASE_WIDTH undefined) then
   if (lowercase exists) then
      AVG_LOWERCASE_WIDTH = ROUND (MEAN
                        (ABS (width of each lowercase glyph)) * 10)
       * (if (dominant writing direction L-to-R) then 1 else -1)
   else AVG_LOWERCASE_WIDTH undefined
```

QUAD_WIDTH

K;68I57802 " ")) * (7<0HG, " 1
(F& * ,)

A) & ") (B) * ,) (
" 1 (C * 1)) " , & (
( )) F& ")
(B) 1 &) & ") & & (K;68I57802
) & 1 & ((*(B '7 3@I 7J3,
) F& (1 & & &
7 ; 3I57802 (1 ")) (
*6 3 6 3I57802 6 I!6'706@I57802 6 I@453 !6 3I57802,

FIGURE_WIDTH

7 ; 3I57802 " ")) * (7<0HG, " 1
(& ("& " (& (& " *
F& , @ (& ("& 6) & U
&" #

7 ; 3I57802) B (& ( )) "
(" " /

```
if (numerals and DOLLAR sign are defined & widths are equal) then
   FIGURE_WIDTH = width of DOLLAR
else FIGURE_WIDTH property undefined
```

SUPERSCRIPT_X

;'3 ! 7'0I " 1 & * (7<0HG, " 1)
C ((B (" ( ) &

```
)    B  7(   )&                V =Y     &  )     &   "
 V  O  ;'3  ! 7'0I  =   ;'3  ! 7'0I=Y

;'3  ! 7'0I )      B     (     1      (        ))   "
   (    "  "    /


if (SUPERSCRIPT_X undefined) then
   if (TANGENT(ITALIC_ANGLE) defined) then
      SUPERSCRIPT_X = ROUND((0.40 * CAP_HEIGHT) / TANGENT(ITALIC_ANGLE))
   else SUPERSCRIPT_X = ROUND(0.40 * CAP_HEIGHT)

   06< 3<0      "     ) (& )       &       "   (     "&
    )     -M%  "
```

SUPERSCRIPT_Y

```
;'3  ! 7'0I=       "  1  &  * (    7<0HG,    " 1      )
1   )  ((     B   (                =  "  (     ) &   )
 B  7(   )&                V =Y     &  )     &   "    V  O
;'3  ! 7'0I  =   ;'3  ! 7'0I=Y

;'3  ! 7'0I= )      B     (     1      (        ))   "
   (    "  "    /


if (SUPERSCRIPT_Y undefined) then
   SUPERSCRIPT_Y = ROUND(0.40 * CAP_HEIGHT)
```

SUBSCRIPT_X

```
;A ! 7'0I       "  1  &  * (    7<0HG,    " 1      )
C    ((     B   (                    "  (     ) & )
 B  7(   )&                V =Y     & )     &   "    V  O
;A ! 7'0I  = O  ;A ! 7'0I=Y

;A ! 7'0I  )      B     (     1      (        ))   "
   (    "  "    /


if (SUBSCRIPT_X undefined) then
   if (TANGENT(ITALIC_ANGLE) defined) then
      SUBSCRIPT_X = ROUND((0.40 * CAP_HEIGHT) / TANGENT(ITALIC_ANGLE))
   else SUBSCRIPT_X = ROUND(0.40 * CAP_HEIGHT)
```

SUBSCRIPT_Y

```
;A ! 7'0I=       "  1  &  * (    7<0HG,    " 1      )     1
 )  ((     B   (                =  "  (     ) & )
 B  7(   )&                V =Y     & )     &   "    V  O
;A ! 7'0I  = O  ;A ! 7'0I=Y

;A ! 7'0I= )      B     (     1      (        ))   "
   (    "  "    /
```

```
if (SUBSCRIPT_Y undefined) then
   SUBSCRIPT_Y = ROUND(0.40 * CAP_HEIGHT)
```

SUPERSCRIPT_SIZE

;'3 ! 7'0I 7J3 " 1 & * (7<0HG, " 1)
C ( ) &) & (B 0
" C ( )& (P &)
" (((( )) " ;'3 ! 7'0I ;'3 ! 7'0I=

;'3 ! 7'0I 7J3) B (1 ( )
) " (" " /

