MIL-DTL 38999 Serie III Aluminium Series

Connector part numbers

Basic Series	8D	0	-	11	W	35	P	N	**

Shell style:
0: Square flange receptacle
1: In line receptacle
7: Jam nut receptacle
5: Plug with RFI shielding.

Type:
-: Connectors with standard crimp contacts.
L: Receptacle with long spill (male and female size #22D, #20).
C: Receptacle with short spill (male and female #22D, #20, #16).
S: Receptacle with specific spill (male et female #22D)
W: Receptacle with male contacts #22D for wire wrap (3 wraps)
T: Receptacle with male contacts #20 for wire wrap (2 wraps)

Shell size: 09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating:
W: Olive drab cadmium
F: Nickel
ZC: Green zinc cobalt
Z: Black zinc nickel

Contact layout: See page 8 to 11

Contact type:
P: Pin. **A:** Connector supplied less pin contact or with specific contacts (connector marking: A + orientation).
S: Socket. **B:** Connector supplied less socket contact or with specific contacts (connector marking: B + orientation).

Orientation: N, A, B, C, D & E (see page 58)

Specification:
046: Tinned straight spills
251: Connector provided with power contacts (layouts with contact #8)
022: Fuel tank
L: For P or S contact type only, connectors delivered without contacts, connectors marking P or S plus orientation.

MIL-DTL-38999 part numbers*

Basic Series	D38999	20	W	B	35	P	N	L

Shell style:
20: Square flange receptacle
24: Jam nut receptacle
26: Plug with RFI shielding.

Plating:
W: Olive drab cadmium
F: Nickel

Shell size: A - B - C - D - E - F - G - H - J

Contact layout: See page 11 for layout according to MIL-DTL-38999

Contact type:
P: Pin. **A:** Connector supplied less pin contact or with specific contacts (connector marking: A + orientation).
S: Socket. **B:** Connector supplied less socket contact or with specific contacts (connector marking: B + orientation).

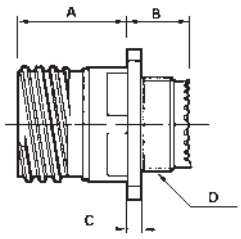
Orientation: N, A, B, C, D & E (see page 58)

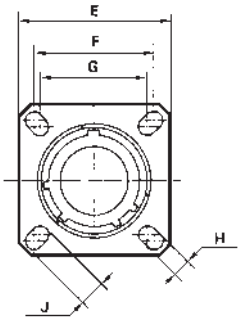
L: For P or S contact type only, connector delevired without contacts, connector marking P or S (without L)

* Note: To place an order of MIL connectors delivered without MIL removable crimp contacts and keep P or S plus orientation marking, it must be specify clearly on the order (by adding a suffix L at the end of the P/N or specified in comment).

Dimensions

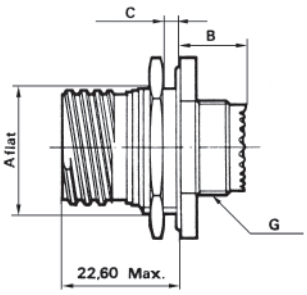
Receptacle type 0

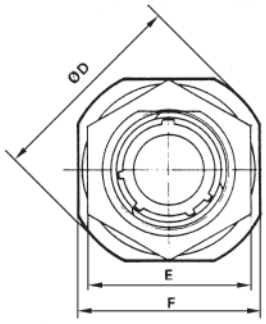




Shell size	A Max.	B Max.	C Max.	D thread	E ± 0,30	F	G	H ± 0,20	J ± 0,20
09 (A)	20.90	10.60	2.50	M12 x 1-6g	23.80	18.26	15.09	3.25	5.49
11 (B)	20.90	10.60	2.50	M15 x 1-6g	26.20	20.62	18.26	3.25	4.93
13 (C)	20.90	10.60	2.50	M18 x 1-6g	28.60	23.01	20.62	3.25	4.93
15 (D)	20.90	10.60	2.50	M22 x 1-6g	31.00	24.61	23.01	3.25	4.93
17 (E)	20.90	10.60	2.50	M25 x 1-6g	33.30	26.97	24.61	3.25	4.93
19 (F)	20.90	10.60	2.50	M28 x 1-6g	36.50	29.36	26.97	3.25	4.93
21 (G)	20.10	11.40	3.20	M31 x 1-6g	39.70	31.75	29.36	3.25	4.93
23 (H)	20.10	11.40	3.20	M34 x 1-6g	42.90	34.93	31.75	3.91	6.15
25 (J)	20.10	11.40	3.20	M37 x 1-6g	46.00	38.10	34.93	3.91	6.15

