中国民用航空总局

182

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A

36.1

(a)

(1)

8618 19000

610

(2)

(10) B B36.5 (d)

(11) 2002 3 21
16 I 7 4 4.4
(g)

(h)

(1) H H36.305
J J36.305

(2)
J J36.305

(3) H
H36.305 J J36.305

(4) H H36.305
( ) J
J36.305
(5)

[2007 4 15]

36.2
(a) 21 21.17
5
5

(b) 21 21.101 21.93

5
5

(c)

(1)
(2)
(3)
[2007 4 15]

36.3

36.5

36.6

(a)

(b)

(1) (c)

(2)

(c)

(1) (IEC)

(i) IEC 179 1973

(ii) IEC 225
1966

(iii) IEC 651 1979

(iv) IEC 561 1976

(v) IEC 804 1985

(vi) IEC 61094-3 3
1.0 1995

(vii) IEC 61094-4 4
1.0 1995

(viii) IEC 61260
1.0 1995

(ix) IEC 61265
1.0 1995

(x) IEC 60942 2.0 1997

(2) (SAE)

(i) SAE ARP866A
1975 3 15

(3) 16 I
1993 7 2002 3 21 7
[2007 4 15]

36.7

(a)

(CCAR-21)

(b)

(1) A

(2) B B36.7 B36.8 B

B36.5

(c) (b)

(1) ,

B B36.6

(2)

(i)

(ii)

(d) (b)

(1) 2

(i)

(A) 3EPNdB

(B)

(ii) B B36.6

3EPNdB ( )

(iii)

(2) 2

(i)

(ii)

(e) (b)

(1) [ ]

(2)

(3) [ ]

(4)

(f)

[2007 4 15]

36.9

(CCAR-21)

(a)
36.501
(b)

(1) 36.501
(2) 36.501

36.11

(CCAR-21)
H 3175 7,000
J
(a)

(1) H B C
3175 7,000
J J
J B C
(2) H D H H36.305
J D
J J36.305
(b) 36.805 (c)
H H36.305 (a)(1)
H36.305 (b)
J
J J36.305 (a)
(c)

[2007 4 15]

B

36.101

A

[2007 4 15]

36.103
(a) A
B B36.8 (

)

(b) 2006 1 1

B B36.5(c)

(c) 2006 1 1

B B36.5(d) 2006 1 1

36.7

(f)

[2007 4 15]

CCAR-36 CCAR-36

CCAR-36 B

2002

3 21 16 I 2 7 4

[2007 4 15]

C]

[2007 4 15]

D]

E]

F 章 螺旋桨小飞机和螺旋桨通勤类飞机

36.501

(a)

(1)

(2) [ ]

(3)

(i) (a)(3)(ii)

F G

(ii)

(A) (B)

(C) (D) F

G (E)

(b) 1988 11 17
F B C
F D

(c) 1988 11 17
G B C
G D

G 章 ［备用］

H 章 直升机

36.801

H B

3175 7,000
J J B

[2007 4 15]

36.803

36.801 H
H A H C
36.801 J
J A J C

36.805

(a) 36.11 (b)
H D
J D

(b) (d)(2)
H H36.305

J J J36.305

(c) [ ]

(d)

(1) (d)(2) H

H

(2)

(i)

(ii)

(iii)

(iv) H

(v)

I～N 章 ［备用］

O 章 文件、使用限制和资料

36.1501

(a)

( )

(b)

36.1581

(a)

36.1583

(1) B

(2) G

(3) H

J

(b)

36.1581 (a)

(c)

(d)

(e) F

G

(f)

(CCAR-27)
27.25 (a) (CCAR-29) 29.25 (a)

(g) (d) (e) (f)

36.1583

(a)

(b) 36.1581

(CCAR-36)

[2007 4 15]

36

A 36.101

A36.1

A36.2

A36.3

A36.4

A36.5

A36.6

A36.7

A36.8

A36.9

A36.1

A36.1.1 36.101 36.803
EPNL

A36.1.2

A36.1.3

A36.1.4 16 I 2002 3
21 7 2

A36.2

A36.2.1

A36.2.1.1

A36.2.2

A36.2.2.1

80°

A36.2.2.2

(a)

(b) 10 (33) -10℃ 35℃ 14℉ 95℉ 20 95

(c) 10 33 8kHz 12dB/100

(1) ±0.5℃ ±0.9℉ A36.2.2.3

(2) PNLT 400Hz

(d) 10 (33) 3150Hz PNLTM ±0.5dB/100 ±1.6dB/1000 A36.2.2.3

10 33 PNLTM

(e) 10 33 22 / 12 13 / 7 30 10dB 10 10dB 28 / 15 18 / 10

(f)

(g) 30

A36.2.2.3 A36.2.2.2(c) A36.2.2.2(d) 10 33 30 100 3150Hz ±0.5dB/100 ±1.6dB/1000 PNLTM

A36.2.2.4

A36.2.3

A36.2.3.1

A36.2.3.2 PNLT 10dB

A36.2.3.3 A36.9

A36.3

A36.3.1

A36.3

A36.3.1.1

/

A36.3.1.2

A36.3.1.3 IEC61094-3 IEC61094-4

0° 90°

A36.3.1.4 0

A36.3.1.5

/

A36.3.1.6 20 10

1 / dB

dB

1V dB 20μPa 93.98dB

A36.3.1.7 dB

20μPa 10

10

A36.3.1.8 dB

A36.3.1.9

dB

A36.3.1.10 dB

A36.3.1.11 Hz

A36.3.1.12 dB

A36.3.1.13 dB

A36.3.1.14

dB

A36.3.1.15

dB

A36.3.1.16

dB

A36.3.2

A36.3.2.1

(a) 23℃ 73.4℉

(b) 101.325

(c) 50%

A36.3.3

A36.4

A36.3.3.1

(a) (A36.3.4)

(b) (A36.3.5)

(c) A36.3.6

(d) (A36.3.7)

(e) (A36.3.8)

A36.3.3.2 12.5kHz

50dB

28kHz

A36.3.4

A36.3.4.1

50Hz 10kHz

±1.5dB

A36.3.5

A36.3.5.1 A36.3.5.2 A36.3.5.4

A36.3.9

A36.3.5.2 1.2 4

A36-1

A36.3.5.3 50Hz 5kHz

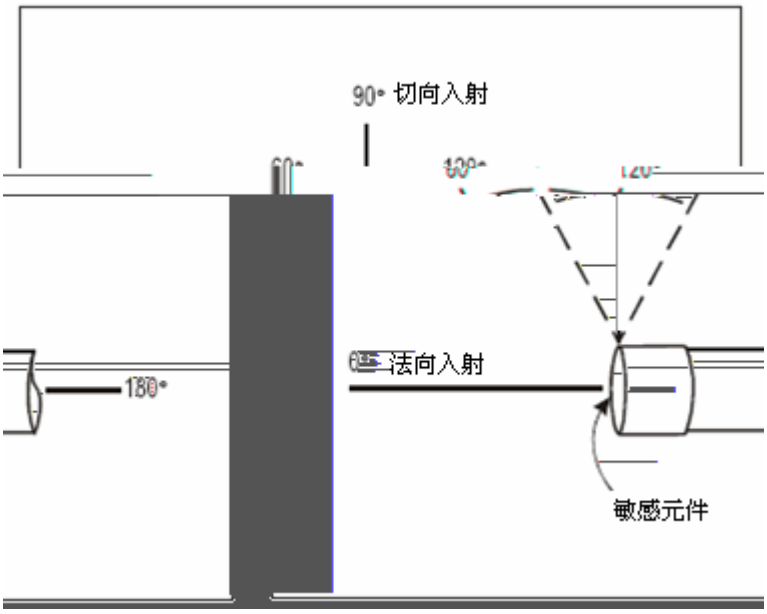
±1.0dB

6.3kHz 8kHz 10kHz ±2.0dB

A36.3.5.4 50Hz 10kHz

30° 60° 90° 120° 150° 0°

A36-1 A36-1



A36-1

中心频率 (kHz)	传声器系统法向入射时的自由场灵敏度级与特定声入射角的自由场灵敏度级之间的最大差值 (dB)				
	声入射角 (度)				
	30	60	90	120	150
0.05 to 1.6	0.5	0.5	1.0	1.0	1.0
2.0	0.5	0.5	1.0	1.0	1.0
2.5	0.5	0.5	1.0	1.5	1.5
3.15	0.5	1.0	1.5	2.0	2.0
4.0	0.5	1.0	2.0	2.5	2.5
5.0	0.5	1.5	2.5	3.0	3.0
6.3	1.0	2.0	3.0	4.0	4.0
8.0	1.5	2.5	4.0	5.5	5.5
10.0	2.0	3.5	5.5	6.5	7.5

A36-1

A36.3.6

A36.3.6.1

/

A36.3.6.2 A36.3.6.9

A36.3.6.2 A36.3.9

(a)

800Hz

10kHz 800Hz

20dB

A36.3.6.3

5dB

50Hz 10kHz

±1.5dB 10kHz 11.2kHz

10kHz ±0.3dB

A36.3.9.5

A36.3.6.4 5dB 1kHz

±0.5dB

A36.3.6.5

50Hz 1kHz 10kHz

50dB ±0.5dB

1 IEC 61265

2

A36.3.6.6 5dB

30dB

A36.3.6.7 50dB

10dB 1dB 10dB

40dB 1dB 49dB

A36.3.6.8

A36.3.6.9

A36.3.7

A36.3.7.1 A36.3.7.2 A36.3.7.7

A36.3.7.2

(a) 24 50Hz 10kHz

(b)

(c) 500±5 A36.3.7.4

(d)

5ms

(e) 50Hz 12kHz

A36.3.7.3 50Hz 10kHz

IEC 61260 2

IEC 61260

A36.3.7.4

0.5 1 1.5 2

0.5 1

0.5 -4±1dB

1 -1.75±0.75dB

1.5 -1±0.5dB

2 0.5-±0.5dB

0.5 1

-6.5±1dB -7.5dB 1

2

A36.3.7.5

$$L_s\ i,k \quad 10\log\ 0.60653\ 10^{0.1L_s\ i,\ k\ 1}\quad 0.39347\ 10^{0.1L\ i,k}$$

