

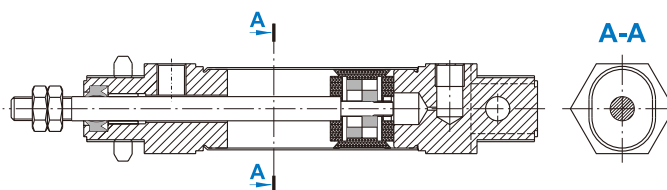


Features

- Large range 8mm bore ~ 25mm bore.
- Flat design enables non rotation of rod.
- ISO standard dimensions.
- Magnetic as standard.

Options

- Hole - rod with cylinders double end rod
- Pneumatic cushioning(A) with cylinders (16,20,25)



Material

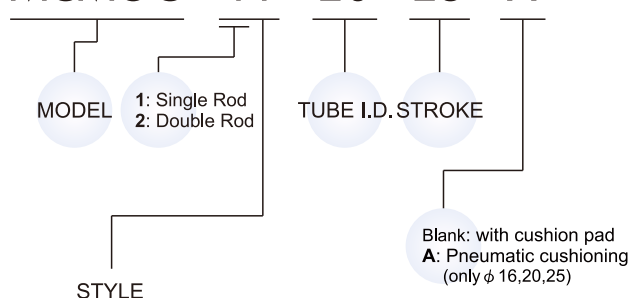
Oval tube	Stainless steel
End cover	Anodized aluminium
Piston rod	Stainless steel
Piston	Composit polyurethan
Piston rod bearing	Bronze & PTFE
Seals	Polyurethan
Spring	Bronze & PTFE
Magnet	Ferrite
Spacer spring	Brass & Acetal resin

Specification

Model		MCMOC					
Acting type		Double acting / Single acting					
Tube I.D. (mm)		8	10	12	16	20	25
Port size		M5 × 0.8			G1/8		
Medium		Filter air 50 μm lubricated or not					
Operating pressure MPa	Double acting	0.1~1	0.08~1	0.08~1			
	Single acting Push	0.2~1	0.23~1	0.21~1	0.15~1		
	Single acting Pull	0.3~1	0.25~1	0.2~1			
Stocking temperature °C		-10~70°C (No freezing)					
Speed m/sec		0.6			0.7		
Tolerance of stroke mm		0~+1.5					
Work temperature °C		-10~60°C (No freezing)					
Non-rotating accuracy		±3.5°			±2.5°		
Cushioning of end stroke		Elastic by polyurethan internal stop built into piston					
Pneumatic cushioning		No			Yes (option)		
Available speed range		50~500mm/sec					
Sensor switch		RCS					
Sensor switch band		BK-81					

Order example

MCMOC-11-20-25-A



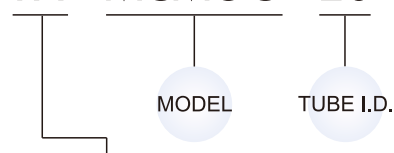
STYLE

Code	Symbol	Description
1 1		Double acting / Male thread
1 3		Single acting / Normally extended male thread
1 5		Single acting / Normally returned male thread
2 1		Double rod / Male thread
2 3		Single action / Double rod male thread
2 5		Double rod / Male thread hole-rod
2 6		Single action / Double rod / Male thread hole-rod

※ RCS specification, please refer to page V-12.