Receptacle type 7

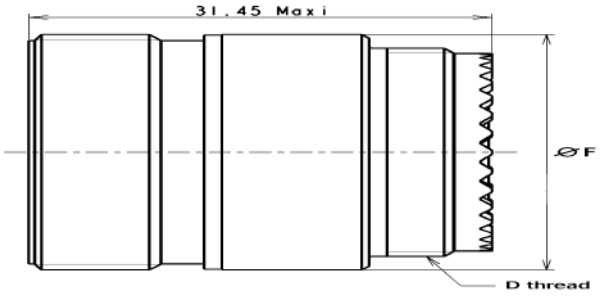




Shell size	A + 0,10 - 0,15	B Max.	C Max.	D Max.	E Max.	F ± 0,40	G thread
09 (A)	16.53	9.90	3.20	30.50	23.00	27.00	M12 x 1-6g
11 (B)	19.07	9.90	3.20	35.20	26.00	31.80	M15 x 1-6g
13 (C)	23.82	9.90	3.20	38.40	31.00	34.90	M18 x 1-6g
15 (D)	26.97	9.90	3.20	41.60	34.00	38.10	M22 x 1-6g
17 (E)	30.15	9.90	3.20	44.80	37.00	41.30	M25 x 1-6g
19 (F)	33.32	9.90	3.50	49.50	41.00	46.00	M28 x 1-6g
21 (G)	36.50	9.90	3.50	52.70	46.00	49.20	M31 x 1-6g
23 (H)	39.67	9.90	3.50	55.90	47.00	52.40	M34 x 1-6g
25 (J)	42.85	9.90	3.50	59.00	52.00	55.60	M37 x 1-6g

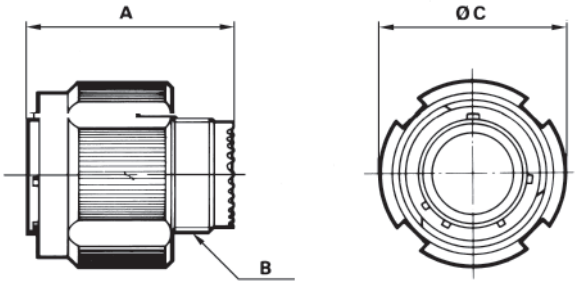
8D - D38999 Aluminium Series

In line receptacle type 1



Shell size	D thread	Ø F
09 (A)	M12 x 1-6g	15.90
11 (B)	M15 x 1-6g	19.05
13 (C)	M18 x 1-6g	22.25
15 (D)	M22 x 1-6g	25.40
17 (E)	M25 x 1-6g	30.15
19 (F)	M28 x 1-6g	31.75
21 (G)	M31 x 1-6g	34.75
23 (H)	M34 x 1-6g	37.10
25 (J)	M37 x 1-6g	41.30

Plug type 5



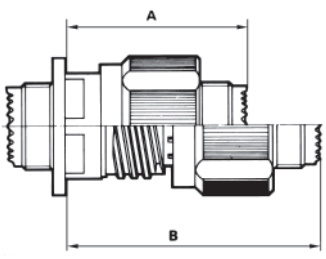
Shell size	A Max.	B thread	C Max.
09 (A)	31.00	M12 x 1-6g	21.80
11 (B)	31.00	M15 x 1-6g	25.00
13 (C)	31.00	M18 x 1-6g	29.40
15 (D)	31.00	M22 x 1-6g	32.50
17 (E)	31.00	M25 x 1-6g	35.70
19 (F)	31.00	M28 x 1-6g	38.50
21 (G)	31.00	M31 x 1-6g	41.70
23 (H)	31.00	M34 x 1-6g	44.90
25 (J)	31.00	M37 x 1-6g	48.00

Maximum coupling torque on panel for jam nut receptacle (type 7)

