



Legac-E Education

3390 Capacity Chart

The IBM documentation has two tables but this one represents data without keys which was thought to be the norm.

Block size in bytes		Record per	
Minimum	Maximum	Track	Cylinder
27999	56664	1	15
18453	27998	2	30
13683	18452	3	45
10797	13682	4	60
8907	10796	5	75
7549	8906	6	90
6519	7548	7	105
5727	6518	8	120
5065	5726	9	135
4567	5064	10	150
4137	4566	11	165
3769	4136	12	180
3441	3768	13	195
3175	3440	14	210
2943	3174	15	225
2711	2942	16	240
2547	2710	17	255
2377	2546	18	270
2213	2376	19	285
2083	2212	20	300
1947	2082	21	315
1851	1946	22	330
1749	1850	23	345



Legac-E Education

3390 Capacity Chart

Block size in bytes		Record per	
Minimum	Maximum	Track	Cylinder
1647	1748	24	360
1551	1646	25	375
1483	1550	26	390
1387	1482	27	405
1319	1386	28	420
1251	1318	29	435
1183	1250	30	450
1155	1182	31	465
1087	1154	32	480
1019	1086	33	495
985	1018	34	510
951	985	35	525
889	950	36	540
855	888	37	555
821	854	38	570
787	820	39	585
753	786	40	600
719	752	41	615
691	718	42	630
657	690	43	645
623	656	44	660
589	622	45	675
555	588	46	690
521	554	48	720
487	520	49	735



Legac-E Education

3390 Capacity Chart

Block size in bytes		Record per	
Minimum	Maximum	Track	Cylinder
459	486	50	750
425	458	52	780
391	424	54	810
357	390	55	825
323	356	57	855
289	322	59	885
255	288	61	915
227	254	64	960
193	226	66	990
159	192	69	1035
125	158	72	1080
91	124	75	1125
57	90	78	1170
23	56	82	1230
0	22	86	1290

The disk drive had 15 read/write stations and the volume which was not removable, had 15 recording surfaces with each plate being around 12-14 inches in diameter. A cylinder was the vertical alignment of all fifteen read/write stations, and there were 1113, 2226, 3339, or 10017 such positions depending upon the 3390 Model.

Information on how to use the table follows.



Legac-E Education

3390 Capacity Chart

Note that left hand columns reflect block size not logical record length and therefore to check the capacity for Fixed Length Record, it was necessary to divide the block size by the logical record length, and multiple the result by the value in the right hand columns to understand how many records would fit on a track or cylinder.

Example 1 – How many 80 byte records per track at BLKSIZE=13340

The formula is:

$$\text{Records per track} = (\text{BLKSIZE}/\text{LRECL}) * \text{column 3 value}$$

therefore

$$\text{Records per track} = (13340/80)*4$$

$$\text{Records per track} = 672$$

To determine how many tracks 4,500 records would need the formula is:

$$\text{Tracks} = 4500/672$$

$$\text{Tracks} = 7$$

Example 2 - How many 80 byte records per track at BLKSIZE=3600

However if the block size were small say 3600, then:

$$\text{Records per track} = (3600/80)*13$$

$$\text{Records per track} = 585$$

To determine how many tracks 4,500 records would need the formula is:

$$\text{Tracks} = 4500/585$$

$$\text{Tracks} = 8$$

Although the reduction in space utilization of larger block size looks negligible, it offers a considerable saving in reduced I/O activity. Remember that under normal circumstances each data block requires one I/O to transfer it to/from storage.

Where possible it is good policy to use BLKSIZE=0 to allow the system to determine the block size on output operations. It is also good practice to allocate space by using the average record size rather than TRK or CYL, i.e. **SPACE=(80, (200, 200)) ,AVGREC=K** to optimize space allocation.