Mounting accessories

FA-MCMOC-20















MOUNTING TYPE






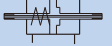

	LB
	FA
	FB
	SDB

Forces for oval cylinder

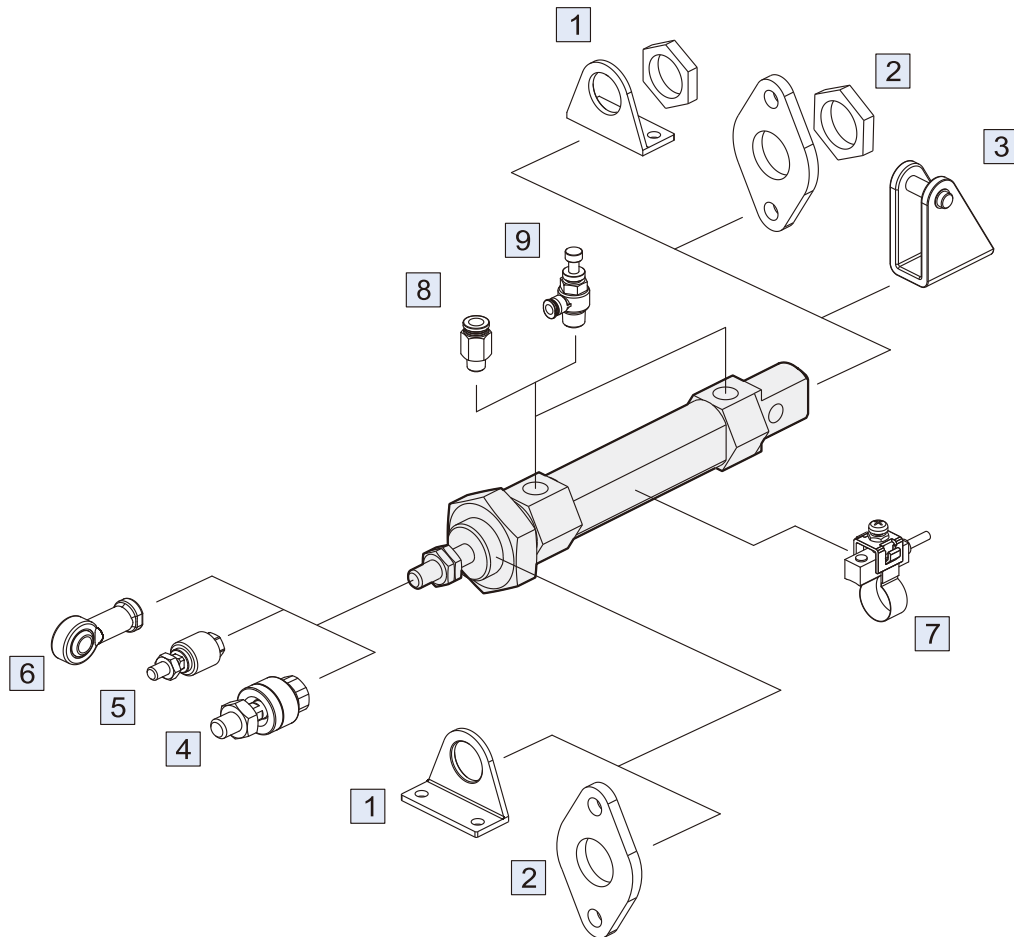
(unit: kg)

Tube I.D.	Rod ϕ	Function	Area mm^2	Pressure MPa					
				0.2	0.3	0.4	0.5	0.6	0.7
8	4	 Push	63	0.63	1.13	1.77	2.52	3.15	3.78
		 Pull	51	0.42	0.93	1.44	1.95	2.46	2.97
		Double Push action Pull	63 51	1.26 10.2	1.89 1.53	2.52 2.04	3.15 2.55	3.78 3.06	4.41 3.57
10	4	 Push	100	1.25	2.37	3.63	4.12	5	6.12
		 Pull	88	0.91	1.79	2.67	3.55	4.43	5.31
		Double Push action Pull	100 88	2.00 1.76	3.00 2.64	4.00 3.52	5.00 4.40	6.00 5.28	7.00 6.16
12	6	 Push	150	2.44	4.08	5.40	6.88	8.37	10.12
		 Pull	123	1.61	2.84	4.07	5.30	6.53	7.76
		Double Push action Pull	150 123	3.00 2.46	4.50 3.69	6.00 4.92	7.50 6.15	9.00 7.38	10.5 8.61
16	6	 Push	200	3.50	5.00	7.40	8.20	9.10	12.00
		 Pull	173	1.51	3.25	4.95	6.75	8.45	10.15
		Double Push action Pull	200 173	4.00 3.46	6.00 5.20	8.00 6.90	10.00 8.70	12.00 10.40	14.00 12.10
20	8	 Push	380	4.63	8.78	12.93	15.98	19.52	24.15
		 Pull	330	3.70	5.88	10.30	13.6	16.9	20.20
		Double Push action Pull	380 330	7.60 6.60	11.4 9.90	15.2 13.20	19.00 16.5	22.80 19.80	26.60 23.10
25	10	 Push	430	6.40	11.70	16.20	21.50	26.30	31.20
		 Pull	352	3.52	4.14	7.66	11.18	14.70	18.22
		Double Push action Pull	430 352	8.60 7.04	12.90 10.56	17.20 14.08	21.50 17.60	25.80 21.12	30.10 24.64