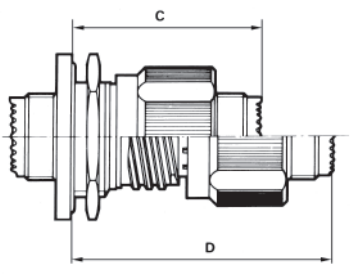
Shell	09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
Coupling torque (N.m)	6	8	10	13	20	23	25	26	28

Mated connectors dimensions

Type 0 with plug



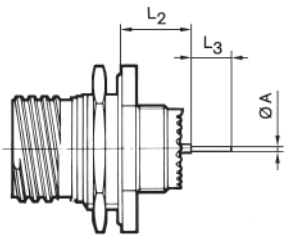
Type 7 with plug

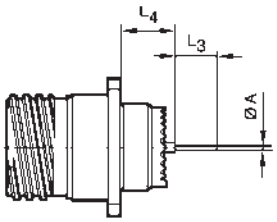


Shell size	A Max.	B Max.	C Max.	D Max.
09 (A)	37.00	52.30	38.30	53.60
11 (B)	37.00	52.30	38.30	53.60
13 (C)	37.00	52.30	38.50	53.80
15 (D)	37.00	52.30	38.50	53.80
17 (E)	37.00	52.30	38.50	53.80
19 (F)	37.00	52.30	38.50	53.80
21 (G)	36.00	51.30	38.50	53.80
23 (H)	36.00	51.30	38.50	53.80
25 (J)	36.00	51.30	38.50	53.80

Dimensions in millimeters

Receptacle with straight spill contacts





		Shell size			09 (A)	11 (B)	13 (C)	15 (D)	17 (E)	19 (F)	21 (G)	23 (H)	25 (J)
		Contact size	Contact type	Spill type									
A		# 22D	M & F	L & C					0.70				
		# 22D	M & F	S					0.50				
		# 20	M & F	C					0.70				
		# 16	M & F	C					1.15				
L2	Min.	# 22D	M	L & C	10.52					10.34			
	Max.	# 22D	M	L & C	11.46					11.28			
	Min.	# 22D	F	L & C	10.19					10.01			
	Max.	# 22D	F	L & C	11.46					11.28			
	Min.	# 22D	M	S	10.19					10.01			
	Max.	# 22D	M	S	11.46					11.28			
	Min.	# 22D	F	S	10.69					10.51			
	Max.	# 22D	F	S	11.63					11.45			
	Min.	# 20	M	C	10.36					10.18			
	Max.	# 20	M	C	11.63					11.45			
	Min.	# 20	F	C	10.69					10.51			
	Max.	# 20	F	C	11.63					11.45			
	Min.	# 16	M	C	10.69					10.51			
	Max.	# 16	M	C	11.63					11.45			
	Min.	# 16	F	C	10.69					10.51			
	Max.	# 16	F	C	11.63					11.45			
L3		# 22D	M & F	L					8.50				
		# 22D	M & F	C					4.00				
		# 22D	M & F	S					5.10				
		# 20	M & F	C					5.10				
		# 16	M & F	C					5.10				
L4	Min.	# 22D	M	L & C					9.48				
	Max.	# 22D	M	L & C				10.58				10.69	
	Min.	# 22D	F	L & C				9.15				9.26	
	Max.	# 22D	F	L & C				10.58				10.69	
	Min.	# 22D	M	S				9.65				9.76	
	Max.	# 22D	M	S				10.75				10.86	
	Min.	# 22D	F	S				9.15				9.26	
	Max.	# 22D	F	S				10.75				10.86	
	Min.	# 20	M	C				9.65				9.76	
	Max.	# 20	M	C				10.75				10.86	
	Min.	# 20	F	C				9.65				9.76	
	Max.	# 20	F	C				10.75				10.86	
	Min.	# 16	M	C				9.65				9.76	
	Max.	# 16	M	C				10.75				10.86	
	Min.	# 16	F	C				9.65				9.76	
	Max.	# 16	F	C				10.75				10.86	

M : Male contact **F:** Female contact **L:** Long spill **C :** Short spill **S:** Specific spill Dimensions in millimeters

Souriau backshells part numbers

Basic series	8D	102	B	02

Shell style:

09	11	13	15	17	19	21	23	25
101	102	103	104	105	106	107	108	109

Plating:
B: Olive drab cadmium
F: Nickel

Backshell type:
02: Straight cable clamp
03: 90° cable clamp
13: Backshell for heat shrink boots

