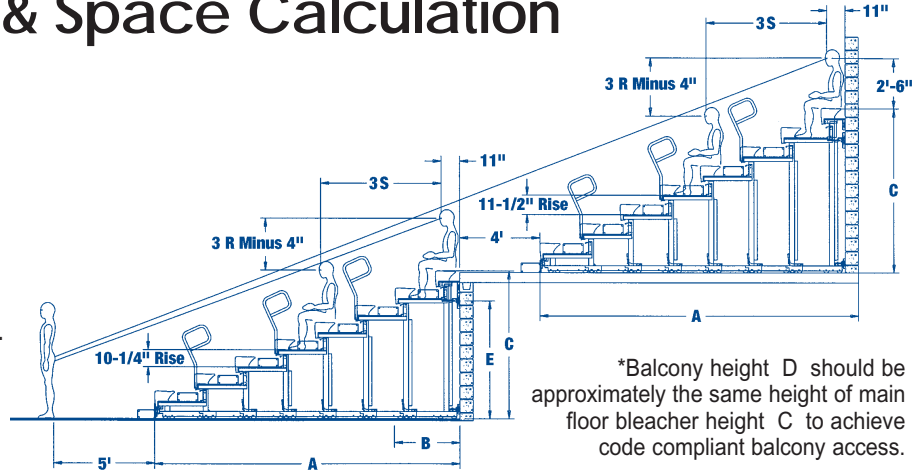


# Bleacher Sight Line & Space Calculation

## Code (for illustration and space charts)

- "A" Depth of gymnasium seating extended.
- "B" Depth of gymnasium seating closed.
- "C" Height of unit. (top row seat height)
- "D" Balcony height.
- "E" Wall Tie height.

S = Seat Spacing (22", 24", 26", 30", 32" or 33").  
 R = Rise (10-1/4" or 11-1/2").



\*Balcony height D should be approximately the same height of main floor bleacher height C to achieve code compliant balcony access.