Strokes

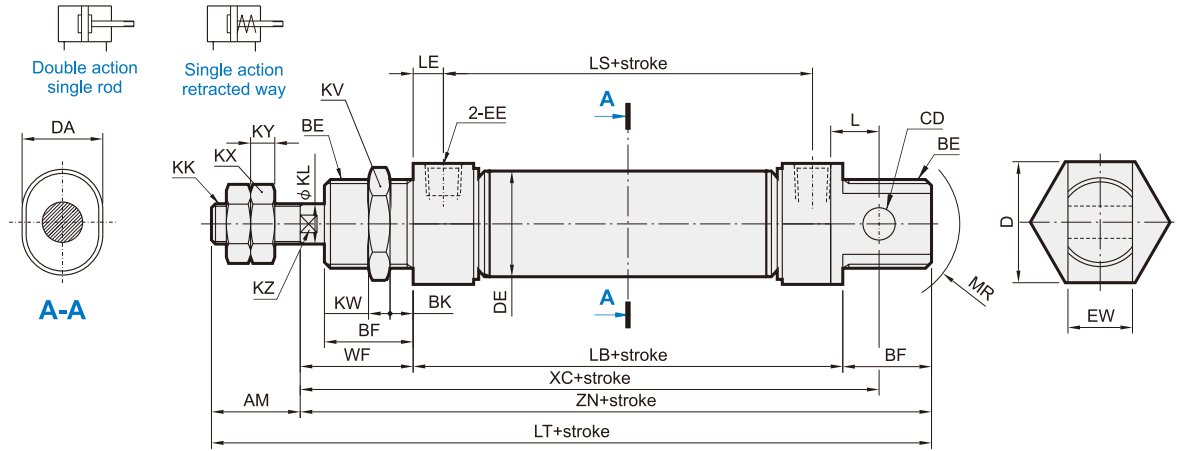
Function			 Hole-rod			 Hole-rod	
Tube I.D.							
8	5, 10, 15, 20, 25, 30, 40, 50, 80, 100						
10	5, 10, 15, 20, 25, 30, 40, 50, 80, 100						
12	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160						
16	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160, 200						
20	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160, 200, 300						
25	5, 10, 15, 20, 25, 30, 40, 50, 80, 100, 160, 200, 300, 400, 500, 650						

Note: Special strokes are available on request.



No.	Accessories	Page
1	Mounting accessories LB	J-57
2	Mounting accessories FA/FB	J-58
3	Mounting accessories SDB+PIN	J-58
4	Floating joint MFC	R-01
5	Floating joint MFCS	R-03
6	Female rod ends PHS	R-04
7	Sensor switch RCS+BK-81	J-57,R-12
8	Fitting PC (PISCO)	—
9	Speed controller JSC (PISCO)	—

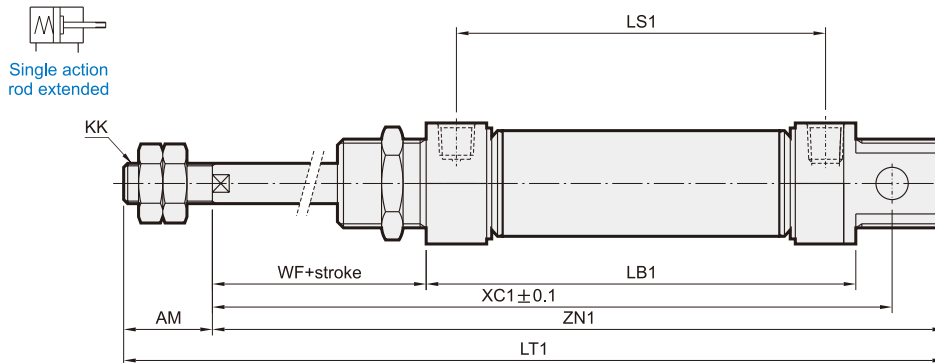
OVAL MICRO-CYLINDER



Code Tube I.D.	AM	BE	BF	BK	CD (H9)	D	DA	DE	EE	EW (d13)	KL	KK	KV	KW	KX	KY	KZ
8	12	M12×1.25	13	7	4	14	8.3	11.8	M5	8	4	M4	19	6	7	2	-
10	12	M12×1.25	13	7	4	14	10.3	14.3	M5	8	4	M4	19	6	7	2	-
12	16	M16×1.5	17	8	6	20	12.3	17.3	M5	12	6	M6	23	8	10	3	5
16	16	M16×1.5	17	8	6	20	14.3	19.8	M5	12	6	M6	23	8	10	3	5
20	20	M22×1.5	20	9	8	27	20.5	25.5	G1/8	16	8	M8	32	11	13	4	7
25	22	M22×1.5	22	11	8	27	22.5	26.5	G1/8	16	10	M10×1.25	32	11	17	5	9