```
if (SUPERSCRIPT_SIZE undefined) then
   SUPERSCRIPT_SIZE = ROUND(0.60 * PIXEL_SIZE)
```

SUBSCRIPT_SIZE

;A ! 7'0I 7J3 " 1 & * (7<0HG, " 1)
C ( ) &) & (B 6
;'3 ! 7'0I 7J3 " C ( )& (P
&) " (((( )) " ;A ! 7'0I
;A ! 7'0I=

;A ! 7'0I 7J3) B (1 ( )) "
" /

```
if (SUBSCRIPT_SIZE undefined) then
   SUBSCRIPT_SIZE = ROUND(0.60 * PIXEL_SIZE)
```

SMALL_CAP_SIZE

?6@@I!6'I 7J3 " 1 & * (7<0HG, " 1)
C ( )) & (B)
" " (((" " < ((V =Y
)

?6@@I!6'I 7J3) B (1 ( )) "
(" " /

```
if (SMALL_CAP_SIZE undefined) then
   SMALL_CAP_SIZE = ROUND(PIXEL_SIZE * ((X_HEIGHT
                                + ((CAP_HEIGHT - X_HEIGHT) / 3)) / CAP_HEIGHT))
```

UNDERLINE_POSITION

;<83 @7<3I'4 7074< " 1 & * (7<0HG, " 1)
1) ((B ((& 7(
)& V =Y (" 1 V = O
;<83 @7<3I'4 7074<Y

;<83 @7<3I'4 7074<) B (1 (
)) " (" " /

```
if (UNDERLINE_POSITION undefined) then
   UNDERLINE_POSITION = ROUND((maximum descent) / 2)
```

B &) * , B (
" (

UNDERLINE_THICKNESS

;<83 @7<3I027!><3 " 1 & * (7<0HG, " 1)
&)D B

;<83 @7<3I027!><3) B (1 (
)) " (" " /

```
CapStemWidth = average width of the stems of capitals
if (UNDERLINE_THICKNESS undefined) then
   UNDERLINE_THICKNESS = CapStemWidth
```

STRIKEOUT_ASCENT

0 7>34;0I6 !3<0 " 1 & * (7<0HG, " 1 1)
) (B " 1 " " (7( )& V =Y
" B 3 03<0 & ( ) (D & B V
= 0 7>34;0I6 !3<0Y ") (B V O 3 03<0
= O 0 7>34;0I83 !3<0Y

0 7>34;0I6 !3<0) B (1 ( )
) " (" " /

```
if (STRIKEOUT_ASCENT undefined)
   STRIKEOUT_ASCENT = maximum ascent
```

B &) * 1 , B (
" (

STRIKEOUT_DESCENT

0 7>34;0I83 !3<0 " 1 & * (7<0HG, " 1 1)
) (B " 1 " " (7( )& V =Y
" B 3 03<0 & ( ) (D & B V
= 0 7>34;0I6 !3<0Y ") (B V O 3 03<0
= O 0 7>34;0I83 !3<0Y

0 7>34;0I83 !3<0) B (1 ( )
) " (" " /

```
if (STRIKEOUT_DESCENT undefined)
   STRIKEOUT_DESCENT = maximum descent
```

B &) * , B (
" (

ITALIC_ANGLE

706@7!I6< @3 " 1 & * (7<0HG, " 1 &
" (( ) " -M% " & (" ") &
))D (S))D

706@7!I6< @3) (& (1 ( )) "
(" " /

```
if (ITALIC_ANGLE undefined) then
   ITALIC_ANGLE = (90 * 64)
```

CAP_HEIGHT

!6'I237 20 " 1 & * (7<0HG, " 1 " (
)) ( ) (4;<8 = ( )
"

!) F& !6'I237 20) &) ( ) " ((
(C " (" " B
) 1 (*(B) & (
, !6'I237 20)) ( ) ( ) " & &

!6'I237 20) B (1 ( )) "
(" " /

