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	А	2.5
Capacity	A-S	250.0

Customer Input-2

S.NO	From	То	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					
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								

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 7.0	0.26 0.05	7.33	4.42
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S.NO	Item Description	Length	width	Thickness
1.	Fiberfrox strips Stack Wrap	100.0	103.62	1.6
2.	Fiberfrox 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	u	D											
1.1	LID BLANK					1							
1.2	DELIVER PIN					4							
1.3	GLASS TO METAL SEAL												
2	LID ASSE	MBLY-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 AS	SEMBLY											
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 AS	SEMBLY											
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 A	SSEMBLY											
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

7	TIE WIRE	CRIMPING											
7.1	Stack pyro Wicks-02		100.0	6.0	0.75	4	gms		6.0	0.45	0.0027	100.0	0
7.2	Flexible Samica Strips for Tie wires		100.0	10.0	0.1	6	gms	1.5	10.0	0.1	0.0009	3929.0	4
7.3	Mica Strips for Tie wire					3	NO's					4.0	12
7.4	Mica Strips for Leads					4	NO's					5.0	20
8	STACK	WRAP											
8.1	Fiberfrox strips Stack Wrap		100.0	103.62	1.6	2	SFT		20724.0		0.221747	211.0	46.7886
8.2	Glass Cloth Tape					1						10.0	10
8.3	Glass Cloth Gum Tape					1						10.0	10
8.4	Flexible Samica Wrap		100.0	103.62	0.1	2	gms	1.5	103.62	1.04	0.0	3929.0	0.0
9	CONTAINER ASSEMBLY												
9.1	Container					1	NO's					825.0	825
9.2	Fiberfrox strip Container Insulation		100.0	103.62	1.6	2	SFT		20724.0		0.221747	211.0	46.7886
9.3	Silicon Bonded mica disc for Housing	38.0			1.0	9	gms	2.15	11.3354	1.13	0.021865	370.0	8.09
9.4	Fiberfrox Disc	38.0			1.6	8	SFT		9068.32		0.097031	211.0	20.4735
9.5	Battery Cap					1	NO's					13.0	13
9.6	Argon gas cylinders					14	cum					3640.0	50960
9.7	Helium gas cylinders					1	cum					130.0	130
		Ratio(%)											
1	Anode pellet												
а	Lisi	85									0.003338	79197.0	264.359586
b	EB(80:20)	15									0.5355		

C EB(80-20) 25							1						l	<u> </u>
e Mgo 20	С	Licl	45									0.000212	7600.0	1.6112
2 Cathode pellet a Fes2 73.5	d	KCI	55									0.000259	247.0	0.063973
a Fes2 73.5	e	Mgo	20									0.000118	925.0	0.10915
b Li2S 1.5	2	Cathode pellet												
c EB(80:20) 25	а	Fes2	73.5									0.008934	90.0	0.80406
d Liel 45	b	Li2S	1.5									0.000182	2622670.0	477.32594
e KCI 55 0.001337 247.0 0.330239 f Mgo 20 0.000608 925.0 0.5624 3 Electrolyte a EB(60:40) 0.003231 7600.0 24.5556 c KCI 55 0.003949 247.0 0.975403 d Mgo 40 0.004787 925.0 4.427975 4 Heat pollet a Fe 87 0.047898 37205.0 1782.04508 b Kclo4 13 0.007157 945.0 6.763365	С	EB(80:20)	25									2.7625		
f Mgo 20 0.000608 925.0 0.5624 3 Electrolyte a EB(60:40) 0.003231 7600.0 24.5566 c KCl 55 0.003949 247.0 0.975403 d Mgo 40 0.004787 925.0 4.427975 4 Heat pellet a Fe 87 0.0047898 37205.0 1782.04508 b Kolo4 13 0.007157 945.0 6.763365	d	Licl	45									0.001094	7600.0	8.3144
3 Electrolyte a EB(60:40)	е	KCI	55									0.001337	247.0	0.330239
a EB(60:40) b Licl 45 c KCl 55 d Mgo 40 d Heat pellet a Fe 87 b Kclo4 13 D .003231 7600.0 24.5556 0 .003231 7600.0 24.5556 0 .003949 247.0 0.975403 0 .004787 925.0 4.427975 4 Heat pellet 0 .047898 37205.0 1782.04508	f	Mgo	20									0.000608	925.0	0.5624
b Licl 45	3	Electi	rolyte											
c KCI 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 1782.04508 b Kclo4 13 0.007157 945.0 6.763365	а	EB(60:40)												
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	b	Licl	45									0.003231	7600.0	24.5556
4 Heat pellet a Fe 87 b Kclo4 13 0.007157 945.0 6.763365	С	KCI	55									0.003949	247.0	0.975403
a Fe 87 0.047898 37205.0 1782.04509 b Kclo4 13 0.007157 945.0 6.763365	d	Mgo	40									0.004787	925.0	4.427975
b Kclo4 13 0.007157 945.0 6.763365	4	Heat	pellet											
	a	Fe	87									0.047898	37205.0	1782.04509
Total 73489.180181	b	Kclo4	13									0.007157	945.0	6.763365
		Total										73489.180181		