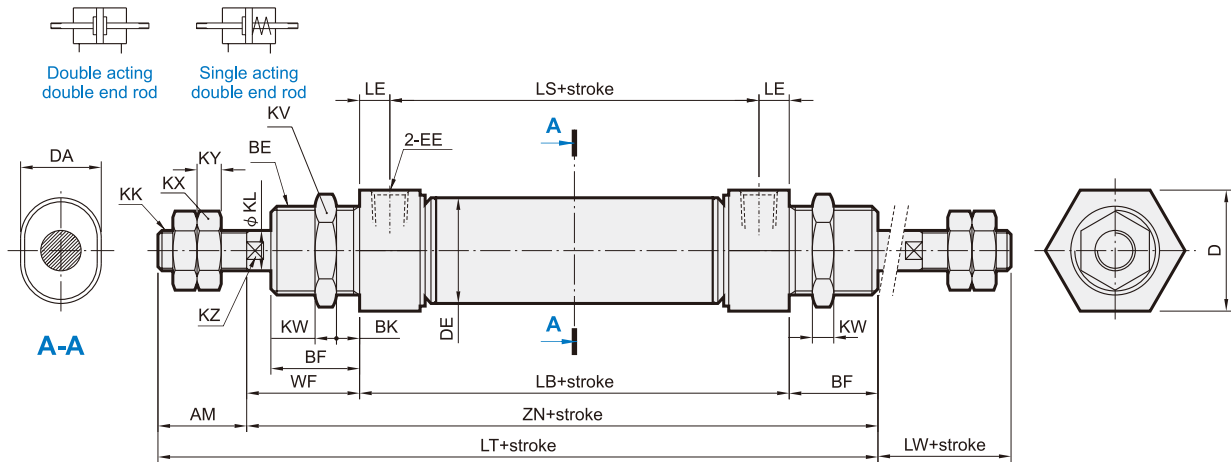
Code Tube I.D.	L	LB	LE	LS	LT	MR	WF ± 1.2	XC ± 1	ZC	ZN
8	6	45	6	33	86	18	16	64	20	74
10	6	45	6	33	86	18	16	64	20	74
12	9	46	6	34	101	22	22	75	20	85
16	9	54	6	41	107	22	20	82	20	91
20	12	68	8	51	132	25	24	95	20	112
25	12	72	8	56	144	25	28	104	20	122

※ Dimension ISO 6432



Code Tube I.D.	LB1			LS1			LT1			XC1			ZN1		
	10	25	50	10	25	50	10	25	50	10	25	50	10	25	50
8	65	95	145	53	83	133	116	161	236	94	139	214	104	149	224
10	65	95	145	53	83	133	116	161	236	94	139	214	104	149	224
12	66	96	146	54	84	134	131	176	251	105	150	225	115	160	235
16	74	104	154	61	91	141	137	182	257	112	157	232	121	166	241
20	88	118	168	71	101	151	162	207	282	125	170	245	142	187	262
25	92	122	172	76	106	156	174	219	294	134	179	254	152	197	282