```
if (CAP_HEIGHT undefined) then
   if (Latin font) then
      CAP_HEIGHT = XCharStruct.ascent[glyph X]
   else if (capitals exist) then
       CAP_HEIGHT = XCharStruct.ascent[some unaccented capital glyph]
   else CAP_HEIGHT undefined
```

X_HEIGHT

I237 20 " 1 & * (7<0HG, " 1 " 1
( ) ") ( ) (
4;<8 = ( ) "

6 !6'I237 20 I237 20 F&))) &)
( ) (C) (B)
1 (&) I237 20)) ( ) ( ) " &
&

I237 20) B (1 ( )) "
(" " /

```
if (X_HEIGHT undefined) then
   if (Latin font) then
```

```
   X_HEIGHT = XCharStruct.ascent[glyph x]
else if (lowercase exists) then
     X_HEIGHT = XCharStruct.ascent[some unaccented lc glyph without an ascender
else X_HEIGHT undefined
```

RELATIVE_SETWIDTH

3@607 3I 3057802 & " " 1 & *(!6 8HG, " 1
) ((1 D ((
( ) ( )) " " S 4;<8 =S .& "

3@607 3I 3057802 " (U #U U (& (& D 0
(" ( ) 1 & (/

U	; (	; (	& D
U	; !	0	(1 " "
GU	3B !		
HU	!	! < !	
%U	!		
U	? &	? & <	"&
MU	3B	3B 8 3B	
U	3B		
$U	3B 3B	3B 3B 5	
#U	; 3B	0 " (1 " "	

3@607 3I 3057802) (& (1 ( )) "
(" " /

```
if (RELATIVE_SETWIDTH undefined) then
   RELATIVE_SETWIDTH = 50
```

) (3@607 3I 3057802) (&)
((S B

)))& ((*
(((") (
(1 ,) & (" " /

```
SETWIDTH = AVG_CAPITAL_WIDTH / (CAP_HEIGHT * 10)
```

3057802 & C "))&

RELATIVE_WEIGHT

3@607 3I537 20 & " " 1 & *(!6 8HG, " 1
) " ((1 D ((( ) (
)) " " S 4;<8 =S .& "

3@607 3I537 20 " (U #U U (& (& D 0
(" ( ) 1 & (/

U	; (	; (& D
U	; @ "	0 ("
GU	3B @ "	
HU	@ "	
%U	@ "	@ " A D
U	? &	? & < "&
MU	A	A 8 A
U	A	
$U	3B A	3B A 2 1
#U	; A	; A A)D " ("

3@607 3I537 20) (& (1 ( )) "
(" " /

```
if (RELATIVE_WEIGHT undefined) then
   RELATIVE_WEIGHT = 50
```

) (3@607 3I537 20) (&) (
(S " B

WEIGHT

!)& 537 20 & " " 1 & * (!6 8HG, " 1
))& " (( ) & ( )
!6'I237 20 " U UUU U " "

537 20)))& (& ( )) " (
" " /

