

Customer Input-1

Description	Unit	Value
Nominal Voltage	Volts	28.0
Max Voltage	Volts	32.0
Minimum Voltage	Volts	24.0
Outer Diameter	mm	40.0
Height to Lid(max)	mm	100.0
Duration	sec	100.0
Maximum Weight	gm	500.0
Discharge Current	A	2.5
Capacity	A-S	250.0

Customer Input-2

S.NO	From	To	Current	Calculation Duration	A-S(Duration * Current)
1.	0	10	54	10	540
2.	10	20	10	10	100
3.	20	30	154	10	1540
4.	0	0	20	0	0
5.	0	0	123	0	0
6.	0	0	12	0	0
7.	0	0	78	0	0
8.	0	0	97	0	0
9.	0	0	9	0	0
10.	0	0	71	0	0
11.	0	0	60	0	0
12.	0	0	0	0	0
13.	0	0	0	0	0
Total					2180

Availability of Jig

S.No	Diameter of Jig
1	19
2	20

3	22
4	23
5	23.5
6	24
7	26
8	28
9	30
10	32
11	34
12	35
13	37
14	37.5
15	38
16	43
17	40
18	45
19	48
20	50

Determination of Pellet Dia

Item	Qty	Thickness_1	Thickness_2	Total_Thickness
Container od				40.0
Designed container		0.7		
Container ID				38.6
FX-70	2.0	1.6	3.2	6.4
Flexible Samica	1	0.1	0.1	0.2
Mica Strips	2	0.15	0.3	0.6
Samica Strips	2	0.1	0.2	0.4
Leads	1	0.15	0.15	0.3
Glass Cloth	1	0.1	0.1	0.4
Net Dia meter				30.3

Cathode Diameter	30
Anode Diameter	28

Sample data

Electrode	Diameter - mm	Area - cm.sq	Weight-gms	Thickness - mm	Density - gms/cc	Weight/cm ²
Anode without cup	22.50	3.98	0.20	0.47	1.07	0.05
Anode with cup	23.50	4.34	0.38	0.51	1.72	
Cathode	24.00	4.53	0.61	0.48	2.81	0.13
Electrolyte	24.00	4.53	0.40	0.47	1.88	0.09
Heatpallet - 1	24.00	4.53	1.17	0.67	3.86	0.26
Heatpallet - 2	24.00	4.53	1.14	0.63	4.00	0.25
Heatpallet - 3	24.00	4.53	1.02	0.58	3.89	0.23
SS Plate at Cathode	24.00	4.53	0.16	0.05	7.07	
Capacity-As (specified)	175	250.0				
Capacity Target-As	210	300.0				
Observed Capacity at-50C(old)	280					
Invar cut off voltage per cell	1.5					
Invar Max Voltage at +70	29.94					
Invar Max voltage per cell at +70	1.87					
Estimated cells for new battery at Max		17.0				
Estimated cells for new battery at Cutoff		16.0				
Anode Diameter	22.50	28				
Cathod Diameter	24.50	30				
Ratio of Capacity		1.07				

Weights

Electrode	Diameter-mm	Area-cm sq	weight based on capacity ratio for Anode & Cathode & Area ratio for HP & electrolyte	Thickness-mm	Density gms/cc	Weight cm ²	Total Weight
Anode without cup	28	6.15	0.21	0.32	1.07	0.03	3.57
Anode with cup	28	6.15	0.47	0.4	1.91		7.99
Cathode	30	7.07	0.65	0.33	2.81	0.09	11.05
Electrolyte	30	7.07	0.64	0.48	1.88	0.09	10.88
Heatpallet - 1	30	7.07	1.84	0.67	3.86	0.26	31.28
Heatpallet - 2	30	7.07	1.77	0.63	4.00	0.25	10.62
Heatpallet - 3	30	7.07	1.63	0.59	3.89	0.23	8.15
SS Plate at Cathode	30	7.07	0.26	0.05	7.33		4.42

SS Plate at Anode	30	7.07	0.26	0.05	7.33		4.42
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S.NO	Item Description	Length	width	Thickness
1.	Fiberfro strips Stack Wrap	100.0	103.62	1.6
2.	Fiberfro strip Container Insulation	100.0	103.62	1.6
3.	Flexible Samica Wrap	100.0	103.62	0.1