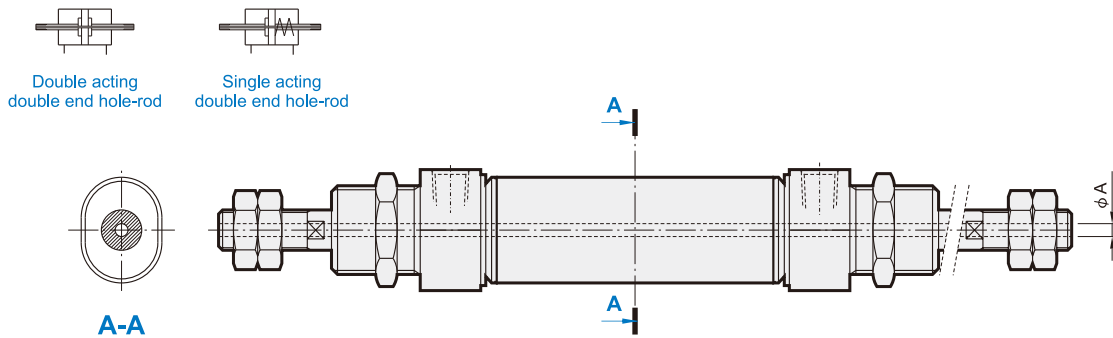
OVAL MICRO-CYLINDER



Code Tube I.D.	AM	BE	BF	BK	D	DA	DE	EE	KL	KK	KV	KW	KX	KY	KZ
8	12	M12×1.25	13	7	14	8.3	11.8	M5	4	M4	19	6	7	2	-
10	12	M12×1.25	13	7	14	10.3	14.3	M5	4	M4	19	6	7	2	-
12	16	M16×1.5	17	8	20	12.3	17.3	M5	6	M6	23	8	10	3	5
16	16	M16×1.5	17	8	20	14.3	19.8	M5	6	M6	23	8	10	3	5
20	20	M22×1.5	20	9	27	20.5	25.5	G1/8	8	M8	32	11	13	4	7
25	22	M22×1.5	22	11	27	22.5	26.5	G1/8	10	M10×1.25	32	11	17	5	9

Code Tube I.D.	LB	LE	LS	LT	LW	WF ±1.2	ZC	ZN
8	45	6	33	86	15	16	20	73
10	45	6	33	86	15	16	20	73
12	46	6	34	102	22	22	20	85
16	53	6	41	107	20	22	20	92
20	67	8	51	132	23	24	20	112
25	72	8	56	143	29	28	20	121

※ Dimension ISO 6432



Code Tube I.D.	A +0.15 +0
8	1
10	1
12	1.2
16	1.2
20	3.2
25	3.2

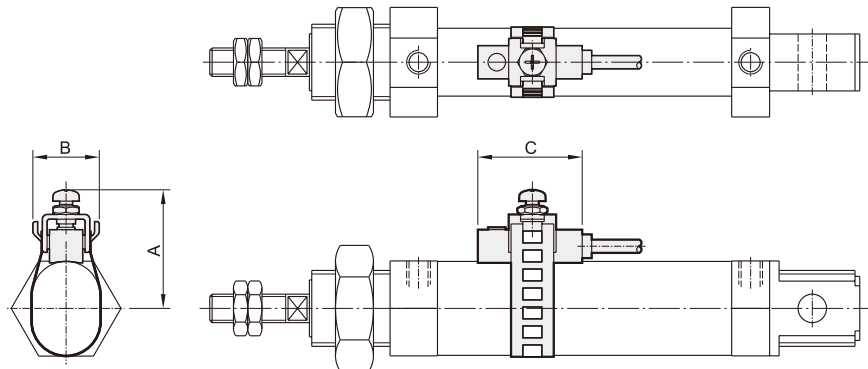
OVAL MICRO-CYLINDER

Mindman

Sensor switch: RCS

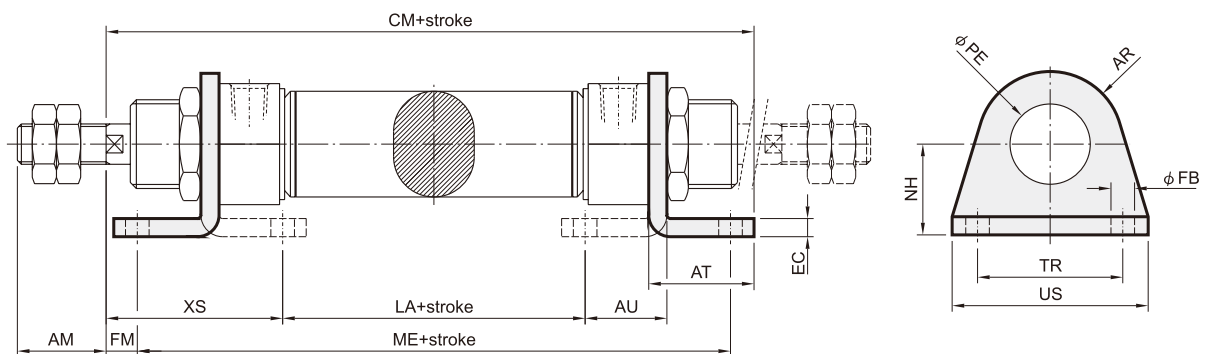
Sensor switch band: BK-81

Code Tube I.D.	A	B	C
8	19.5	15	22
10	21	15	22
12	22.5	15	22
16	23.5	15	22
20	26.5	15	22
25	27	15	22