Cross reference table

Backshell type	AS85049 Standard	SOURIAU part numbers
Straight cable clamp	M85049/38-**-x	8D101x02
90° cable clamp	M85049/39-**-x	8D101x03
Backshell for heat shrink boots	M85049/69-**-x	8D101x13
Backshell for screen termination and cable clamp	M85049/19**x**	N/A

x: Plating ****:** Shell size (See page 19 to 21)

Standard backshells part numbers

Straight cable clamp (M85049/38)

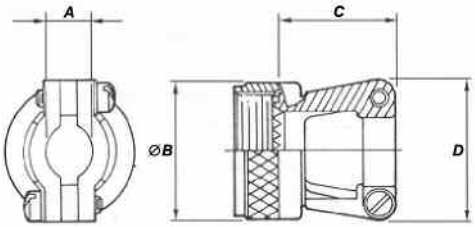
Basic series	M85049	38	-	11	W

Backshell type:
38: Straight cable clamp

Nut type:
-: Without self-locking
S: With self-locking

Shell size:
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating (See table 3):
A and **W** for 38 type
W and **N** for 38S type



See table 1 for dimensions

90° cable clamp (M85049/39)

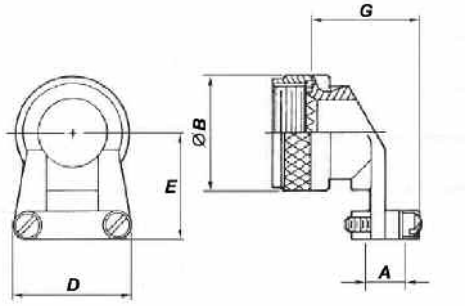
Basic series	M85049	39	-	11	W

Backshell type:
39: 90° cable clamp

Nut type:
-: Without self-locking
S: With self-locking

Shell size:
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating (See table 3):
A and **W** for 39 type
W and **N** for 39S type



See table 1 for dimensions

Table 1

Shell size	A Min	A Max.	ØB Max.	C Max.	D Max.	E	G
09	2.50	5.90	21.80	23.10	21.60	25.40	25.70
11	3.90		25.00		22.90	27.90	
13	4.80	8.30	29.40	25.70	27.90		30.70
15	6.60	11.60	32.50	26.90	29.20	31.80	32.00
17	7.20	15.60	35.70	29.50	33.00	33.00	35.80
19	8.30	16.10	38.50	35.80	38.10	34.30	38.40
21	8.70	17.70	41.70	38.40	40.60	40.60	42.20
23	9.70	20.90	44.90	42.20	43.20	44.50	44.70
25	10.60	21.70	48.00	44.70	45.70	47.00	48.50

Dimensions in millimeters

Backshell for heat shrink boots (M85049/69)

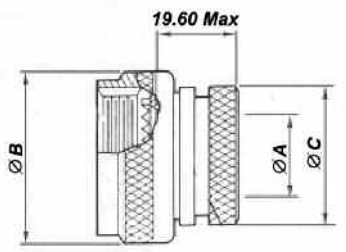
Basic series	M85049	69	11	A	D

Backshell type:
69: Straight backshell for heat shrink boot

Shell size:
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating:
A: see table 3

Option:
Nothing: Without drain hole
D: With drain hole



See table 2 for dimensions

Table 2

Shell size	ØB Max.	ØA Max.	ØC Max.
09	19.10	6.35	13.55
11	21.60	9.50	15.40
13	25.40	12.70	19.70
15	29.20	15.90	21.30
17	31.80	19.00	24.50
19	35.60	20.60	26.50
21	39.40	23.80	30.90
23	41.90	27.00	34.40
25	47.00	30.20	36.65

Dimensions in millimeters

Table 3

Plating	Description	Salt spray
A	Black anodise	500 Hrs
N, F	Nickel	48 Hrs
W, B	Olive drab cadmium over nickel	500 Hrs

Backshell for screen termination and cable clamp (M85049/19)