```
CapStemWidth = average width of the stems of capitals
if (WEIGHT undefined) then
   WEIGHT = ROUND ((CapStemWidth * 1000) / CAP_HEIGHT)
```

6))& 1 & (")) "(((((
) & 3@607 3I537 20 537 20I<6?3 "
( ) &)) ")) (
& .) 1 !)& 537 20 1 ((
(" ") ((1

RESOLUTION

3 4@;074< " 1 & * (7<0HG, " 1 & ( )
( ) & - UU B

6 C 1) " &)
F&)) F&) & (
( ) 3 4@;074<I
3 4@;074<I= ((- 1 (*)
H G # H G U,)) & ") & & (
3 4@;074<) & " & =
& F&

FONT

4<0 " * (604?, " 1 (& @ 8 ((
1 &) &) ((

7(1 4<0)))&

FACE_NAME

6!3I<6?3 & & " * (604?, " 1 (&
1) ( )) & " "
& & C 0 & ( )D
& " ( )

6!3I<6?3)))& B (1 (

FULL_NAME

;@@I<6?3 6!3I<6?3 7 &) & (&
(

COPYRIGHT

!4'= 7 20 & & " * (604?, " 1)
" ((" (" (

0 (F&) ((& ( )
& (& *)) &)
) & ((( )) ,

!4'= 7 20)))& B (1 (

NOTICE

<407!3 & & " * (604?, " 1) "
((" ((" ( ) D
((( ) 6?7@=I<6?3

0 ( ) " D) 1 ( ) &) &
; 6 1 " ") "))& 1 &) & 3&

((" ( ) (D) 6
!4'= 7 20 (F&) ((&
( )& (&

<407!3)))& B (1 (

DESTINATION

83 07<6074< & " ") * (!6 8HG, " 1 (
" ") (" (
) (" *5= 75= , 1 (*
) " (, (B) 1 " *1 B ,

0 (") 1 (( )& &
" (D ( ) (1 ((
83 07<6074< & ") & "
1 B) &))& F& ( )
(&)& F&

0) " (/

U 5= 75=	0 (C) ") ") (F& 1 (
B	0 (C ( ) "

FONT_TYPE

4<0I0='3 & & " * (604?,)
((((")& (
&) 7) & (&) 7) &))
(& (& " C &
(

' (1 & (/

+A +	2 & (C 1 &) (((F& C &
+' & +	6 (( )) +A + & B ((")) & ") (C &) +' & + +A +
+0 +	6 0 (
+0 & 0 +	6 0 & 0 (
+ +	6 (
+ H+	6 H (

4 1 & " ! &

FONT_VERSION

4<0I 3 74< & & " * (604?,)
((1 ((None 1 1 &

RASTERIZER_NAME

6 03 7J3 I<6?3 & & " * (604?,
) ( ) (C (C
* &)) " (& , (

0 (6 03 7J3 I<6?3 (" ( ) /

C 4 " C 7) C
< //Q
4 " C 7 //Q 0 7< $[" 4 6<7J6074< (
C
C //Q) 1 & & &) (
C 5 &
" '6!3
) //Q 4!030\+ + * '6!3,

3B /

