

The attached highlights the quantities and lengths needed for the Minerva detector for the following:

- Fiber connectors
- Clear fibers
- WLS fibers

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11/8/2006

Connectors

	Base number	Spare+Waste	Total to Order	Notes
Ferrules in ODU	3784	18.6%	4488	Base is from DocDB106-v12 channel count (Detector Parameters sheet)
Ferrules in Cables	7568	17.0%	8852	Spares and wastes also from DocDB106-v12 (Fiber and Connector Costs sheet, top)
Ferrules for Scint Assemblies	3784	8.2%	4095	
Total Ferrules	15136		17435	Agrees to within 0.005% with DocDB106-v12
 Adapters to Order	 7568		 8583	 ODUs + Ferrules for Scint Assemblies
 Tracking Prototype Ferrules			 3487	 Assume straight 20%
Tracking Prototype Adapters			1717	Assume straight 20%
 TP ODU ferrules			 898	
TP ODU adapters			898	

Clear Fiber

From Jaewon's DocDB487-v3
Spare and waste from DocDB106-v12

Type	Units	Fibers per Unit	Length (in)	Total Fiber Length (in)	Spare/Waste Cables	Spare/Waste Canes	Spare/Waste per fiber (in)	Number of Canes to Order	Order Length in cm
ID short	196	96	42	790272	14.7%	0.0%	0.984251969	21575	109.2
ID med	196	16	54	169344	14.7%	0.0%	0.984251969	3596	139.7
ID long	196	16	123	385728	14.7%	0.0%	0.984251969	3596	315
OD short	108	16	42	72576	14.7%	0.0%	0.984251969	1982	109.2
OD med	108	0	54	0	14.7%	0.0%	0.984251969	0	139.7
OD long	108	32	123	425088	14.7%	0.0%	0.984251969	3963	315
ODUs	1892	8	19.7	297953	16.3%	0.0%	0.984251969	17599	52.5

Summary of Order

Length	Total Count	TP	Total Count	length	Cutback test fiber
109.2	23557		4712	2572424.4	
139.7	3596		720	502361.2	
315	7559		1512	2381085	
52.5	17599		3520	923947.5	
500	220		44		220
				total non-cutback fiber length	
				6379818.1	
				number preforms	
				22	
				total length including cutback fiber	
				6489818.1	

WLS Fiber

DocDb841-v1 spreadsheets are source for ID and OD fiber lengths

Parameters

Extra Fiber Length (in) 3
 OD Frames 108
 ID Scint Planes 196
 Fibers per Preform 10

<u>Bare Lengths (Ordered, mm)</u>	<u>Scratch Col</u>	<u># This Length</u>	<u>Spare/Waste Canes</u>	<u>Spare/Waste /fiber (in)</u>	<u>Fiber Length (cm)</u>	<u>Total Fibers</u>	<u>Total Length in Order (km)</u>
1980	<1,980	5184	7.2%	4.968503937	210.7	5555	11.704385
2178	<2,178	3136	7.2%	4.968503937	230.5	3361	7.747105
2285	<2,285	3136	7.2%	4.968503937	241.2	3361	8.106732
2430	<2,430	3136	7.2%	4.968503937	255.7	3361	8.594077
2904	<2,904	6272	7.2%	4.968503937	303.1	6721	20.371351
2904	<2,904	0	7.2%	4.968503937	303.1	0	0
3065	<3,065	6272	7.2%	4.968503937	319.2	6721	21.453432
3065	<3,065	0	7.2%	4.968503937	319.2	0	0
3210	<3,210	3136	7.2%	4.968503937	333.7	3361	11.215657
5000	<5,000	0	7.2%	4.968503937	512.7	310	1.58937
CHANGE THIS COLUMN BUT KEEP THEM IN ORDER		30272					90.782109
		MUST BE 30272					Total preforms
							31
							length cutback fiber
				cutback test fiber	300	310	0.93
							Total WLS fiber
							91.712109

WLS Fiber Lengths from Design

DocDb841-v1 spreadsheets are source for ID and OD fiber lengths

FIBER & BAR NUMBER	Detector	# of Fibers	TOTAL FIBER LGTH
1	OD	648	1978.94
2	OD	648	1975.96
3	OD	648	1976.59
4	OD	648	1973.57
5	OD	648	1975.05
6	OD	648	1971.97
7	OD	648	1972.73
8	OD	648	1969.91
65	ID	392	3208.02
66	ID	392	3184.14
67	ID	392	3162.29
68	ID	392	3142.73
69	ID	392	3125.21
70	ID	392	3110.22
71	ID	392	3097.26
72	ID	392	3085.83
73	ID	392	3063.22
74	ID	392	3053.57
75	ID	392	3045.18
76	ID	392	3037.56
77	ID	392	3030.95
78	ID	392	3025.11
79	ID	392	3019.77
80	ID	392	3014.94
81	ID	392	2972.01
82	ID	392	2962.36
83	ID	392	2953.72
84	ID	392	2946.10
85	ID	392	2939.49
86	ID	392	2933.65
87	ID	392	2928.31
88	ID	392	2923.48
89	ID	392	2901.89
90	ID	392	2892.23
91	ID	392	2883.60
92	ID	392	2875.97
93	ID	392	2869.11
94	ID	392	2863.27
95	ID	392	2857.93
96	ID	392	2852.85
97	ID	392	2838.62
98	ID	392	2828.71
99	ID	392	2820.08
100	ID	392	2812.20
101	ID	392	2805.34
102	ID	392	2798.99
103	ID	392	2793.14
104	ID	392	2787.81
105	ID	392	2427.12
106	ID	392	2403.75
107	ID	392	2382.16
108	ID	392	2362.35
109	ID	392	2345.07
110	ID	392	2330.08
111	ID	392	2316.87
112	ID	392	2305.69
113	ID	392	2283.85
114	ID	392	2274.19
115	ID	392	2265.81
116	ID	392	2258.19
117	ID	392	2251.83
118	ID	392	2245.99
119	ID	392	2240.65
120	ID	392	2235.82
121	ID	392	2177.15
122	ID	392	2167.49
123	ID	392	2158.85
124	ID	392	2151.49
125	ID	392	2119.48
126	ID	392	2139.03
127	ID	392	2133.70
128	ID	392	2133.44