$L_s(i,k)$ $L(i,k)$ 0.5

k i k =1

$L_s[i,(k\ \ 1=0)]$ 0dB

k 4

$$L_s\ i,k \quad 10\log\ 0.13\ 10^{0.1L\ i,\ k\ 3}\quad 0.21\ 10^{0.1L\ i,\ k\ 2}\quad 0.27\ 10^{0.1L\ i,\ k\ 1}\quad 0.39\ 10^{0.1L\ i,k}$$

$L_s(i,k)$ $L(i,k)$ 0.5

k i

1.0 6 0.5

2.5

0.5

0.5

A36.3.7.6 0.75

0.5 2

1.25

A36.3.7.7 0.1dB

A36.3.8

A36.3.8.1

IEC 60942 1L

A36.3.9

A36.3.9.1

A36.3.9.2 A36.3.9.10

A36.3.9.2

90

A36.3.9.3 ±30° A36-1
0.5

A36.3.9.4 30
10kHz
0.75dB
A36.3.9.5
50Hz
10kHz 5dB
6
0.2dB

A36.3.9.6
6 0.1dB
A36.3.9.7

6
0.2dB
A36.3.9.8

0.5dB 0.5dB

A36.3.9.9
10
A36.3.9.10 50Hz 10kHz
A36.3.9.3
30°
6

0.4dB

A36.3.10
A36.3.10.1
10
PNL A36.4.1.3(a)
PNL 20dB
A36.3.10.2 10dB (A36.4.5.1)
A36.3.10.1 3dB

A36.4

A36.4.1

A36.4.1.1 (EPNL) EPNdB

EPNL

PNL

A36.4.1.2

EPNL 0.5 24

A36.4.1.3 EPNL

5

(a) A36.4.2.1(a) 24

PNL(k)

(b)

$C(k)$

(c) 0.5

PNLT(k)

PNLT k PNL k C k

PNLTM

(d) D

(e) EPNL

EPNL PNLTM D

A36.4.2

A36.4.2.1 PNL(k) SPL(i,k)

(a) A36.4.7 50Hz 10kHz

SPL(i,k) $n(i,k)$

(b) $n(i,k)$

$$N\ k \quad n\ k \quad 0.15 \sum_{i\ 1}^{24} n\ i,k \quad n\ k$$

$$0.85\, n\ k \quad 0.15 \sum_{i\ 1}^{24} n\ i,k$$

$n(k)$ 24 $n(i,k)$ $N(k)$

(c) $N(k)$ PNL(k)

$$\mathrm{PNL}\ k \quad 40.0 \quad \frac{10}{\log 2} \log N\ k$$

PNL(k)

A36.4.3

A36.4.3.1

$C(k)$

(a) A36.3.9 80Hz

$s\ 3,k$

$s\ 4,k$ SPL $4,k$ SPL $3,k$

g

g

$s\ i,k$ SPL i,k SPL $i\ \ 1,k$

g

g

$s\ 24,k$ SPL $24,k$ SPL $23,k$

(b) 5 $s(i,k)$

$\left| s\ i,k \right|$ $\left| s\ i,k \quad s\ i\ \ 1,k \right|$ 5

(c)

(1) $s(i,k)$ $s(i\ \ 1,k)$ SPL(i,k)

(2) $s(i,k)$ $s(i\ \ 1,k)$ SPL$(i\ \ 1,k)$

(3)

(d) SPL i,k

(1) SPL i,k SPL i,k

(2) 1 23

SPL i,k $\frac{1}{2}$ SPL $i\ \ 1,k$ SPL $i\ \ 1,k$

(3) (i=24)

SPL SPL $23,k$ $s\ 23,k$

(e) 25 $s\ \ i,k$

$s\ 3,k$ $s\ 4,k$

$s\ 4,k$ SPL $4,k$ SPL $3,k$

g

g

$s\ i,k$ SPL i,k SPL $i\ \ 1,k$

g

g

$s\ 24,k$ SPL $24,k$ SPL $23,k$

$s\ 25,k$ $s\ 24,k$

(f) i 3 23

$\overline{s}\ i,k \quad \frac{1}{3}\ s\ i,k \quad s\ i\ 1,k \quad s\ i\ 2,k$

(g) 3 24

SPL i,k

SPL $3,k$ SPL $3,k$

SPL $4,k$ SPL $3,k$ $\overline{s}\ 3,k$

g

g

SPL i,k SPL $i\ 1,k$ $\overline{s}\ i\ 1,k$

g

g

SPL $24,k$ SPL $23,k$ $\overline{s}\ 23,k$

(h) $F(i,k)$

$F\ i,k$ SPL i,k SPL i,k

1.5

(i) $F(i,k)$ A36-2 3 24

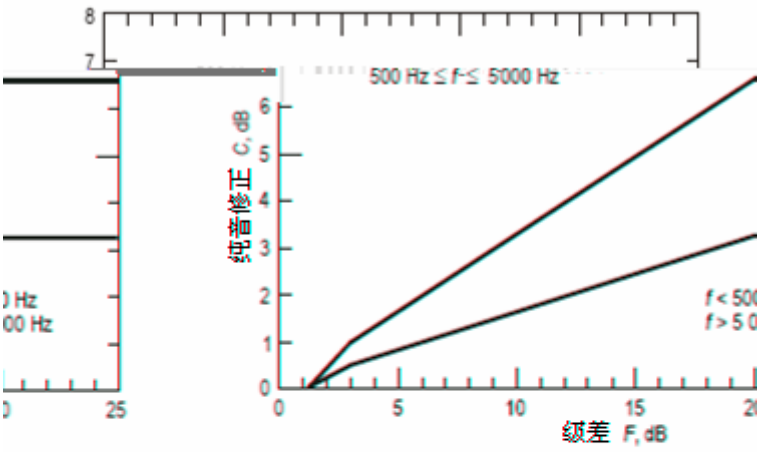
(j) $C(k)$

$C(k)$ PNL(k)

PNLT k PNL k $C\ k$

k i

SPL i,k



纯音修正 *C*, dB	频率 *f*, Hz	级差 *F*, dB
F/3 — ½ *F*/6 3⅓	50 ≤ *f* < 500	1½* ≤ *F* < 3 3 ≤ *F* < 20 20 ≤ *F*
2 *F*/3 — 1 *F*/3 6⅔	500 ≤ *f* ≤ 5 000	1½* ≤ *F* < 3 3 ≤ *F* < 20 20 ≤ *F*
F/3 — ½ *F*/6	5 000 < *f* ≤ 10 000	1½* ≤ *F* < 3 3 ≤ *F* < 20

A36-2

A36.4.3.2

EPNL

(a)

(b)

A36.4.4

A36.4.4.1 PNLTM A36.4.3

PNLT(*k*) 0.5

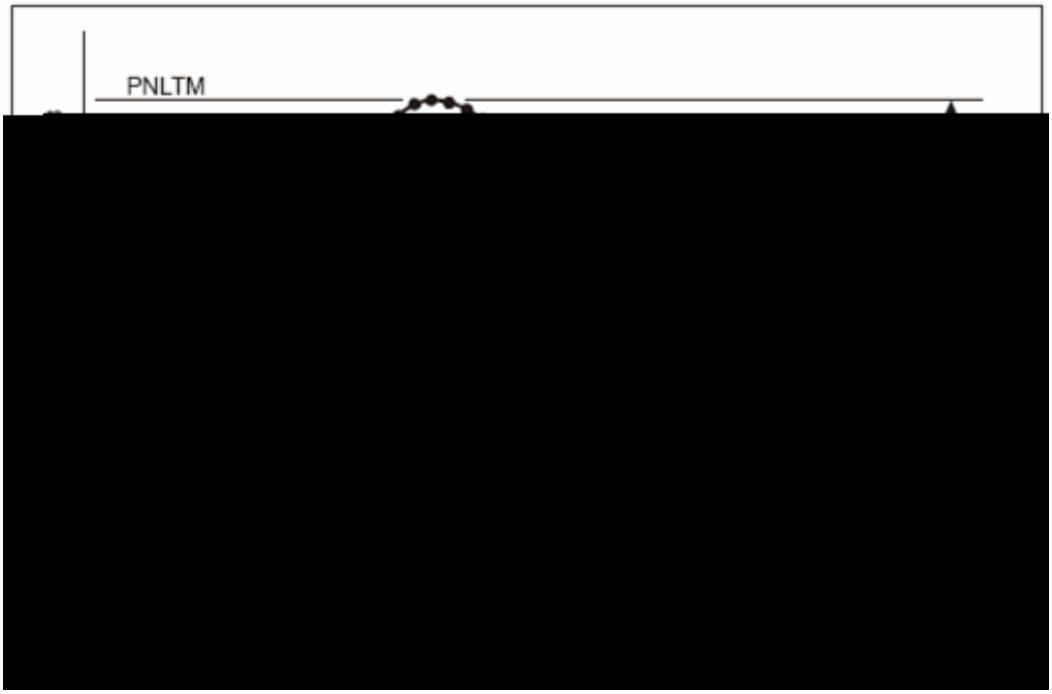
1 A36-2

2 PNLTM PNLM

A36.4.4.2 PNLTM 500

PNLTM PNLTM *C*(*k*) 5

C(*k*) *C*(*k*) PNLTM



A36-2

A36.4.5

A36.4.5.1 D

$$D \quad 10\log \quad \frac{1}{T} \quad \int_{t(1)}^{t(2)} \text{anti}\log\frac{\text{PNLT}}{10}\,dt \quad \text{PNLTM}$$

T PNLTM PNLT $t(1)$ PNLT PNLTM–10 $t(2)$ PNLT PNLTM–10

A36.4.5.2 PNLT SPL

$$D \quad 10\log \quad \frac{1}{T} \quad \sum_{k\ 0}^{d/\ t} \quad t \ \text{anti}\log\frac{\text{PNLT}\ k}{10} \quad \text{PNLTM}$$

t PNLT(k) d 0.5 PNLT(k) PNLTM–10

A36.4.5.3

(a) Δt 0.5

(b)

