



Figure 4.126 Schematic diagram of the internal structure of various types of photomultiplier tube: (a) squirrel cage; (b) box and grid; (c) venetian blind; (d) focused dynode. D = dynode; PC = photocathode.

Table 4.8 CHARACTERISTICS OF PHOTOEMISSIVE SURFACES

Cathode	Radiant Sensitivity (mA/W)			Peak Quantum Efficiency (%)	λ_{peak} (nm)	Dark Current ^a (A/cm ²)
	515 nm	694 nm	1.06 μm			
S-1 Cs-O-Ag	0.6	2	0.4	0.08	800	9×10^{-13}
S-10 Cs-O-Ag-Bi ^b	20	2.7	0	5	470	4×10^{-16}
S-11 Cs ₃ Sb on MnO ^c	39	0.2	0	13	440	10^{-16}
S-20 (Cs)Na ₂ KSb (tri-alkali)	53	20	0	18	470	3×10^{-16}
S-22 (bi-alkali)	42	0	0	26	390	$1-6 \times 10^{-18}$
GaAs ^{d-g}	48	28	0	14	560 ^h	10^{-16}
GaAsP ^d	60	30	0	19	400 ^h	3×10^{-15}
InGaAs ^{d,e}	—	—	4.3	—	— ^h	3×10^{-14}
InGaAsP ^{d,f}	—	—	—	47	300 ^h	2.5×10^{-13}
S-25 (ERMA) ⁱ	53	26	0	25	430	1×10^{-15}
Cs-Te (solar blind)	—	—	—	15	254	2.5×10^{-17}

Figure 4.143 Typical $D^*(\lambda)$ curves for various thermal detectors assuming total absorption of incident radiation. The operating temperature, modulation frequency, and typical useful wavelength range are shown for each detector. In each case, the detector is assumed to view a hemispherical surround at a temperature of 300 K.