```
X Consortium Bit Scaler
X Consortium Type 1 Rasterizer
X Consortium Speedo Rasterizer
Adobe Type Manager
Sun TypeScaler
```

7(6 03 7J3 I<6?3 (None C
4<0I0='3

RASTERIZER_VERSION

6 03 7J3 I 3 74< & & " * (604?,
((1 ((C 0
6 03 7J3 I 3 74< &)) " &) 1 &
D &)

RAW_ASCENT

((B 65I6 !3<0 ( ) UUU
B) * ?) ' ,

RAW_DESCENT

((B 65I83 !3<0 ( ) UUU
B) * ?) ' ,

RAW_*

((B (C
1) C)))
" B) (B + 65I+) &) ?)
'

AXIS_NAMES

6 7 I<6?3 ((B ( ) (
& *U, 0 & (& ( ) *
) M,

AXIS_LIMITS

6 7 I@7?70 (" ( ) B " 1 " & B
& 1 & (B ( ) (* ,

AXIS_TYPES

6 7 I0='3 D 6 7 I<6?3 &) " 1 ") ( )
) *) M,

Built-in Font Property Atoms

0 (" (((1
( )) /

!"	
?7<I '6!3	7<0HG
<4 ?I '6!3	7<0HG
?6 I '6!3	7<0HG
3<8I '6!3	7<0HG
;'3 ! 7'0I	7<0HG
;'3 ! 7'0I=	7<0HG
;A ! 7'0I	7<0HG
;A ! 7'0I=	7<0HG
;<83 @7<3I'4 7074<	7<0HG
;<83 @7<3I027!><3	7<0HG
0 7>34;0I6 !3<0	7<0HG
0 7>34;0I83 !3<0	7<0HG
4<0I6 !3<0	7<0HG
4<0I83 !3<0	7<0HG
706@7!I6< @3	7<0HG
I237 20	7<0HG

!"	
K;68I57802	7<0HG \ )
537 20	!6 8HG
'47<0I 7J3	7<0HG
3 4@;074<	!6 8HG \ )
!4'= 7 20	604?
;@@I<6?3	604? \ )
6?7@=I<6?3	604?
83 6;@0I!26	!6 8HG

Chapter 4. Matrix Transformations

6 @ 8 1) 1 '47<0I 7J3 '7 3@I 7J3
(")) +V+ 7(( )) ((+V+))
& (6 !77 ((& (" &
" +Y+) " &)
" & (+V+ +Y+)) <& & ("
B & &)) +X+ & "
B

0 A< (B (" (/

? B " //Q @ (A)D 4)))
) 4) " A)D
4) //Q ++ R)
) //Q) ! R) !)
//Q ? R ? 3B
? //Q " <& R <&
" //Q ' & R 0
<& //Q 7 " R 7 " 8 7 " R 8 7 "
7 " //Q 8 " R 8 " 7 "
8 " //Q +U+ R + + R +G+ R +H+ R +%+ R + + R +M+ R + + R +$+ R +#+
3B //Q + + " 7 " R +3+ " 7 "
" 7 " //Q " 7 " R 7 "
@ (A)D //Q 4!030 \ +V+ *@3 0 K;6 3 A 6!>30,
" A)D //Q 4!030 \ +Y+ * 7 20 K;6 3 A 6!>30,
) ! //Q 4!030 \ + + * '6!3,
0 //Q 4!030 \ +]+ *07@83,
' & //Q 4!030 \ +O+ *'@; ,
8 //Q 4!030 \ + + * ;@@ 04',

0 " +V) Y+ ") ((" (
B

V U Y
V) U Y
V U U Y

6 ( ))& & " (" 0
)&) 1 & B (1 &)
1 & +<+ '47<0I 7J3 (&) " B +V<- U
U U <- UY+ ( ) 1 & +<+ '7 3@I 7J3 (&)
" B +V<L 3 4@;074<I - 3 4@;074<I= U U <Y+
(

7( )) (('47<0I 7J3 '7 3@I 7J3 &
(")) ( )
) /

'7 3@I 7J3I?60 7 Q V B U U Y L '47<0I 7J3I?60 7

B Q 3 4@;074<I - G G

Q 3 4@;074<I= - G G

7('47<0I 7J3 '7 3@I 7J3 (&) (* +U+)
,) " (&) &) & (

Metrics and Font Properties

7) + UUU B) +) &
(C D & (" & "
(( ) " (UUU B
) < ( )) & F&
( ) C & ((& C) F&
C (& " ((

<) /

0) D) * " ")) , D
B ((" & "

0) B) (( ))

0 ( ))) ((( )
)

0 4<0 & ( ) " B " &
&) &) ((0 &
) B)) (F& 7((B
& F&

-misc-fixed-medium-r-normal--0-[2e1 0 0.0 +10.0]-72-72-c-0-iso8859-1

& " 4<0 "

-misc-fixed-medium-r-normal--[19.9 0 0 10]-[20 0 0 10]-72-72-c-0-iso8859-1

0 4<0) &) '7 3@I 7J3
'47<0I 7J3 (

0))&) " (( )) & (
(! 7 ( ) ( )) UUU B) 0
& (& " "

0 G ((65I6 !3<0
65I83 !3<0)) UUU B)

6 (C) 1
1 & B) (( ) 6 (
1) ") 1 1 &)

((") 3) &)))
" B) (B + 65I+ " 1
1 & (") UUU B)

Chapter 5. Scalable Fonts

0 @ 8 " &) (6) ((&) (
)) (C) 1 6) (&) "
& " C & ( ) ( )
C & " ")) " C
((* 1 .& " (,

0 (" (& (& ( )& ") (/

Well-formed XLFD pattern

N # $

6 ") " % ( ) ( )) (
5))) (((@ 8

N Scalable font name

6 (@ 8) ")) " " +U+
'7 3@I 7J3 '47<0I 7J3 6 3 6 3I57802 (

N Scalable fields

0 @ 8 ('7 3@I 7J3 '47<0I 7J3 3 4@;074<I 3 4@;074<I=
6 3 6 3I57802

N Derived instance

0 & ( ) ") (((1 &
( ) &) & &) ((&) 6) " "
& F&) ((
&)) "

N Global list

0 (& & 1 (ListFonts
) F& +L+ ( ))
& (&

0 ") ((1 ((&) 7(" (
&)) & &)) *) (!26 30I 3 7 0 =
!26 30I3<!487< (,) &))) & & (
(( ) (&) (
( )))) & ") (&)
) (( )))) & 7
) ( ) ( ) 1)) &
0 1 (1))) (
) ( ) & 0 1
( ) ( )

0 1 & (3 4@;074<I 3 4@;074<I= (( ) (
& B C)D)
& C 1 & (B &)

1) * ") 1 , A) & B ")
")) (B C 1 1 "
) & " 1) ( ) & " ( ))
(( ) ( ) 1) (&))
)) (& ( ) & " ( )
") &(( )

0) F& OpenFont) (& ( )
" 1) ((

0) F& ListFonts (@ 8 & (
" " " ( ) & "& 1 &)
")) (& &) &) ( )
"( )) ( ) & "(
(") ( )) 1 & &) 1
) 1 ((< D (
( ) " "& ListFonts &
& "

B "1 " /