A36.4.5.4 A36.4.5.2 D T Δt T=10 Δt 0.5 D

$$D \quad 10\log \quad \sum_{k\ 0}^{2d} \text{anti}\log\frac{\text{PNLT}\ k}{10} \quad \text{PNLTM} \quad 13$$

d PNLTM–10

A36.4.5.5 A36.4.5.2 PNLTM–10 PNLT(k)

PNLTM–10 PNLT(*k*)

PNLT(*k*)

A36.4.6

EPNL EPNL

PNLTM *D*

EPNL PNLTM *D*

PNLTM *D* A36.4.2 A36.4.3 A36.4.4 A36.4.5

A36.4.7

A36.4.7.1 SPL A36-3 A36-3

A36.4.7.2

(a) *M*(*b*) *M*(*c*) *M*(*d*) *M*(*e*)

(b) SPL SPL(*b*) SPL(*c*)

(c) SPL(*a*) $\log n$ (*a*) SPL(*d*) $\log n = -1.0$ SPL(*e*) $\log n = \log(0.3)$

A36.4.7.3

(a) SPL SPL *a*

n anti log *M c* SPL SPL *c*

(b) SPL *b* SPL<SPL *a*

n anti log *M b* SPL SPL *b*

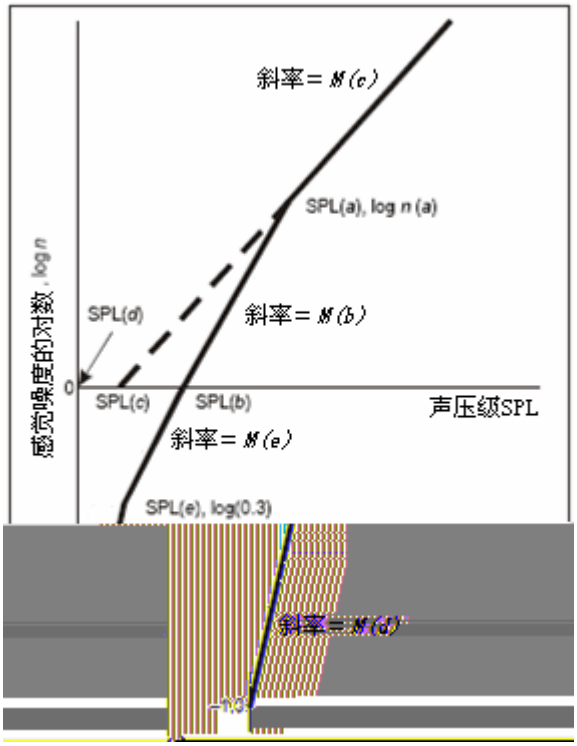
(c) SPL *e* SPL<SPL *b*

n 0.3anti log *M e* SPL SPL *e*

(d) SPL *d* SPL<SPL *e*

n 0.1anti log *M d* SPL SPL *d*

A36.4.7.4 A36-3



A36-3

频带 (i)	f Hz	SPL (a)	SPL (b)	SPL (c)	SPL (d)	SPL (e)	M(b)	M(c)	M(d)	M(e)
1	50	91.0	64	52	49	55	0.043478	0.030103	0.079520	0.058098
2	63	85.9	60	51	44	51	0.040570		0.068160	"
3	80	87.3	56	40	30	46	0.03683[illegible]		"	[illegible]
134	4	100	79.0	53	47	34	42	"		0.059640	0.0475
173	5	125	79.8	51	46	30	39	0.035336		0.053013	0.0435
	6	160	76.0	48	45	27	36	0.033333			"
121	7	200	74.0	46	43	24	33	"			0.0402
149	8	250	74.9	44	42	21	30	0.032051			0.0373
159	9	315	94.6	42	41	18	27	0.030675	0.030103		0.0348
	10	400	∞	40	40	16	25	0.030103			
	11	500		40	40	16	25				
	12	630		40	40	16	25				
	13	800		40	40	16	25				
	14	1 000		40	40	16	25			0.053013	
159	15	1 250		38	38	15	23	0.030103	不适用	0.059640	0.0348
121	16	1 600		34	34	12	21	0.029960		0.053013	0.0402
149	17	2 000		32	32	9	18			"	0.0373
159	18	2 500		30	30	5	15			0.047712	0.0348
	19	3 150		29	29	4	14			"	
	20	4 000		29	29	5	14			0.053013	
159	21	5 000		30	30	6	15			"	0.0348
149	22	6 300	∞	31	31	10	17	0.029960	0.029960	0.068160	0.0373
	23	8 000	44.3	37	34	17	23	0.042285		0.079520	"
173	24	10 000	50.7	42	37	21	29	"	"	0.059640	0.0435

A36-3

A36.5

A36.5.1

A36.5.1.1

A36.5.1.2

A36.5.1.3

A36.5.2

A36.5.2.1

A36.3

A36.5.2.2

A36.5.2.3 A36.2

(a)

(b)

(c)

A36.5.2.4

A36.5.2.5

(a)

(b)

(c)

(d)

(e) APU

(f)

(g) / /

(h)

(1)

(2)

(i)

(j)

A36.5.3

A36.5.3.1 B

A36.5.4

A36.5.4.1 EPNL 90%

(a)

(b) (a)

90%

A36.5.4.2

90%

±1.5EPNdB

90%

A36.5.4.3 A36.5.4.1 EPNL

A36.6

antilog		10
$C(k)$	dB	k PNL(k)
d		$t(1)$ $t(2)$ 0.5
D	dB	PNLTM
EPNL	EPNdB	PNL EPNdB dB
$EPNL_r$	EPNdB	
$f(i)$	Hz	i
$F(i,k)$	dB	dB k i
h	dB	PNLTM
H		
i		50 10000Hz 24
k		
log		10
$\log n(a)$		SPL $\log n$ $\log n$
$M(b)$ $M(c)$		SPL $\log n$

n		
$n(i,k)$		k i
$n(k)$		k 24 $n(i)$
$N(k)$		k 24 $n(i,k)$
$p(b)$ $p(c)$		SPL $\log n$
PNL	PNdB	PNdB dB
PNL(k)	PNdB	k 24 SPL(i,k) PNdB dB
PNLM	PNdB	PNL(k) PNdB dB
PNLT	TPNdB	PNL TPNdB dB
PNLT(k)	TPNdB	k PNL(k) TPNdB dB
PNLTM	TPNdB	PNLT(k) TPNdB dB
$PNLT_r$	TPNdB	
$s(i,k)$	dB	k i
$s\ i,k$	dB	
$s\ i,k$	dB	k i
$\bar{s}\ i,k$	dB	
SPL	dB 20 μPa	
SPL(a)	dB 20 μPa	SPL $\log n$ SPL
SPL(b) SPL(c)	dB 20 μPa	SPL $\log n$ SPL
SPL(i,k)	dB 20 μPa	k i
SPL i,k	dB 20 μPa	k i
SPL(i)	dB	PNLTM i

	20 μPa	
$SPL(i)_r$	dB 20 μPa	PNLTM i
SPL i,k	dB 20 μPa	k i

		EPNL
Δ_3	EPNdB	EPNL

A36.7

A36.7.1 A36.7.2

A36.7.2

A36.7.2(a)

$$i \quad 10^{\ 2.05\log\ f_0/1000 \quad 6.33\ 10^{\ 3} \quad 1.45325}$$

$$10^{\ \log\ f_0 \quad 4.6833\ 10^{\ 3} \quad 2.4215}$$

$$\sqrt{\frac{1010}{f_0}}10^{\ \log H \quad 1.97274664 \quad 2.288074\ 10^{\ 2}}$$

$$10^{\ 9.589\ 10^{\ 5\ \ 2} \quad 3.0\ 10^{\ 7\ \ 3}}$$

$\eta(\delta)$ A36-4 f_0 A36-5

$\alpha(i)$ dB/1000

θ

H

A36.7.2(b)

$$i \quad 10^{\ 2.05\log\ f_0/1000 \quad 1.1394\ 10^{\ 3} \quad 1.916984}$$

$$10^{\ \log\ f_0 \quad 8.42994\ 10^{\ 3} \quad 2.755624}$$

$$\sqrt{\frac{1010}{f_0}}10^{\ \log H \quad 1.328924 \quad 3.179768\ 10^{\ 2}}$$

$$10^{\ 2.173716\ 10^{\ 4\ \ 2} \quad 1.7496\ 10^{\ 6\ \ 3}}$$

$\eta(\delta)$ A36-4 f_0 A36-5

$\alpha(i)$ dB/100

θ

H

A36.7.3 A36-4 A36.7.2

δ	η(δ)	δ	η(δ)
0.00	0.000	2.50	0.450
0.25	0.315	2.80	0.400
0.50	0.700	3.00	0.370
0.60	0.840	3.30	0.330
0.70	0.930	3.60	0.300
0.80	0.975	4.15	0.260
0.90	0.996	4.45	0.245
1.00	1.000	4.80	0.230
1.10	0.970	5.25	0.220
1.20	0.900	5.70	0.210
1.30	0.840	6.05	0.205
1.50	0.750	6.50	0.200
1.70	0.670	7.00	0.200
2.00	0.570	10.00	0.200
2.30	0.495		

