Table 21.4 Fresnel module price summary, base case [4]

Annual plant production (module/year)	101 700
Unit price (1990$/module)	320.076
Base year	1989
Simulation length (years)	10
Plant capacity factor (%)	100.000
Annual plant operating time (h/year)	8519
Maximum number of shifts per working day	3
Required return on investment (fraction)	0.200
Debt to equity ratio (fraction)	0.250
Combined fed/state income tax rate (fraction)	0.340

Product price components in first full year of production (end of year dollars)

Component	1990$/module	% of total
Annual sales	320.076	100.00
Annual manufacturing expense	289.366	90.41
Annual direct material expense	219.758	68.66
Annual direct labor expense	14.592	4.56
Annual manufacturing overhead	55.016	17.19
Net annual work-in-process	0.297	0.09
Net finished goods inventory	0.000	0.00
Selling & administrative expense	9.155	2.86
Corporate income taxes payable	6.679	2.09
Excess revenue (interest earned)	12.966	0.50
Annual net income	1.612	4.05

Initial work station equipment cost ($1989)	4 260 447
Initial facility cost ($1989)	3 158 375
Total manufacturing area (sq ft)	39 453
Total nonmanufacturing area (sq ft)	11 532
Total facility area (sq ft)	50 985
Total land cost ($1989)	124 036
Total direct manufacturing labor (# workers)	56
Total indirect manufacturing labor (# workers)	19
Total indirect nonmanufacturing labor (# workers)	43
Total plant labor (# workers)	118

the center section of Table 21.4. Direct manufacturing costs are about 90% of the total cost, with materials accounting for 69%. The 17% contribution of manufacturing overhead is composed of manufacturing supervision labor, equipment and facilities depreciation, plus other smaller items, but about half of the 17% is the R&D budget assigned to the business, which corresponds to 8.5% of sales. In the bottom section of Table 21.4 are the costs of process equipment and buildings, and the number of people employed in the business.

Any study of future costs benefits from an examination of the sensitivity of the result to different values of critical input parameters, because it contributes to understanding the