Cost Sheet

S.No	Item Desc ription	Dia	Length	Width	Thickness	Qty/bty	Units of Purchase	Density	Area	Volume	Weight/ SFT	Rate per unit of Purchase	Cost
1	LID												
1.1	LID BLANK					1							
1.2	DELIVER PIN					4							
1.3	GLASS TO METAL SEAL												
2	LID ASSEMBLY-A												
2.1	Lid					1	NO's					700.0	700
2.2	Tie wire		100.0	3.0	0.2	3	gms	9	3.0	0.06	0.00162	3025.0	4.9
2.3	Glass Textolyte Disc (Pin Isolater)					1	NO's					500.0	500
2.4	Pin Connectors					2	NO's					500.0	1000
2.5	Lead for Anode		100.0	6.0	0.15	3	gms	9	6.0	0.09	0.00243	2750.0	6.68
2.6	Lead for Cathode		100.0	6.0	0.15	2	gms	9	6.0	0.09	0.00162	2750.0	4.46
3	SQUIB ASSEMBLY												
3.1	Squib Terminals		50.0	6.0	0.15	2	gms	9	3.0	0.045	0.00081	2750.0	2.23
3.2	Squib					1	NO's					80.0	80
3.3	Pyro wicks-01		60.0	5.0	0.3	1	gms		3.0	0.09		100.0	100
3.4	FX-70 disc	30.0			1.6	3	SFT		2119.5		0.022679	211.0	4.7853

3.5	Glass Textolyte Disc-A(Top)					1	NO's					500.0	500
3.6	Glass Textolite Disc-A (Bottom)					1	NO's					500.0	500
4	TOP ASSEMBLY												
4.1	Mica Disc					1	NO's					5.0	5
4.2	HEAT PELLET-2	30			0.63	6	gms	4.00	7.07	0.45	10.62	0.0	0
4.3	Fiberfrox Disc	30.0			1.6	7	SFT		4945.5		0.052917	211.0	11.1655
4.4	S.S Disc (0.8mm)					1	NO's					20.0	20
5	CELL ASSEMBLY												
5.1	Current collectors S.S Disc (0.05mm) - Anode	28			0.05	17.0	gms	8	7.07	0.0354	0.004814	900.0	4
5.2	Current collectors S.S Disc (0.05mm) - Cathode	30			0.05	17.0	gms	8	7.07	0.0354	0.004814	900.0	4
5.3	Anode pellets				0.32	17.0	gms		6.15	0.1968	3.57	0.0	0
5.4	Cathode pellets				0.33	17.0	gms		7.07	0.23	11.05	0.0	0
5.5	Electrolyte pellets				0.48	17.0	gms		7.07	0.34	10.88	0.0	0
5.6	Heatpellet - 1				0.67	17.0	gms		7.07	0.47	31.28	0.0	0
5.7	Current collectors for Anode		40.0	6.0	0.15	2	gms	9	2.4	0.04	0.00072	2750.0	2
5.8	Current Collectors for Cathode		90.0	6.0	0.15	2	gms	9	5.4	0.08	0.00144	2750.0	4
6	BOTTOM ASSEMBLY												
6.1	Mica Disc					2	NO's					5.0	10
6.2	HEAT PELLET - 3	30			0.59	5	gms	0.58	7.07	0.42	8.15	0.0	0
6.3	Fiberfrox Disc	30.0			1.6	6	SFT		4239.0		0.045357	211.0	9.5703
6.4	S.S Disc(0.8mm)					1	NO's					20.0	20
6.5	Brace Plate					1	NO's					22.0	22

[illegible]

c	Licl	45									0.000212	7600.0	1.6112	
d	KCl	55									0.000259	247.0	0.063973	
e	Mgo	20									0.000118	925.0	0.10915	
2	Cathode pellet													
a	Fes2	73.5									0.008934	90.0	0.80406	
b	Li2S	1.5									0.000182	2622670.0	477.32594	
c	EB(80:20)	25									2.7625			
d	Licl	45									0.001094	7600.0	8.3144	
e	KCl	55									0.001337	247.0	0.330239	
f	Mgo	20									0.000608	925.0	0.5624	
3	Electrolyte													
a	EB(60:40)													
b	Licl	45									0.003231	7600.0	24.5556	
c	KCl	55									0.003949	247.0	0.975403	
d	Mgo	40									0.004787	925.0	4.427975	
4	Heat pellet													
a	Fe	87									0.047898	37205.0	1782.04509	
b	Kclo4	13									0.007157	945.0	6.763365	
	Total											73489.180181		