必要时用二次插值

A36-4

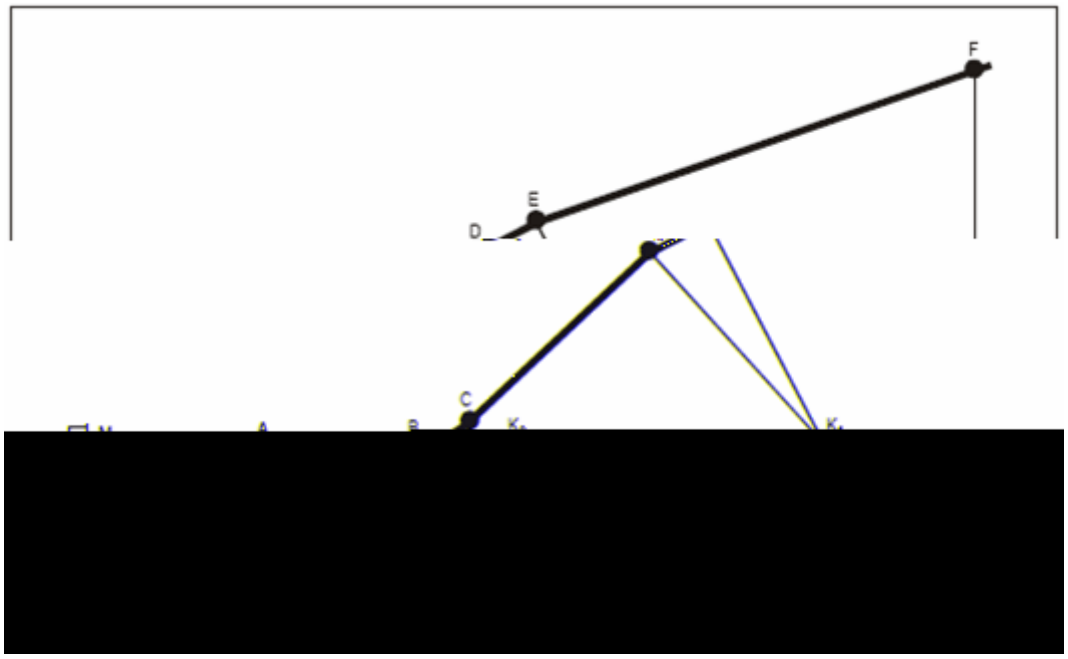
三分之一倍频程 中心频率 *(Hz)*	f_0 *(Hz)*	三分之一倍频程 中心频率 *(Hz)*	f_0 *(Hz)*
50	50	800	800
63	63	1 000	1 000
80	80	1 250	1 250
100	100	1 600	1 600
125	125	2 000	2 000
160	160	2 500	2 500
200	200	3 150	3 150
250	250	4 000	4 000
315	315	5 000	4 500
400	400	6 300	5 600
500	500	8 000	7 100
630	630	10 000	9 000

A36-4 f_0

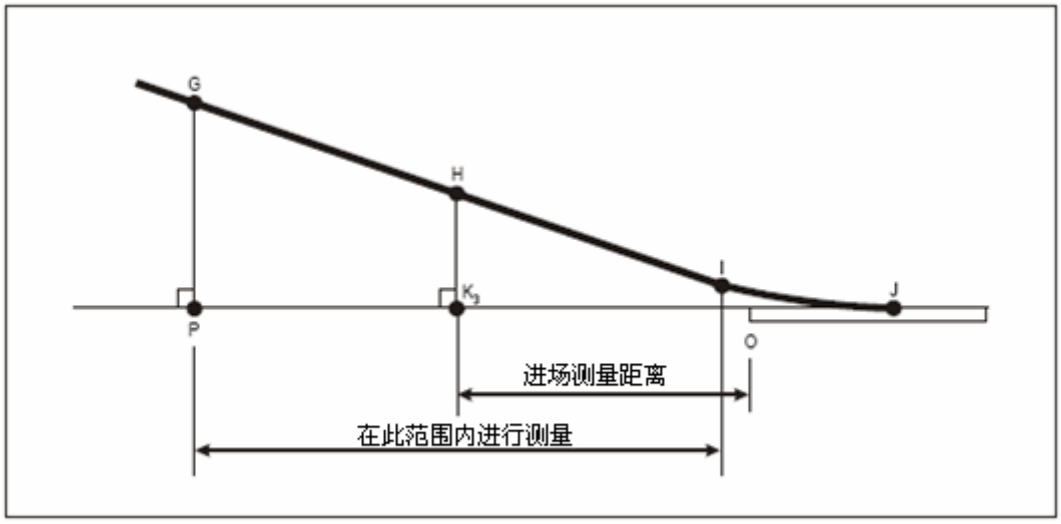
A36.8

A36.9

A36.9.1



A36-4



A36-5

A36.9.3

A36.9.3.1 PNLTM

EPNL

A36.9.3.2 PNL PNLT

(a) A36-6

EPNL A36-6

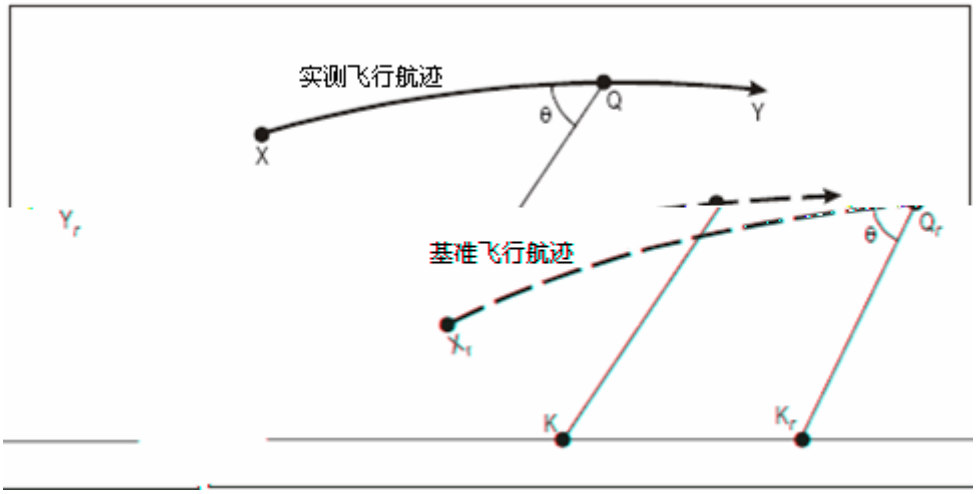
(1) XY EPNL

X_rY_r

(2) Q K PNLTM

Q_r K_r QK Q_rK_r

Q_r QK Q_rK_r θ



A36-6

(b) A36-7(a) (b) (b)(1) (2)

EPNL

(1) A36-7(a) XY EPNL

A36-7(b) X_rY_r

(2) Q K PNLTM

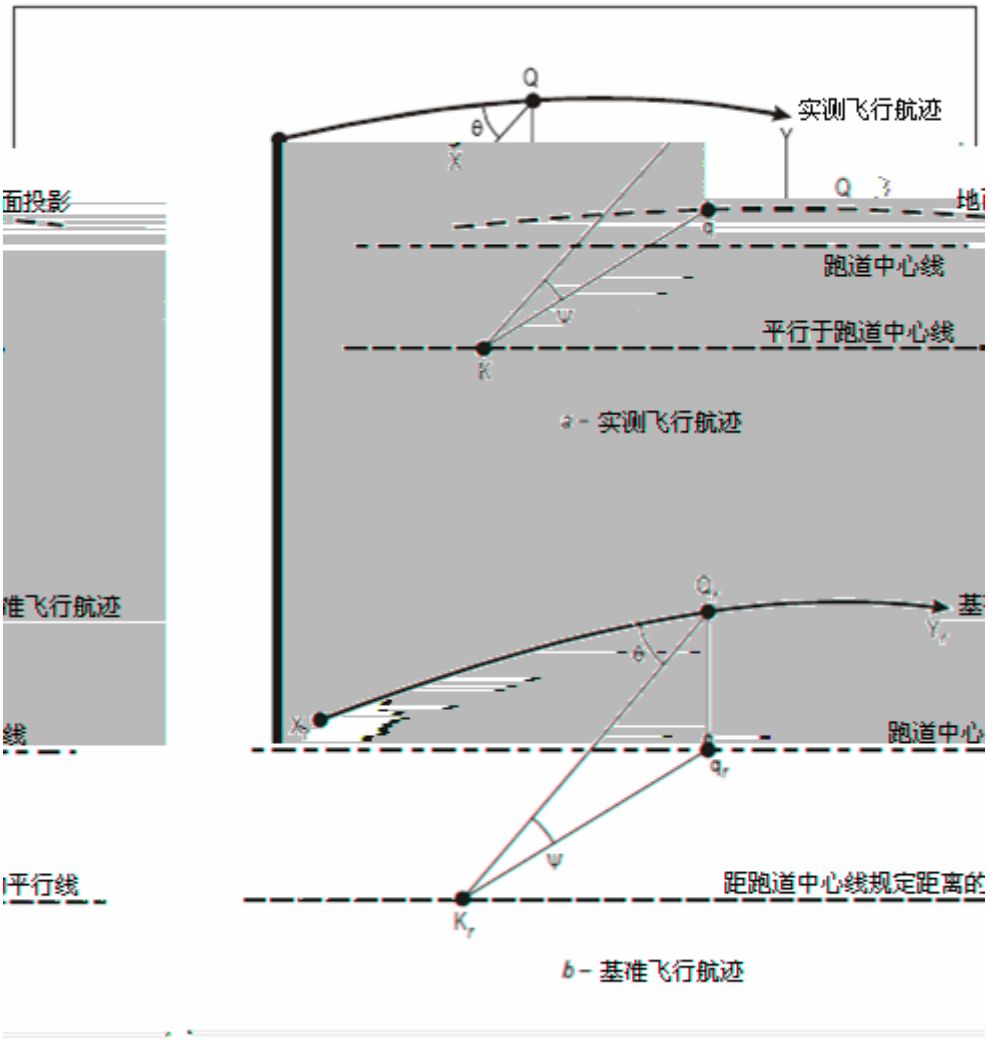
Q_r K_r QK Q_rK_r

K_r K_r Q_r QK Q_rK_r

(i) θ

(ii) ψ

ψ



A36-7

A36.9.3.2.1 PNL PNLTM K PNL SPL(i) SPL(i)$_r$

A36.9.3.2.1(a)

SPL i_r SPL i 0.001 i i_0 QK 0.001 i_0 QK Q_rK_r 20log QK/Q_rK_r

(1) 0.001[$\alpha(i)$–$\alpha(i)_0$]QK $\alpha(i)$ $\alpha(i)_0$ A36.7

(2) 0.001$\alpha(i)_0$(QK–Q_rK_r)

(3) 20log(QK/Q_rK_r)

(4) QK Q_rK_r $\alpha(i)$ $\alpha(i)_0$ dB/1000

A36.9.3.2.1(b)