Basic Series	M85049/	19	11	W	03

Shell style:
19: Backshell for screen termination and cable clamp

Shell size:
09 - 11 - 13 - 15 - 17 - 19 - 21 - 23 - 25

Plating:
W: Olive drab cadmium
N: Nickel

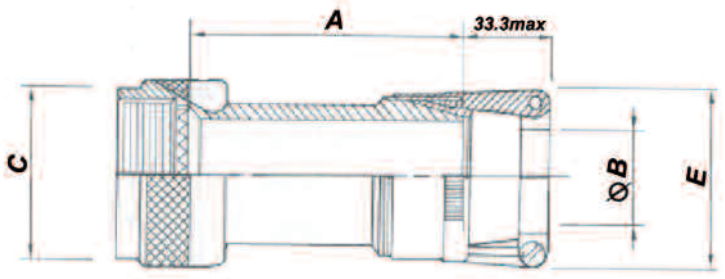
Clamp size indicator:
See table 4 and 5

Table 4

Shell size	A Max.	C Max.	Clamp indicator base on shell size
09		19.10	01 - 02
11		21.60	01 - 0 2 - 03
13		25.40	02 - 03 - 04
15		27.90	02 - 03 - 04 - 05
17	38.10	31.80	02 - 03 - 04 - 05 - 06
19		35.60	03 - 04 - 05 - 06 - 07
21		38.10	03 - 04 - 05 - 06 - 07 - 08
23		41.90	03 - 04 - 05 - 06 - 07 - 09
25		44.50	04 - 05 - 06 - 07 - 08 - 10

Table 5

Clamp size indicator	B Min.	B Max.	E
01	1.60	3.20	20.30
02	3.20	6.35	25.40
03	6.35	9.50	27.90
04	7.90	12.70	30.50
05	11.10	15.90	31.80
06	14.30	19.00	35.60
07	17.45	22.20	38.10
08	20.60	24.40	41.90
09	23.80	28.60	44.50
10	27.00	31.75	48.30

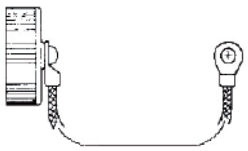


See table 4 & 5 for dimensions

Caps

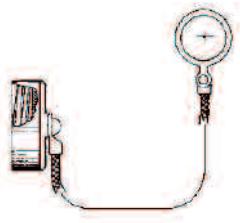
Caps for receptacle (D38999/33 - S2453)

With stainless steel rope and eyelet



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2453-09W-**	D38999/33 W 09 R
11	S2453-11W-**	D38999/33 W 11 R
13	S2453-13W-**	D38999/33 W 13 R
15	S2453-15W-**	D38999/33 W 15 R
17	S2453-17W-**	D38999/33 W 17 R
19	S2453-19W-**	D38999/33 W 19 R
21	S2453-21W-**	D38999/33 W 21 R
23	S2453-23W-**	D38999/33 W 23 R
25	S2453-25W-**	D38999/33 W 25 R

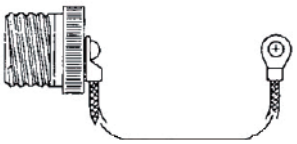
With stainless steel rope and ring



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2453-09W-**-1	D38999/33 W 09 N
11	S2453-11W-**-1	D38999/33 W 11 N
13	S2453-13W-**-1	D38999/33 W 13 N
15	S2453-15W-**-1	D38999/33 W 15 N
17	S2453-17W-**-1	D38999/33 W 17 N
19	S2453-19W-**-1	D38999/33 W 19 N
21	S2453-21W-**-1	D38999/33 W 21 N
23	S2453-23W-**-1	D38999/33 W 23 N
25	S2453-25W-**-1	D38999/33 W 25 N

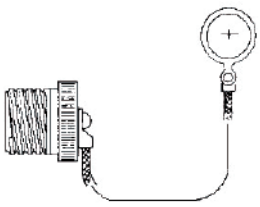
Caps for plug (D38999/32 - S2454)

With stainless steel rope and eyelet



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2454-09F-** S	D38999/32 W 09 R
11	S2454-11F-** S	D38999/32 W 11 R
13	S2454-13F-** S	D38999/32 W 13 R
15	S2454-15F-** S	D38999/32 W 15 R
17	S2454-17F-** S	D38999/32 W 17 R
19	S2454-19F-** S	D38999/32 W 19 R
21	S2454-21F-** S	D38999/32 W 21 R
23	S2454-23F-** S	D38999/32 W 23 R
25	S2454-25F-** S	D38999/32 W 25 R