```
-Linotype-Times-Bold-I-Normal--0-0-100-100-P-0-ISO8859-1
-Linotype-Times-Bold-R-Normal--0-0-100-100-P-0-ISO8859-1
-Linotype-Times-Medium-I-Normal--0-0-100-100-P-0-ISO8859-1
-Linotype-Times-Medium-R-Normal--0-0-100-100-P-0-ISO8859-1
```

ListFonts F& /

```
-*-Times-*-R-Normal--*-120-100-100-P-*-ISO8859-1
```

& & /

```
-Linotype-Times-Bold-R-Normal--0-120-100-100-P-0-ISO8859-1
-Linotype-Times-Medium-R-Normal--0-120-100-100-P-0-ISO8859-1
```

ListFonts) ") (@ 8
F& & (")
" " 1 & F& &
)) " "

Chapter 6. Polymorphic Fonts

) 1 C &)
! ?& ? 0 (" ( ) (
!& B (B ") ( ) 1 "
) C P ") & (B "

0 &) ( ) 1 &) " 1 ((
(" @ 8 (/

537 20I<6?3

@6<0

3057802I<6?3

688I 0=@3I<6?3

0 " +U+)) 1 & 7 537 20I<6?3 @6<0
3057802I<6?3 (+U+ & (0 &
) 1 & 688I 0=@3I<6?3 (0 & & +V+
+Y+) +VUZUUY+ 0) 1 &) B
(7)) 1 &
(688I 0=@3I<6?3 (

0 ( ) " " (( ) ( )
) " " (( ) (

0 ( ) B (1 6 7 I<6?3
6 7 I@7?70 6 7 I0='3 6 7 I<6?3 ((B
((& *U, 0 & (
& ( ) 6 7 I@7?70 (" ( ) B " 1
" & B & 1 & (B 6 7 I0='3 D
6 7 I<6?3 &) " 1 ") ( ))

0 B (
0) ((D "( ))
1 & (

3B /

0 6 ? ?? (" " B 5 ") 1
(G $HU (HUU UU

```
Name:
        -Adobe-Myriad MM-0-R-0--0-0-0-0-P-0-ISO8859-1
AXIS_NAMES:
        Weight, Width
AXIS_LIMITS:
        215, 830, 300, 700
AXIS_TYPES:
        Adobe-Weight, Adobe-Width
Sample derived instance:
        -Adobe-Myriad MM-412-R-575--*-120-100-100-P-*-ISO8859-1
```

0 6 ? ??7)(" ") C B

```
Name:
        -Adobe-Minion MM-0-I-0-[0]-0-0-0-0-P-0-ISO8859-1
AXIS_NAMES:
        Weight, Width, Optical size
AXIS_LIMITS:
        345, 620, 450, 600, 6, 72
AXIS_TYPES:
        Adobe-Weight, Adobe-Width, Adobe-OpticalSize
Sample derived instance:
        -Adobe-Minion MM-550-I-480-[18]-*-180-100-100-P-*-ISO8859-1
```

0 6 ? ?? 7)(" B 1 &
0 +VUY+ 688I 0=@3I<6?3( )) B