SPL i_r SPL i 0.01 i i_0 QK 0.01 i_0 QK Q_rK_r 20log QK/Q_rK_r

(1) 0.01[$\alpha(i)$–$\alpha(i)_0$]QK $\alpha(i)$ $\alpha(i)_0$

A36.7

(2) $0.001\alpha(i)_0(QK-Q_rK_r)$

(3) $20\log(QK/Q_rK_r)$

(4) QK Q_rK_r $\alpha(i)$ $\alpha(i)_0$ dB/100

A36.9.3.2.1.1 PNLT

(a) $SPL(i)_r$ $PNLT_r$

(b) Δ_1

1 $PNLT_r$ PNLTM

A36.9.3.2.1.2 Δ_1 EPNL

A36.9.3.2.2 PNLTM 2dB PNLT

A36.9.3.2.1

PNLT PNLTM

EPNL

A36.9.3.3

A36.9.3.3.1 /

/ EPNL

A36.9.3.3.2 A36-6

2 $7.5\log\ QK/Q_rK_r$ $10\log\ V/V_r$

Δ_2 EPNL

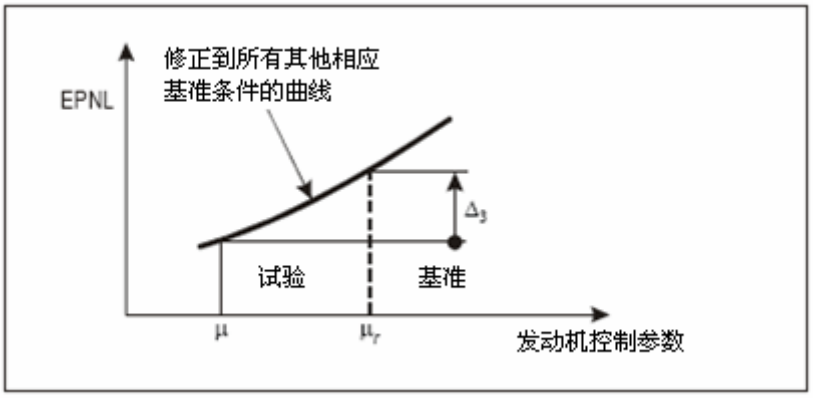
A36.9.3.4

A36.9.3.4.1

A36-8

EPNL μ EPNL

B36.7(b)(7) μ_r



A36-8

A36.9.3.4.2 μ_r EPNL μ EPNL Δ_3

EPNL

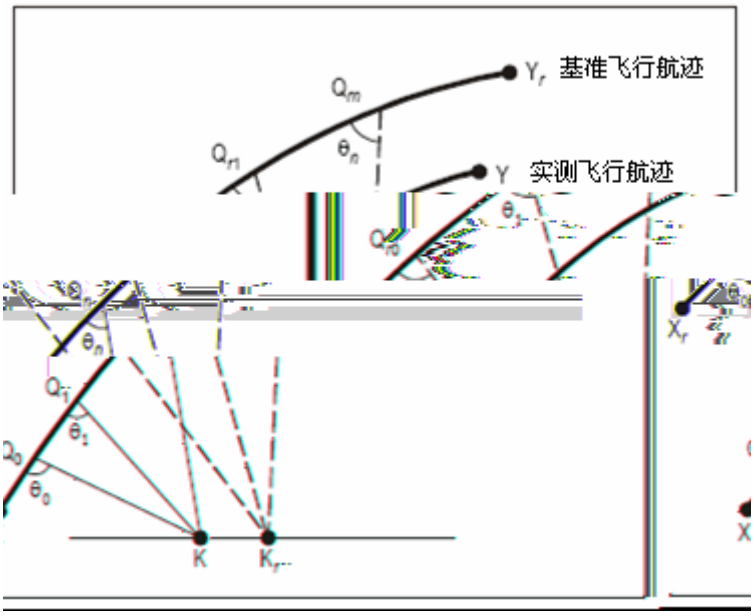
A36.9.3.5

A36.9.3.5.1 B36.4(b)

(a)

A36-9(a)

(b)



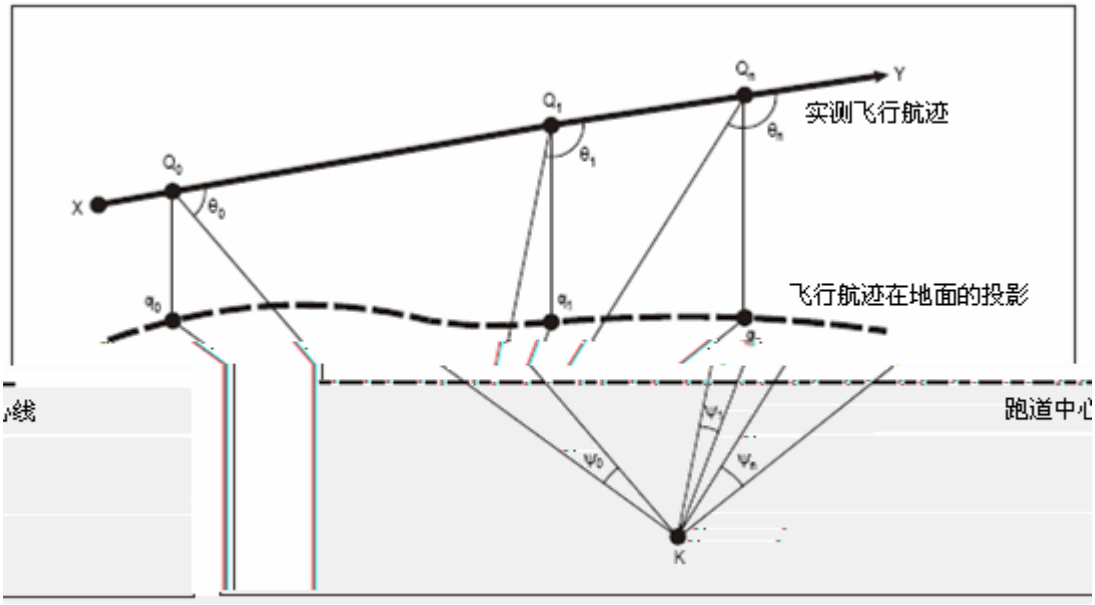
A36-10

(b) A36-11(a) (b) (b)(1) (2)
EPNL

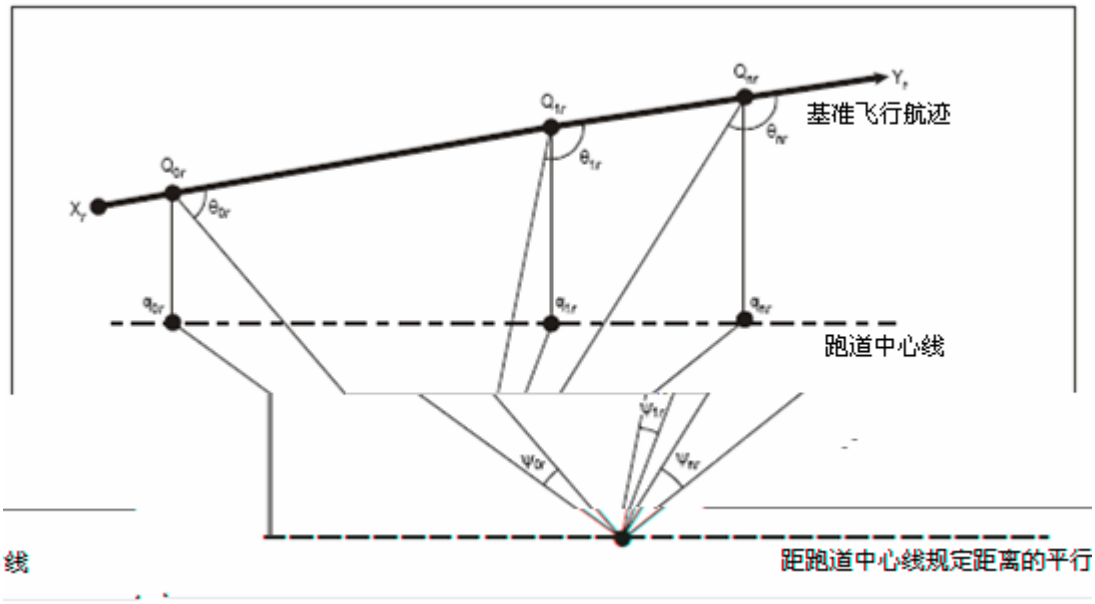
(1) A36-11(a) XY EPNL
A36-11(b) X_rY_r

(2) Q_0 Q_1 Q_n t_0 t_1 t_n
Q_1 t_1 K $SPL(i)_1$
Q_{r1} t_{r1} K_r $SPL(i)_{r1}$
Q_1K $Q_{r1}K_r$ Q_{r0} Q_{rn}
Q_0 Q_n Q_0 Q_n Q_{r0} Q_{rn}
10dB PNLTr A36.9.4.2.2 A36.9.4.2.3 K_r
K_r Q_{r1}
(i) Q_1K $Q_{r1}K_r$ θ_1
(ii) ψ_1 ψ_{r1}
K_r ψ_1 ψ_{r1} A36.9.4.2(b)(2)(i)

ψ



A36-11(a)



A36-11(b)

A36.9.4.2.1 A36.9.4.2(a)(2) (b)(2) t_{r1} t_1 $Q_{r1}K_r>Q_1K$

(1) V_r $Q_{r1}Q_{r0}$ V Q_1Q_0

(2) $Q_{r1}K_r–Q_1K$

A36.9.4.2(a)(2) (b)(2)

A36.9.4.2.2

$SPL(i)_1$ A36.9.3.2.1 $SPL(i)_{r1}$ PNL_{r1}

A36.4.2 PNL_r t_0 t_n

A36.9.4.2.3 PNL_{r1} A36.4.3 $SPL(i)_r$
C_1 PNL_{r1} $PNLT_{r1}$
t_0 t_n $PNLT_r$
A36.9.4.3
A36.9.4.3.1 0.5 PNLT $PNLT_r$
$PNLT_{r1}$ t_{r1} A36.4.5.1
$EPNL_r$
A36.9.4.4
A36.9.4.4.1 A36.9.3.4 Δ_3