## Table of Dimensions (metric equivalents in centimeters)

No.	Extended Dimension – Forward Fold*						Seatboard Height**	Wall Tie Height**	Seatboard Height**	Wall Tie Height**
	22" Span (56 cm)	24" Span (61 cm)	26" Span (66 cm)	30" Span (76 cm)	32" Span (82 cm)	33" Span (84 cm)	"C" 10-1/4"/(26cm) Rise	"E" 10-1/4"/(26cm) Rise	"C" 11-1/2"/(29cm) Rise	"E" 11-1/2"/(29cm) Rise
	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)	Ft. (cm)
3	5'-1/2" (154)	5'-2-1/2" (159)	5'-6-1/2" (170)	6'-6-1/4" (199)	6'-8-1/4" (204)	6'-9-1/4" (207)	3'-1" (94)	1'-7" (48)	3'-4-3/4" (103)	1'-9-1/2" (55)
4	6'-10-1/2" (210)	7'-2-1/2" (220)	7'-8-1/2" (236)	9'-1/4" (275)	9'-4-3/16" (285)	9'-6-1/4" (291)	3'-11-1/4" (120)	2'-5-1/4" (74)	4'-4-1/4" (132)	2'-9" (84)
5	8'-8-1/2" (266)	9'-2-1/2" (281)	9'-10-1/2" (302)	11'-6-1/4" (352)	12-3/16" (367)	12'-3-1/4" (374)	4'-9-1/2" (146)	3'-3-1/2" (100)	5'-3-3/4" (161)	3'-8-1/2" (113)
6	10'-6-1/2" (322)	11'-2-1/2" (342)	12'-1/2" (368)	14'-1/4" (428)	14'-8-3/16" (448)	15'-1/4" (458)	5'-7-3/4" (172)	4'-1-3/4" (126)	6'-3-1/4" (191)	4'-8" (142)
7	12'-4-1/2" (378)	13'-2-1/2" (403)	14-2-1/2" (434)	16'-6-1/4" (504)	17'-4-3/16" (529)	17'-9-1/4" (542)	6'-6" (198)	5'-0" (152)	7'-2-3/4" (220)	5'-7-1/2" (171)
8	14'-2-1/2" (434)	15'-2-1/2" (464)	16'-4-1/2" (500)	19'-1/4" (580)	20'-3/16" (611)	20'-6-1/4" (626)	7'-4-1/4" (224)	5'-10-1/4" (178)	8'-2-1/4" (249)	6'-7" (201)
9	16'-1/2" (490)	17'-2-1/2" (525)	18'-6-1/2" (566)	21'-6-1/4" (656)	22'-8-3/16" (692)	23'-3-1/4" (710)	8'-2-1/2" (250)	6'-8-1/2" (204)	9'-1-3/4" (278)	7'-6-1/2" (230)
10	17'-10-1/2" (546)	19'-2-1/2" (586)	20'-8-1/2" (632)	24'-1/4" (733)	25'-4-3/16" (773)	26'-1/4" (793)	9'-0-3/4" (276)	7'-6-3/4" (230)	10'-1-1/4" (308)	8'-6" (259)
11	19'-8-1/2" (601)	21'-2-1/2" (647)	22'-10-1/2" (698)	26'-6-1/4" (809)	28'-3/16" (854)	28'-9-1/4" (877)	9'-11" (302)	8'-5" (256)	11'-0-3/4" (337)	9'-5-1/2" (288)
12	21'-6-1/2" (657)	23'-2-1/2" (708)	25'-1/2" (764)	29'-1/4" (885)	30'-8-3/16" (936)	31'-6-1/4" (961)	10'-9-1/4" (328)	9'-3-1/4" (283)	12'-0-1/4" (366)	10'-5" (317)
13	23'-4-1/2" (713)	25'-2-1/2" (769)	27'-2-1/2" (830)	31'-6-1/4" (961)	33'-4-3/16" (1017)	34'-3-1/4" (1045)	11'-7-1/2" (354)	10'-1-1/2" (309)	12'-11-3/4" (395)	11'-4-1/2" (347)
14	25'-2-1/2" (769)	27'-2-1/2" (830)	29'-4-1/2" (896)	34'-1/4" (1037)	36'-3/16" (1098)	37'-1/4" (1129)	12'-5-3/4" (380)	10'-11-3/4" (335)	13'-11-1/4" (424)	12'-4" (376)
15	27'-1/2" (825)	29'-2-1/2" (891)	31'-6-1/2" (962)	36'-6-1/4" (1114)	38'-8-3/16" (1180)	39'-9-1/4" (1213)	13'-4" (406)	11'-10" (361)	14'-10-3/4" (454)	13'-3-1/2" (405)
16	28'-10-1/2" (881)	31'-2-1/2" (952)	33'-8-1/2" (1028)	39'-1/4" (1190)	41'-4-3/16" (1261)	42'-6-1/4" (1296)	14'-2-1/4" (432)	12'-8-1/4" (387)	15'-10-1/4" (483)	14'-3" (434)
17	30'-8-1/2" (937)	33'-2-1/2" (1013)	35'-10-1/2" (1094)	41'-6-1/4" (1266)	44'-3/16" (1342)	45'-3-1/4" (1380)	15'-0-1/2" (458)	13'-6-1/2" (413)	16'-9-3/4" (512)	15'-2-1/2" (463)
18	32'-6-1/2" (993)	35'-2-1/2" (1074)	38'-1/2" (1160)	44'-1/4" (1342)	46'-8-3/16" (1423)	48'-1/4" (1464)	15'-10-3/4" (484)	14'-4-3/4" (439)	17'-9-1/4" (541)	16'-2" (493)
19	34'-4-1/2" (1048)	37'-2-1/2" (1135)	40'-2-1/2" (1226)	46'-6-1/4" (1418)	49'-4-3/16" (1505)	50'-9-1/4" (1548)	16'-9" (510)	15'-3" (465)	18'-8-3/4" (570)	17'-1-1/2" (522)
20	36'-2-1/2" (1104)	39'-2-1/2" (1196)	42'-4-1/2" (1292)	49'-1/4" (1495)	52'-3/16" (1586)	53'-6-1/4" (1632)	17'-7-1/4" (536)	16'-1-1/4" (491)	19'-8-1/4" (600)	18'-1" (551)
21	38'-1/2" (1160)	41'-2-1/2" (1257)	44'-6-1/2" (1358)				18'-5-1/2" (562)	16'-11-1/2" (517)	20'-7-3/4" (629)	19'-0-1/2" (580)
22	39'-10-1/2" (1216)	43'-2-1/2" (1318)	46'-8-1/2" (1424)				19'-3-3/4" (588)	17'-9-3/4" (543)	21'-7-1/4" (658)	20'-0" (610)
23	41'-8-1/2" (1272)	45'-2-1/2" (1379)	48'-10-1/2" (1490)				20'-2" (614)	18'-8" (569)	22'-6-3/4" (687)	20'-11-1/2" (639)
24	43'-6-1/2" (1328)	47'-2-1/2" (1440)	51'-1/2" (1556)				21'-0-1/4" (640)	19'-6-1/4" (595)	23'-6-1/4" (716)	21'-11" (668)
25	45'-4-1/2" (1384)	49'-2-1/2" (1501)	53'-2-1/2" (1622)	<b>CONSULT FACTORY</b>	<b>CONSULT FACTORY</b>	<b>CONSULT FACTORY</b>	21'-10-1/2" (666)	20'-4-1/2" (621)	24'-5-3/4" (746)	22'-10-1/2" (697)
26	47'-2-1/2" (1440)	51'-2-1/2" (1562)	55'-4-1/2" (1689)	<b>CONSULT FACTORY</b>	<b>CONSULT FACTORY</b>	<b>CONSULT FACTORY</b>	22'-8-3/4" (692)	21'-2-3/4" (647)	25'-5-1/4" (775)	23'-10" (726)
27	49'-1/2" (1495)	53'-2-1/2" (1622)	57'-6-1/2" (1755)				23'-7" (718)	22'-1" (673)	26'-4-3/4" (804)	24'-9-1/2" (756)
28	50'-10-1/2" (1551)	55'-2-1/2" (1683)	59'-8-1/2" (1821)				24'-5-1/4" (744)	22'-11-1/4" (699)	27'-4-1/4" (833)	25'-9" (785)
29	52'-8-1/2" (1607)	57'-2-1/2" (1744)	61'-10-1/2" (1887)				25'-3-1/2" (770)	23'-9-1/2" (725)	28'-3-3/4" (863)	26'-8-1/2" (814)
30	54'-6-1/2" (1663)	59'-2-1/2" (1805)	64'-1/2" (1953)				26'-1-3/4" (796)	24'-7-3/4" (751)	29'-3-1/4" (892)	27'-8" (843)