```
Name:
        -Adobe-Minion MM-0-I-0-Swash[0]-0-0-0-0-P-0-ISO8859-1
AXIS_NAMES:
        Weight, Width, Optical size
AXIS_LIMITS:
        345, 620, 450, 600, 6, 72
AXIS_TYPES:
        Adobe-Weight, Adobe-Width, Adobe-OpticalSize
Sample derived instance:
        -Adobe-Minion MM-550-I-480-Swash[18]-*-180-100-100-P-*-ISO8859-1
```

0 =J6)( ) ( ) C B " B 0
))1 & 688I 0=@3I<6?3(

```
Name:
        -XYZ-Abc-Medium-R-Normal-[0 0]-0-0-0-0-P-0-ISO8859-1
AXIS_NAMES:
        Optical size, X-height
AXIS_LIMITS:
        6, 72, 400, 600
AXIS_TYPES:
        XYZ-OpticalSize, XYZ-Xheight
Sample derived instance:
        -XYZ-Abc-Medium-R-Normal-[14 510]-*-140-100-100-P-*-ISO8859-1
```

7(B " 1 1 &) F& " 1 1 & & "
+X+ *07@83, & "

6B) " ! & ")

7(( ))1 &))
((&) (&) (& & 1 &
) 1 2 1 (&) & & 1 & &
) ( )& (B ( ) C
1 & 1 (&) & 1 1 &
C ((

0 & ( ) (" & (" 1 & ( ) (& (
0 (&) BadName 1 & (
) " 1 & B)) 1 &

Chapter 7. Affected Elements of Xlib and the X Protocol

0 (") F& & & @ 8) 1 /

N OpenFont ("&

N ListFonts ("&

N ListFontsWithInfo ("&

7 (" (&) & & @ 8) 1 /

N XLoadFont ("&

N XListFontsWithInfo ("&

N XLoadQueryFont ("&

N XListFonts ("&

Chapter 8. BDF Conformance

0 (&) " (! &
*A8 G , 1 ") ((" ((
(1 ((& B
) (( ) (("
1 A8 (0) (F& (A8 (
) (@ 8

XLFD Conformance Requirements

6 A8 ( ) (@ 8) ( ) (((")
(/

N 0 1 & (A8 FONT) (B) (
(@ 8 FontName "

N 0 FontName " FontNameRegistry (B/++

N 6 @ 8 FontName ((

N 6 ' 1) ( ) @ 8 Font-
Property (

6 ("( ) ( ) & 1 (" Font-
NameRegistry (B "++ & (("
) (1 & 1) ( )
@ 8 (((1

FONT_ASCENT, FONT_DESCENT, and DEFAULT_CHAR

4<0I6 !3<0 4<0I83 !3<0 83 6;@0I!26 1 A8
) ( ) 1 XFontStruct A8 ( )
" " 1) ( ) ( ) " 7(
) (") (

FONT_ASCENT

4<0I6 !3<0 " 1 & * (7<0HG, " 1)
")) 1 (") ") ( )
" ((B 7( )& (
V =Y " (B ″ # $ * " ((
) ", V = O 4<0I83 !3<0 O 4<0I6 !3<0 Y

4<0I6 !3<0) B (1 ( )) "
(" " /

```
if (FONT_ASCENT undefined) then
   FONT_ASCENT = maximum ascent
```

B &) B &) * 1 , B (
" (

FONT_DESCENT

4<0I83 !3<0 " 1 & * (7<0HG, " 1)
")) (") ") ( )
" ((B 7( )& (
V =Y " (B ″ #$ * " ((
) ", V = O 4<0I83 !3<0 O 4<0I6 !3<0 Y

0 ") B (( ) & 1 =) 1 & / =
4<0I6 !3<0 = O 4<0I83 !3<0 O

4<0I83 !3<0) B (1 ( )) "
(" " /

```
if (FONT_DESCENT undefined) then
   FONT_DESCENT = maximum descent
```

B &) B &) * , B (
" (

DEFAULT_CHAR

0 83 6;@0I!26 & " " 1 & * (!6 8HG,) (
B ((&)) & 1
& (B)) (* (& "
G B (B) " L M HM O
G , 7(83 6;@0I!26 ( ) (& (B))
((

83 6;@0I!26) B (1 (