A36.9.5

A	
B	
C	
D	
E	
F	
G	
H	
I	
J	
K	
K_r	
K_1	
K_2	
K_3	
M	
O	
P	
Q	K PNLTM A36.9.3.2
Q_r	K PNLTM A36.9.3.2
V	
V_r	

A36.9.6

AB		
AK		
AM		

QK		Q K
Q_rK_r		Q_r K_r
K_3H		
OK_3		
OP		

[2007 4 15]

B 36.103

B36.1

(a) A

(b) 16 I 2002 3 21
7 2

B36.2

A
EPNdB

B36.3

B36.6
B36.5

(a)

(1) 450
1476 3
648 0.35

300 985 435
(1427) +100 –50 (+328 -164
)

(2) 650
2133 2007 4 15
B36.3(a)(1)

(b) 6500
21325

(c) 2000 6562
300 984 3°
120 394

B36.4

(a)

(b)

±10 33

B36.5

B36.6 A

(a) 36.7(c)

(b)

(1) 272000 600000 108EPNdB
272000 600000 5EPNdB 34000 75000
93EPNdB

(2) 272000 600000 108EPNdB
272000 600000 2EPNdB
34000 75000 102EPNdB

(c)

(1)

(i) 385000 850000
106EPNdB 385000 850000 4EPNdB
20247 44673 89EPNdB

(ii) 385000 850000
104EPNdB 385000 850000 4EPNdB
28675 63177 89EPNdB

(iii) 385000 850000
101EPNdB 385000 850000 4EPNdB
48195 106250 89EPNdB

(2) 400000 882000
103EPN 400000 882000 2.56EPNdB
35018 77200 94EPNdB

(3) 280000 617300
105EPNdB 280000 617300 2.33EPNdB
35018 77200 98EPNdB

(d)

16 I 2002 3 21 7 4 4.4 3

3.4

B36.6

36.7(c)(1) 36.7(d)(1)(ii)

(a) 3EPNdB

(b) 2EPNdB

(c)

B36.7

(a)

(1) 36.3

(2)

(3) (b) (c)

(4)

(5)

(i) 1013.25 2116

(ii) 25℃ 77℉ 10℃

(iii) 70

(iv)

(v)

(b)

(1)

B36.7(a)(5)

(i) 2

(A) ——214 700

(B) ——305 1000

(ii) 2

(A) ——210 689

(B) ——260 853

(C) ——300 984

(2) (b)(1)

(i) 4

(ii)

(3)

2007 4 15 (b)(2)

(4)

V_2 19 V_2 10 V_2 37 V_2 20

(5)

APU

(6)

36.1581 (d)

(7)

N1 EPR

(c)

(1) 3°

(2)

V_{REF} 19 V_{REF} 10 V_{REF}

(3)

(4) (c)(3)

36.1581 (d)

(5)

A A36.5.2.5

B36.8

(a)

(b)

EPNL EPNdB A

(c) A

A36.9

(d) EPNL

2EPNdB 1EPNdB

EPNL

EPNL 2EPNdB

(e) 3°±0.5°

(f)

16EPNdB

8EPNdB 8EPNdB 4EPNdB B36.5

2EPNdB

(g) 10dB

±3 10dB

±5.5 ±3

[2007 4 15]

C –E

[2007 4 15]

F 1988 11 17

A

F36.1

B

F36.101

F36.103

F36.105

F36.107

F36.109

F36.111

C

F36.201

F36.203

D

F36.301

A 部分 总则

F36.1

36.1 36.501 (b)

B 部分 噪声测量

F36.101

(a)

75°

(b)

(1)

(2) 90% 30%

(3) 10 (33) 5℃(41℉) 30℃ 86℉
1.83 (1)

(4) 10 (33) 19 / 10 /
7 / 4 / ±15°
1.83 1

(5)

(6)

(7) F36.103

F36.103

(a) F36.105

(b)

(c) F36.105

(d)

(rms)

F36.105

(a)

(b) (IEC) 179
36.6

(c) 45 11200
IEC 179 (1973)

(d)
800 11200
20dB

(e) IEC 179 (1973)
A
1 800

(f)

(g) 11 / 6 /

F36.107

(a)
1.2 (4)

(b)

(c)

10dB(A)

F36.109

(a)

(5)

(6)

(g)

F36.111

(a)

300 $^{10}_{30}$ 985 $^{30}_{1000}$ ±10°

(b)

(l)

(2)

C 部分 数据修正

F36.201

(a) 20°±5℃ 68±9℉ 40

25℃ 77℉ 70

(b) (c)

5dB(A)

(c)

$$\triangle dB=49.6-201og_{10}\{(3500-D_{15})\frac{R/c}{Vy} \quad 15\}$$

D_{15}— 15 50 ( )

R/C— (/)

V_y—

(d) 15 50

610 2000 825 2700

F36.203

(a) (A) 90

(b) ±1.5dB(A) 90

D

F36.301

(a) B C

(b) 600 1320 68dB(A) 600 1320 1500 3300 1dB/75 1dB/165 1500 3300 80dB(A) 80dB(A)

G 1988 11 17

A

G36.1

B

G36.101

G36.103

G36.105

G36.107

G36.109

G36.111

C

G36.201

G36.203

D

G36.301

A 部分 总则

G36.1

36.1 36.501 (c)

B 部分 噪声测量

G36.101

(a)

75°

(b)

(1)

(2) 2.2℃ 35℃ 36℉ 95℉

(3) 20 95 ( )

(4) 19 / 10 9 / 5 30

(5)

(6) 1.2 4 10 33

1.83 (1)

(c)

(d) G36.103

G36.103

(a) G36.105

(b)

(c) G36.105

(d)

(rms)

G36.105

(a)

(b) (IEC) 651
561 36.6
IEC 651 I
(c) 45 11200
IEC 651
(d)
800 11200
20dB
(e) IEC 651 A

(f)
A
A36.3.8 A36.3.9
(g) 9 / (5)

G36.107
(a) 12.7
7
40 2.5

3/4
(b)

10dB
(c)

10dB(A)

G36.109
(a)

(b) G36.105

(c)
(d) G36.101

(1)
(2)
(e)

(f)

(g)

(1) ( )

(2)

(3)

(4)

(5) (rpm)

±1

(6) G36.201

G36.111

(a) 2500 (8200)

±10° ±20

V_y±9 / 5

(b)

(1) 1013.25 (1013.25)

(2) 15℃ 59℉

(3) 70

(4)

(c)

(1)

(i) 15 50

(ii)

(iii)

(iv) (

)

(2)

(i)

(ii) ( )

(iii) V_y

(iv)

C 部分 数据修正

G36.201

(a)

(1)

(2)

(3)

(4)

(b) G1

15℃ 59℉ 70

(c)

(1) 0.70 0.014

(2) 0.70 0.80 0.007

(3) 0.80 0.005 0.80 0.008

(d)

(1)

△ (M)=(H_Tα-0.7H_R)/304.8

H_T H_R

α 500 (SAE) ARP866A 36.6

(2) △(1) G1

△(1)=221og(H_T/H_R)

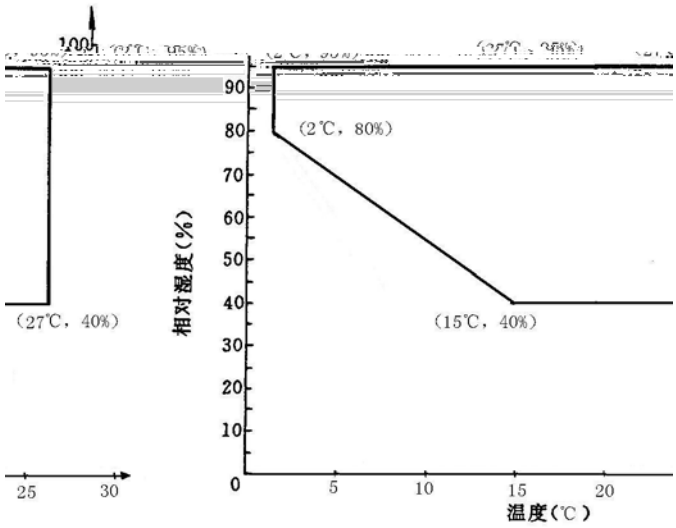
H_T H_R

Gl

△(1)=201og(H_T/H_R)

(3) △(2)

△(2) klog(M_R/M_T)



G1

M_T M_R k dB(A)

k M_T M_R K

150 M_T M_R k M_R

( )

(4)

△(3) 171og(P_R/P_T)

P_T P_R

G36.203

(a) 6 (L_{Amax}) 90

(b) ±1.5dB(A) 90

D 部分 噪声限制

G36.301

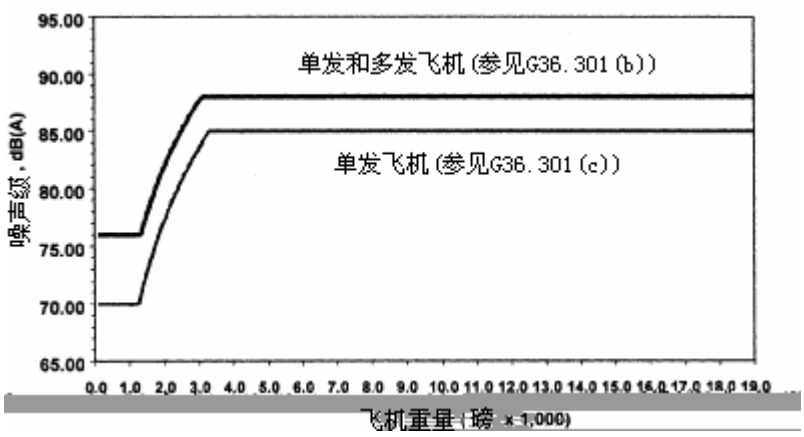
(a) B C

(b) 2007 4 15

600 (1320) 76dB(A) 600 (1320) 9.83dB(A) 88dB(A) 8618 (19000) G2

(c) 2007 4 15

570 (1257) 70dB(A) 570 (1257) 10.75dB(A) 85dB(A) 8618 (19000) G2



G2

[2007 4 15]