With stainless steel rope and ring



Shell size	Part numbers	
	Plating **	Olive green plating
9	S2454-09W-** S	D38999/32 W 09 N
11	S2454-11W-** S	D38999/32 W 11 N
13	S2454-13W-** S	D38999/32 W 13 N
15	S2454-15W-** S	D38999/32 W 15 N
17	S2454-17W-** S	D38999/32 W 17 N
19	S2454-19W-** S	D38999/32 W 19 N
21	S2454-21W-** S	D38999/32 W 21 N
23	S2454-23W-** S	D38999/32 W 23 N
25	S2454-25W-** S	D38999/32 W 25 N

Plating - 34: Olive green cadmium - **Plating - 12:** Nickel. **Note:** caps available with nylon ropes. Consult us.

Connectors weight

	With contacts						Without contact					
	Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)		Plug (type 5)		Receptacle (type 0)		Receptacle (type 7)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
09 – 35	11.47	13.05	9.15	10.73	13.91	15.49	11.05	11.55	8.73	9.23	13.49	13.99
09 – 98	11.47	12.77	9.15	10.45	13.91	15.21	11.05	11.57	8.73	9.25	13.49	14.01
11 – 01	14.98	17.92	12.01	14.95	18.17	21.11	14.32	16.32	11.35	13.35	17.51	19.51
11 – 02	14.61	17.15	11.64	14.18	17.80	20.34	13.99	15.59	11.02	12.62	17.18	18.78
11 – 04	14.80	17.86	11.83	14.89	17.99	21.05	14.24	16.26	11.27	13.29	17.43	19.45
11 – 05	14.83	18.04	11.86	15.07	19.48	21.23	14.13	16.04	11.16	13.07	17.32	19.23
11 – 22	14.47	16.89	11.50	13.92	17.66	20.08	14.19	15.89	11.22	12.92	17.38	19.08
11 – 35	14.73	18.20	11.76	15.23	17.68	21.39	13.82	14.95	10.85	11.98	17.01	18.14
11 – 80	18.30	21.90	15.30	18.90	21.50	28.39	13.80	14.90	10.80	11.90	17.00	18.10
11 – 98	14.70	17.46	11.73	14.49	17.89	20.65	13.86	15.06	10.89	12.09	17.05	18.25
11 – 99	14.87	18.09	11.90	15.12	18.06	21.28	13.89	15.29	10.92	12.32	17.08	18.48
13 – 04	21.04	24.82	15.71	19.49	24.14	27.92	19.80	21.70	14.47	16.37	22.90	24.80
13 – 08	21.42	26.60	16.09	21.27	24.52	29.70	20.30	23.40	14.97	18.07	23.40	26.50
13 – 26	21.79	27.44	16.46	22.11	24.89	30.54	20.05	22.74	14.72	17.41	23.15	25.84
13 – 35	21.22	26.99	15.89	21.66	24.32	30.09	19.68	21.49	14.35	16.16	22.78	24.59
13 – 98	21.08	25.70	15.75	20.37	24.18	28.80	19.68	21.70	14.35	16.37	22.78	24.80
15 – 05	26.04	31.38	19.54	24.88	29.62	34.96	24.49	27.48	17.99	20.98	28.07	31.06
15 – 15	26.84	34.00	20.34	27.50	30.42	37.58	24.57	27.62	18.07	21.12	28.15	31.20
15 – 18	27.05	35.93	20.55	29.43	30.63	39.51	24.53	28.73	18.03	22.23	28.11	32.31
15 – 19	26.58	34.31	20.08	27.81	30.16	37.89	23.92	26.71	17.42	20.21	27.50	30.29
15 – 35	26.68	35.92	20.18	29.42	30.26	39.50	24.09	26.67	17.59	20.17	27.67	30.25
15 – 97	26.51	33.56	20.01	27.06	30.09	37.14	24.15	27.24	17.65	20.74	27.73	30.82
17 – 02	32.96	46.30	31.26	44.60	42.06	55.40	25.80	29.80	24.10	28.10	34.90	38.90
17 – 06	29.90	39.50	28.21	37.81	39.00	48.60	25.94	29.90	24.25	28.21	35.04	39.00