\* For Reverse-Fold or Mobile Operation, ADD 4-1/2" to Extended Dimension.

\*\* For Closure Board / Last Deck Height, SUBTRACT 6-3/16" from Seatboard Height. (Typ. all seating surfaces)

## Closed Dimension

No. Rows	Forward Fold <sup>2,3</sup>			Reverse Fold <sup>1,3</sup>			Mobile <sup>3</sup>
	Manual	Friction	Non-Friction	Manual	Friction	Non-Friction	Manual
	22 / 24	22 / 24	22 / 24	22 / 24	22 / 24	22 / 24	22 / 24
3-10	3'-2-5/8" (98)	3'-2-5/8" (98)	3'-8-1/2" (113)	3'-8-1/4" (112)	5'-8-1/4" (173)	5'-8-1/4" (173)	3'-6-1/4" (107)
11-12	3'-2-5/8" (98)	3'-2-5/8" (98)	3'-8-1/2" (113)	3'-8-1/4" (112)	5'-8-1/4" (173)	5'-8-1/4" (173)	3'-6-1/4" (107)
13	3'-2-5/8" (98)	3'-2-5/8" (98)	3'-8-1/2" (113)	5'-8-1/4" (173)	5'-8-1/4" (173)	5'-8-1/4" (173)	3'-6-1/4" (107)
14	3'-2-5/8" (98)	3'-2-5/8" (98)	5'-4-1/2" (163)	5'-8-1/4" (173)	5'-8-1/4" (173)	5'-8-1/4" (173)	3'-6-1/4" (107)
15	3'-2-5/8" (98)	3'-2-5/8" (98)	5'-4-1/2" (163)	Not Recommended	5'-8-1/4" (173)	5'-8-1/4" (173)	Not Recommended
16-20	Not Recommended	3'-2-5/8" (98)	5'-4-1/2" (163)	Not Recommended	5'-8-1/4" (173)	5'-8-1/4" (173)	Not Recommended

For projects over 24 rows, consult factory.

<sup>1</sup> 26" Span, add 4" to stack size. Aisle recovery may also change stack size.

<sup>2</sup> 26" Span, add 2" to stack size.

<sup>3</sup> SSAR – Add 4-1/8" SSM-10 4-7/16"

SSAR – Add 4-1/8" SSM-12 4-7/16"

SSAR – Add 2-1/4" CSM-10 2-9/16"

SSAR – Add 1" CSM-12 1-5/16"

10.25R

11.5R

## Closed Dimension – Wide Deck (Wall Attached Only)

No. Rows	Manual			Power*		
	30"	32"	33"	30"	32"	33"
3-10	4'-0-1/4" (123)	4'-2-1/2" (128)	4'-3-1/2" (131)	4'-0-1/4" (123)	4'-2-1/2" (128)	4'-3-1/2" (131)
11-20	Not Recommended	Not Recommended	Not Recommended	4'-0-1/4" (123)	4'-2-1/2" (128)	4'-3-1/2" (131)

\* All dimensions for the power section of this chart are based on the Wide Track power system.