H H

15

H36.107

H36.109

H36.111

H36.113

C 36.803

H36.201 EPNdB

H36.203

H36.205

D 36.805

H36.301

H36.303

H36.305

A

H36.1

36.1

(a) H
36.801

(b) 36.803
(EPNL)

(c) 36.805

H36.3

(a)

(1) 1,013.25 (2116)

(2) 25℃(77℉)

(3) 70

(4)

(b) 10dB

(c)

(1) H1

(2) (20 65 500 1640) β β V_y β ( ) β Cr A (Ir)

(d) D_r (H2) D_r A 150 492 $0.9V_H$ $0.9V_{NE}$ $0.45V_H$ 120 / $0.45V_H$ 65 $0.45V_{NE}$ 120 $0.45V_{NE}$ 65 10dB RPM A J_r

(e) V_H 1,013.25 (2116) 25℃ 77 V_{NE} V_H V_{NE}

(f)

(1) H3

(i) E (EK) (PNLTM)10dB E_rK_r rpm 6°

(ii) β AH A K K β 5.5° 6.5°

(2) H 6° 10dB E K

H36.5

A	( )

C	
Cr	
D	
Dr	
E	
Er	
F	A
Fr	A
G	A
Gr	A
H	A
Hr	A
I	
Ir	
J	
Jr	
K	
Kr	
L	A PNLTM
Lr	A PNLTM
M	A PNLTM
Mr	A PNLTM
N	A PNLTM
Nr	A PNLTM
S	

AF		A
AG		A
AH		A

AL		L A
ALr		Lr A
AM		M A
AMr		Mr A
AN		N A
ANr		Nr A
CI		C A I
DJ		D A J
EK		E A K

B 36.801

H36.101

(a)

(b)

(1)

(2)

150 492

(3) 6
20

(4)

(5) PNLTM10dB
( )

(i) ( )
80°

(ii)

(6)

(i)

(ii) +5% -10%

(7) 6°±0.5° H36.107

(8)

(i)

(ii) 90% 105

(c)

(1)

(2) 10 33

-10℃~35℃ 14℉~95℉ ( ) 10 33

(3) 10

8 12dB/100

20%~95%( )

(4) 10 19 / 10

9 / 5 10dB 30

(5) ( )

(6) 10

(

)

(7) 30

(d)

(1) A

EPNdB

(2)

( )

(3)

PNLTM10dB

(4) H36.205

H36.103

(a) H36.101 H36.205 (b)

36

(b) (

)

(1) V_y±9 / 5 ±9 / 5

10dB

(2) 20 65

(3) 500 1640

(4) 10dB 25℃

±9 / 5 25℃

(5) 10dB
±1.0
(6) 10dB ±10° ±20 65

(7)
V_y

H36.105
(a) H36.101 H36.205 (c)
36
(b)

(1)
(2) 150±9 492 ±30
(3) 10dB ±10° ±20 65

(c)
(1) $0.9V_H$ $0.9V_{NE}$ $0.45V_H$ 120
$0.45V_H$ 65 $0.45V_{NE}$ 120 $0.45V_{NE}$ 65 ,

(2) 10dB
±1.0
(3) PNLTM 10dB
(d) ±9 / 5

H36.107
(a) H36.101 H36.205 (d)
36
(b) (
)
(1) 6°±0.5°
(2) 120±10 394 ±33
(3) 10dB ±10° ±20 65

(4) V_y

(5) 10dB
±1.0
(6)

(c) ±9 / ±5

H36.109

A A36.3

H36.111

(a)

(b)

(1) H36.109

(2)

(3)

(4)

(5)

(i)

(ii)

(iii)

(iv)

(v) (/)

(vi)

(vii) ( )

(6) H36.3

(c)

(1) H36.3 H36.205

(2)

EPNL 2.0EPNdB 4.0EPNdB, $\triangle_1$(H36.205(f)(1)) $\triangle_2$(H36.205(g)(1)(i)) -7.5Log(AL / ALr) 2.0EPNdB

(i)

(ii)

(iii) H36.205

(iv)

H36.205

(3) 10dB A36.3.10.1 3dB

(d)

(1) 90% EPNL

90%

(2)

90%

±1.5EPNdB

(3)

(4) V_H V_y

H36.113

(a)

H36.3 (a)

(b) 50Hz 10kHz

SAE ARP866A

A36.7

(c)

(1) EPNL

•°$ (i)

4\×‰ Í!r O ”0Ö8aHWÐ Ä `'•×I ™A *ÐL8gÚ á7

1) a)

H36.203

(a) H36.305

EPNL

(b) 6

EPNdB H36.111 (d) 90%

EPNdB

H36.205

(a) H36.305

(1) EPNL

(i)

(ii)

(2) EPNL

(i)

PNLTM

(ii) PNLTM

PNLTM SPL

(A)

(B)

(C) SPL

PNLTM PNLTM

EPNL

(iii) PNLTM PNLTM

EPNL

PNLTM

(iv)

(b)

(1) H1

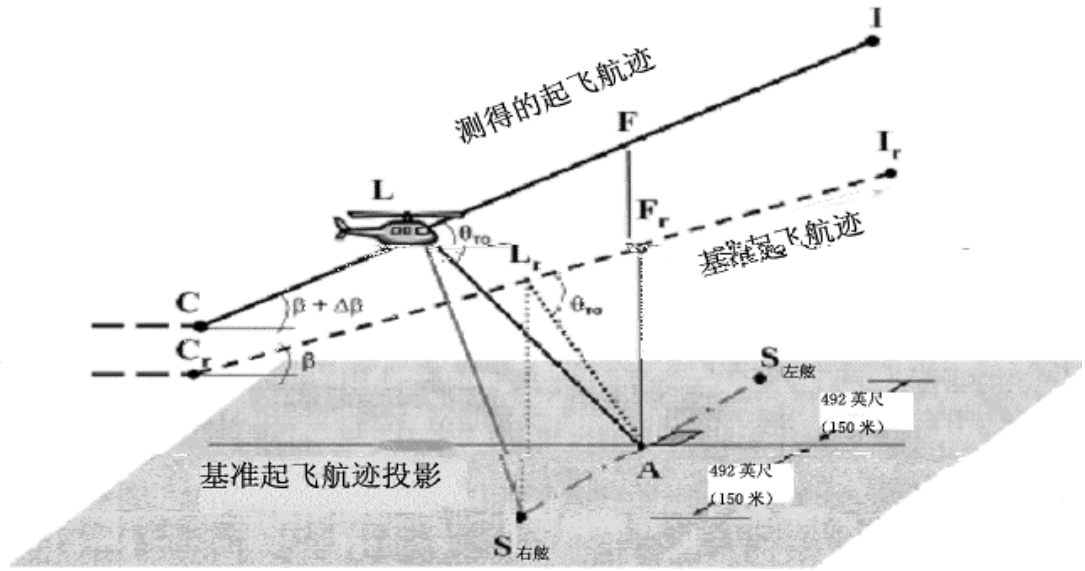
(i) H36.3 (c)

(ii)

(2)

20 65 V_y±9 / ±5

C

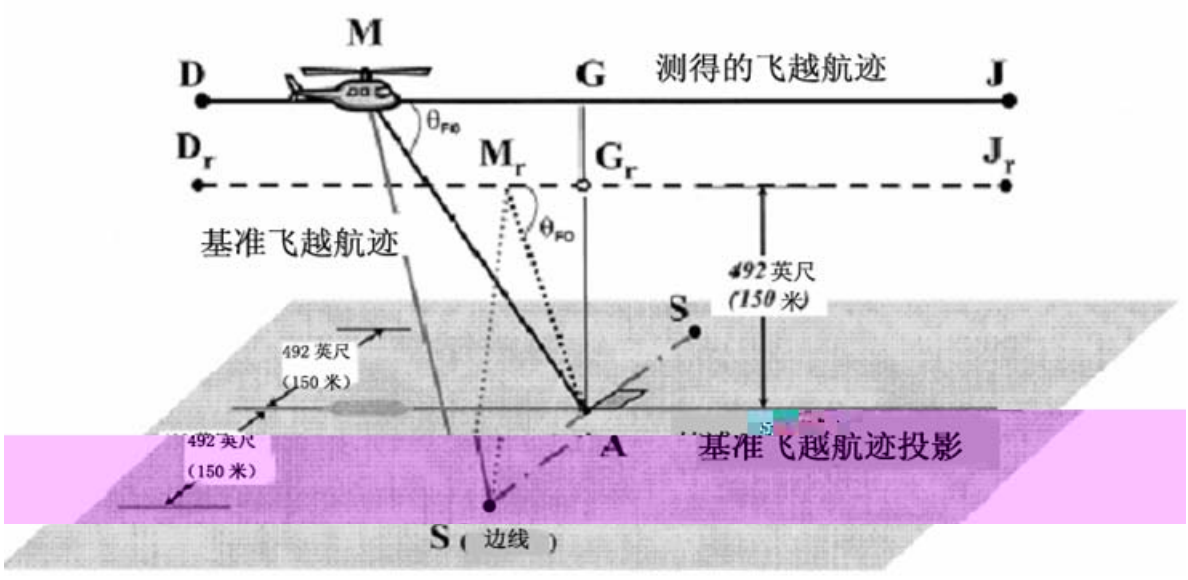


H1

(3) H1 L A PNLTM
L_r AL AL_r

(c)