17 – 08	28.89	37.62	27.20	35.93	37.99	46.72	26.41	31.38	24.72	29.69	35.51	40.48
17 – 26	29.47	40.26	27.78	38.57	38.57	49.36	25.83	29.86	24.14	28.17	34.93	38.96
17 – 35	29.71	43.26	28.02	41.57	38.81	52.36	25.86	29.51	24.17	27.82	34.96	38.61
17 – 75	35.31	46.60	33.62	44.91	44.41	55.70	26.31	32.60	24.62	30.91	35.41	41.70
17 – 99	29.52	40.08	27.83	38.39	38.62	49.18	25.96	30.12	24.27	28.43	35.06	39.22
19 – 11	37.77	51.36	31.07	44.66	44.62	58.21	34.36	42.78	27.66	46.43	30.86	49.63
19 – 32	36.98	50.38	30.28	43.68	43.83	57.23	32.50	37.58	25.80	41.23	29.00	44.43
19 – 35	37.29	53.74	30.59	47.04	44.14	44.09	32.67	37.24	25.97	40.89	29.17	44.09
21 – 11	45.51	65.35	39.31	59.15	53.19	73.03	38.25	47.75	32.05	51.93	35.55	55.43
21 – 16	42.61	57.89	36.41	51.69	50.29	65.57	37.65	45.41	31.45	49.59	34.95	53.09
21 – 35	42.89	63.55	36.69	57.35	50.57	71.23	37.36	43.80	31.16	47.98	34.66	51.48
21 – 39	44.27	64.60	38.07	58.40	51.95	72.28	38.47	48.24	32.27	52.42	35.77	55.92
21 – 41	42.81	60.18	36.61	64.36	50.49	67.86	37.07	43.78	30.87	47.96	34.37	51.46
21 – 48	49.59	49.93	43.39	43.73	55.27	57.61	36.48	43.38	30.28	37.18	44.16	51.06
21 – 75	54.48	71.38	48.28	65.18	62.16	79.06	36.48	43.38	30.28	37.18	44.16	51.06
23 – 21	50.49	73.74	44.19	67.44	59.23	82.48	43.98	57.36	37.68	62.20	41.58	66.10
23 – 35	48.85	75.00	42.55	68.70	57.59	83.74	41.85	50.00	35.55	54.84	39.45	58.74
23 – 53	48.91	71.10	42.61	64.80	57.65	79.84	41.49	49.90	35.19	54.74	39.09	58.64
23 – 55	49.66	72.73	43.36	66.43	58.40	81.47	41.96	50.73	35.66	55.57	39.56	59.47
25 – 07	61.89	90.70	55.73	85.10	71.15	99.10	46.41	56.20	40.25	61.26	44.45	65.46
25 – 11	54.48	71.38	48.28	65.18	62.16	79.06	36.48	43.38	42.94	55.94	58.36	71.36
25 – 19	59.76	91.77	53.60	85.61	69.02	101.03	47.22	61.37	41.06	66.43	45.26	70.63
25 – 24	59.26	90.62	53.10	84.46	68.52	99.88	47.62	62.06	41.46	67.12	45.66	71.32
25 – 29	57.58	86.55	51.42	80.39	66.84	95.81	48.59	63.93	42.43	68.99	46.63	73.19
25 – 35	55.37	88.20	49.21	82.04	64.63	97.46	46.41	56.20	40.25	61.26	44.45	65.46
25 – 37	57.57	89.86	51.41	59.36	66.83	90.06	46.10	61.00	39.94	60.50	55.36	61.20
25 – 44	52.80	67.61	46.53	65.39	62.05	83.39	44.40	59.22	38.14	57.00	53.66	75.00
25 – 43	57.62	88.30	51.46	82.14	66.88	97.56	48.20	63.50	42.04	68.56	46.24	72.76
25 – 46	59.92	83.76	53.76	77.60	69.18	93.02	45.28	55.44	39.12	60.50	43.32	64.70
25 – 61	54.67	81.42	48.51	75.26	63.93	90.68	46.13	57.02	39.97	62.08	44.17	66.28
25 – 08	81.00	112.83	74.84	106.67	90.26	122.09	45.00	56.83	38.84	61.69	43.04	66.09
25 – 20	66.02	96.24	59.86	90.08	75.28	105.50	44.45	54.70	38.29	59.76	42.49	63.96
25 – 04	58.42	88.27	52.26	82.11	67.68	97.53	49.22	62.83	43.06	67.89	47.26	72.09

Weight in gram