■ Mounting accessories

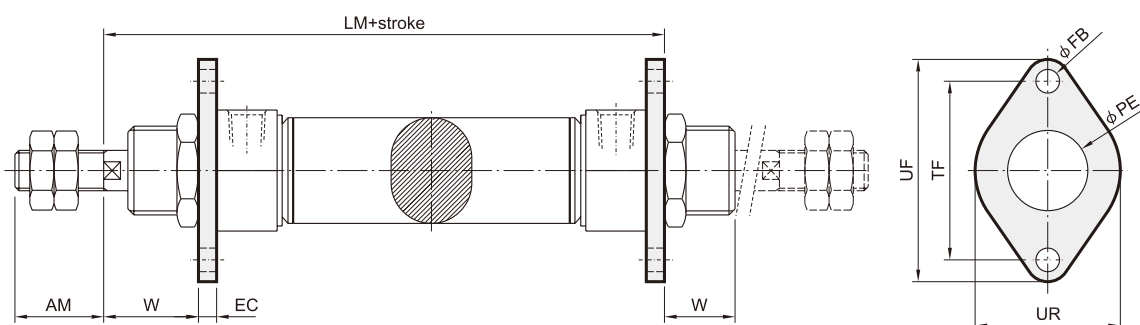
LB



Code Tube I.D.	AM	AR	AT	AU	CM	EC	FB	FM	LA	ME	NH	PE	TR	US	XS
8	12	10	16	10.5	76	4.5	3	5	30	67	16	12.1	25	35	23.5
10	12	10	16	10.5	76	4.5	3	5	30	67	16	12.1	25	35	23.5
12	16	12	21	13	89	5.5	4	9	27	74	20	16.1	32	42	32
16	16	12	21	13	101	5.5	4	9.5	34	80.5	20	16.1	32	42	32.5
20	20	20	29	17	117	6.5	5	8.5	43.5	101.5	25	22.1	40	54	36.5
25	22	20	29	17	131.5	6.5	5	12.5	48.5	108	25	22.1	40	54	40

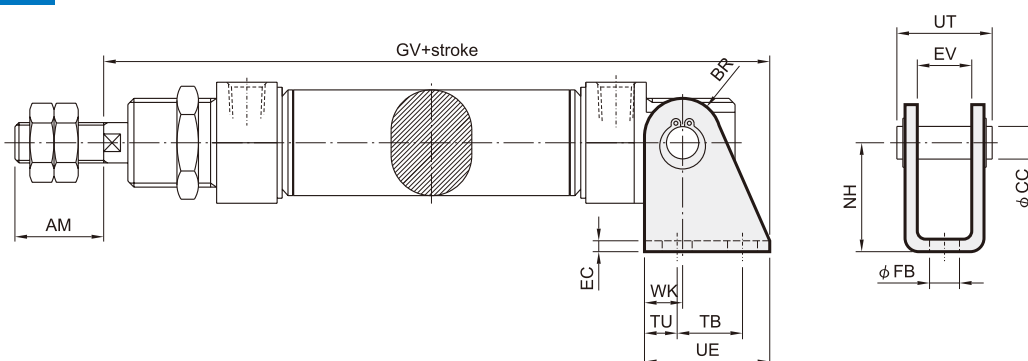
OVAL MICRO-CYLINDER

FA



Code Tube I.D.	AM	EC	FB	LM	PE	TF	UF	UR	W
8	12	3	4.5	64	12.1	30	40	25	13
10	12	3	4.5	64	12.1	30	40	25	13
12	16	4	5.5	72	16.1	40	53	30	18
16	16	4	5.5	79	16.1	40	53	30	18
20	20	5	6.5	96	22.1	50	66	40	20
25	22	5	6.5	105	22.1	50	66	40	24

SDB



Code Tube I.D.	AM	BR	CC	EC	EV	FB	GV	NH	TB	TU	UE	UT	WK
8	12	5	4	2.5	8.1	4.5	82	24	12.5	6.5	23	17	5
10	12	5	4	2.5	8.1	4.5	82	24	12.5	6.5	23	17	5
12	16	7	6	3	12.1	5.5	93	27	15	5	25	23	8
16	16	7	6	3	12.1	5.5	100	27	15	5	25	23	8
20	20	10	8	4	16.1	6.5	117	30	20	6	32.5	30	10
25	22	10	8	4	16.1	6.5	126.5	30	20	6	32.5	30	10