(1) H2 H36.3 (d)
±9 / ±5



H2

(2) H2
DJ PNLTM 10dB
AG AG

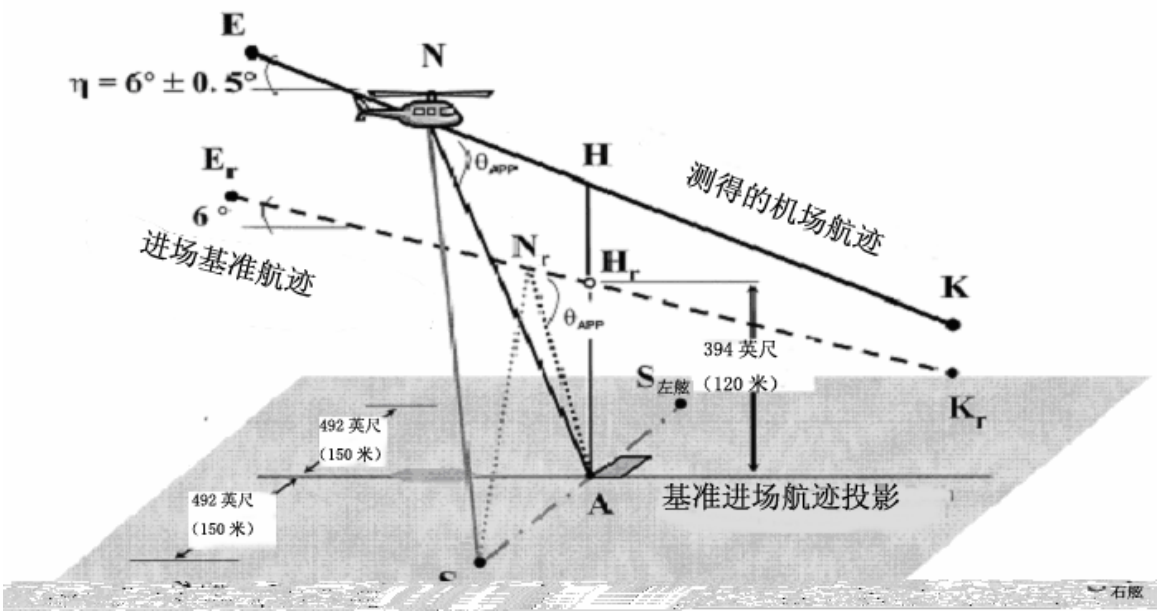
M A PNLTM M_r

(d) 进场剖面

(1) H3

(2) 10dB 6°(±0.5°) H

6°



H3

(3) H3

(f) PNLT

(25℃(77℉) 70%) (a) EPNL

(1) H1 A L PNLTM

SPL(i)

(i) 1

$$SPL(i)_r = SPL(i) + C[\alpha(i) - \alpha(i)_o]AL + C\alpha(i)_o\,(AL - AL_r) + 20\log\,(AL/AL_r)$$

SPL(i) SPL(i)r i

α(i) α(i)o i

AL C

0.001 0.01

ALr

(ii) 2 $SPL(i)_r$ PNLT

Δ_1=PNLT - PNLTM

EPNL

(2)

(i) (f)(1)

H2 SPL(i)r

$$SPL(i)_r = SPL(i) + C[\alpha(i) - \alpha(i)_o]AM + C\alpha(i)_o\,(AM - AM_r) + 20\log\,(AM/AM_r)$$

AM AM_r

(ii) (f)(1)(ii)

(3)

(i) (f)(1)

H3 SPL(i)r

$$SPL(i)_r = SPL(i) + C[\alpha(i) - \alpha(i)_o]AN + C\alpha(i)_o\,(AN - ANr) + 20\log\,(AN/ ANr)$$

AN ANr

(ii) (f)(1)(ii)

(4)

(i) (f)(1)

$SPL(i)_r$ H3

$$SPL(i)_r = SPL(i) + C[\alpha(i) - \alpha(i)_o]SX + C\alpha(i)o\,(SX - SX_r) + 20\log\,(SX/ SX_r)$$

S X X_r

X=L X_r=L_r

X=M X_r=M_r

X=N X_r=N_r

(ii) (f)(1)(ii)

(g)

(1)

(i) H1

$\Delta 2 = -7.5 \log (AL/AL_r) + 10 \log (V/V_r)$

EPNL AL AL_r

A

EPNL

(ii)

$\Delta 2 = -7.5 \log (AM/AM_r) + 10 \log (V/V_r)$

AM A AM_r A

(iii) H3

$\Delta 2 = -7.5 \log (AN/AN_r) + 10 \log (V/V_r)$

AN A AN_r A

(iv)

$\Delta 2 = -7.5 \log (SX/SX_r) + 10 \log (V/V_r)$

S X X_r

X = L $Xr = L_r$

X = M $Xr = M_r$

X = N $Xr = N_r$

(2)

θ

ψ ψ

D 36.805

(ii)
2EPNdB
2EPNdB
(2)
(i) 80000 176370 109EPNdB
3.01EPNdB 89EPNdB
(ii) 80000 176370 108EPNdB
3.01EPNdB 88EPNdB
(iii) 80000 176370 110EPNdB
3.01EPNdB 90EPNdB
(b) H36.11 (b)
H36.203 (a)

(1) 4EPNdB
(2) 3EPNdB
(3)
[2007 4 15]

I [ ]

J

3175 （7,000 ）

H

A

J36.1

J36.3

J36.5 [ ]

B 36.801

J36.101

J36.103 [ ]

J36.105

J36.107 [ ]

J36.109

J36.111

J36.113 [ ]

C 36.803

J36.201 SELdB

J36.203

J36.205

D 36.805

J36.301

J36.303 [ ]

J36.305

A

J36.1

36.1 H 3175 7,000

(a) H 36.801

(b) 36.803 (SEL)

(c) 36.805

J36.3

(a)

(1) 76 2116

(2) 25℃ 77℉

(3) 70

(4)

(b) A 10dB

(c) 150 492 $0.9V_H$ $0.9V_{NE}$ $0.45V_H+120$ / $0.45V_H+65$ $0.45V_{NE}+120$ / $0.45V_{NE}+65$ 10dB RPM

(1) V_H 1,013.25 (2,116) 25℃ V_H V_{NE}

(2) V_{NE}

(d)

J36.5 [ ]

B 36.801

J36.101

(a) 总则

(b)

(1)

(2) A 10dB

( )

80°

(c)

(1)

(2) 2 ℃ 35℃ 36℉ 95℉ ( ) 20 95 ( )

8kHz

10dB/100 (30.5dB/1000)

(3) 19 / (10) 9 / (5)

30

(4) 1.2 4 10 33

(5)

(6) 2000 6560

(d)

(1) J36.109 (b)

(SEL)

(2)

J36.205

(3) J36.3

J36.103 [ ]

J36.105

(a)

(b)

(1)

(2) 150±15 492 ±50

(3) ±10°

(c)

(1) J36.3 (c)

(i) MAT (V_R) (V_T)

25℃ 77℉ c (1135.6

$L_{AE}=L_{AMAX}+\triangle A$

$\triangle A$

$\triangle A$ $10\log10(T)$

T $(t_2-t_1)/2$ L_{AMAX} (P_0) A ( )

dB

(c)

(1) (d)

(2)

(3) (d)

(4) A36.3.9

(d)

(1) A

“ ” SEL

(i) SEL

804 36.6

1

(ii) (e) (f)

(d)(1)(i) /

( ) A36.3.6 IEC 561

36.6

(iii) IEC 651

36.6

(iv) 45 11500 A

IEC 651 1 IV V

36.6

(v)

(e)

(e)

(1)

A A36.3.6

(2)

(i)

( )

(ii) 0.5dB

SEL

(iii)

(f)

(1)

1.2 4

(2)
10dB
(3)
15dB(A)

(4)
A ( ) SEL A (L_{AMAX}) 10dB
SEL
dB(A) (L_{AMAX}) ( )
J36.111 (b)

J36.111
(a)

(b)
(1) J36.109

(2)
(3)
(4)
(5)
(i)
(ii)

(iii)
(iv)
(v)
(vi) V_H V_{NE} ( )
(vii)
(viii)
(ix)
(x)
(xi) (
)

(6) J36.205
J36.105

J36.113 [ ]

C 36.803

J36.201 SELdB

J36.109 (b) dB(A) (SEL)
SEL
J36.109

J36.203

(a) J36.305 SEL
J36.205 SELdB(A)

(b) 6
1.5dB(A) 90%

(c) 90%
J36.111

J36.205

(a) B J36.3
(b)(c)

(b)

$\triangle J_1=12.5\log10(H_T/150)dB$

△J1 dB SEL
H_T 12.5

(c)

$\triangle J_3=10\log10(V_{RA}/V_R)dB$

△J3 dB SEL
V_R J36.3 (c)
V_{RA} J36.105 (c)

(d) J36.105 (c)

(e)

(f)

(g) J36.105 SEL
2.0dB(A)

(h) J36.111

D 36.805

J36.301

B C

D

J36.303 [ ]

J36.305

J36.101

( )

(a) 3175 7000

788 1737 82dB(SEL) 3.0dB

$L_{AE}(limit)=82+3.0[\log_{10}(MTOW/788)/\log_{10}(2)]dB$

MTOW

(b) IEC 804

1985

[2007 4 15]

(CCAR-36) 2002 3
20 Y12E Y8F-600 ARJ21-700

ICAO
ICAO 7
FAA FAR36 27
(CCAR-36) 16 I 3 FAR36
1 22 FAA

ICAO
(CCAR-36)
16 4 7 FAR36 23 28

(一)

(二)
[2007 4 15]
(三)
“ ”
(四)

16 I
FAR36 6

Amdt.36-23	2002.03.01
Amdt.36-24	2002.08.07

Amdt.36-25	2004.07.02
Amdt.36-26	2005.08.04
Amdt.36-27	2005.09.06
Amdt.36-28	2006.02.03

CCAR-36

A

				FAR	
36.1 (a)(1) (f)(1) (f) (9) (f) (10) (f) (11) (h) (5)	 √ √ √ √	 √ √		 36-24 36-24 36-26 36-26 36-26 36-25	
36.2	√			36-24	
36.6 (c) (1) (vi) (x) (c)(3)	 √ √			36-26	
36.7 (e)(4) (f)	 √ √			36-26	
36.11		√		36-25	

B

				FAR		
36.101		√		36-24	√	1f84.36 281182 2

				FAR	
36.801		√		36-25	

O

				FAR	
36.1581 (a) (2) (a) (3)		 √ √		 36-24 36-25	

				FAR	
A		√		36-24 36-26	A B
B		√		36-24 36-26	C
C		√		36-26	C
G		√		36-27 36-28	
H		√		36-25	
J		√		36-25	