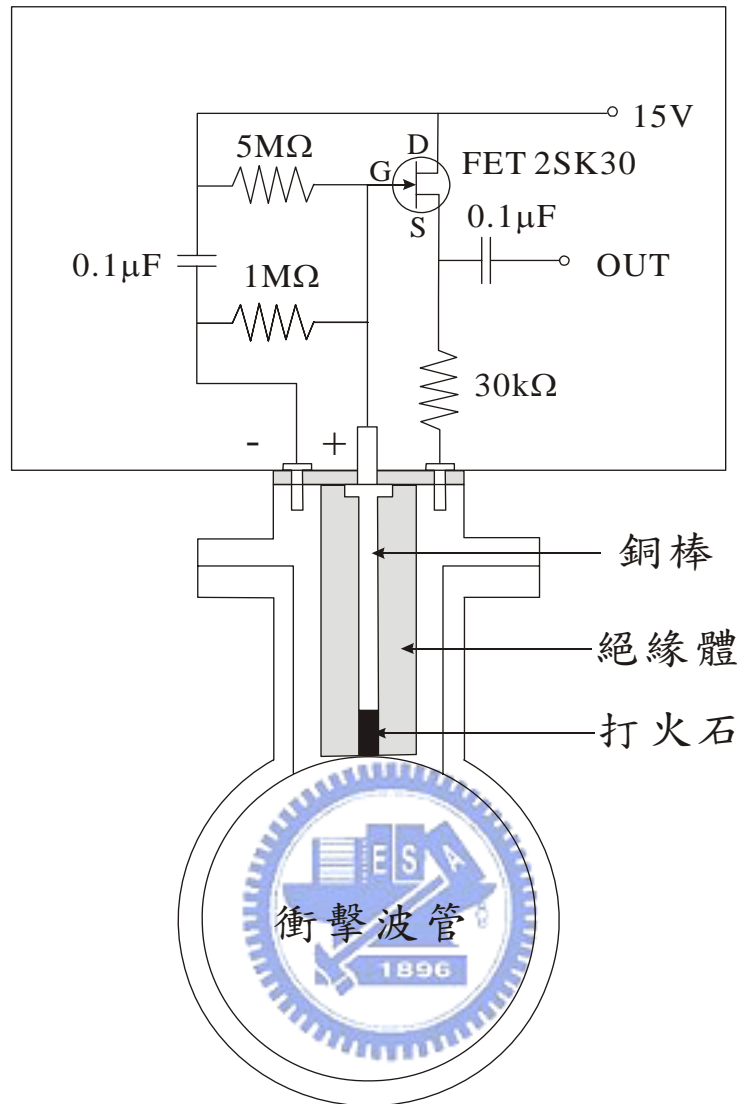
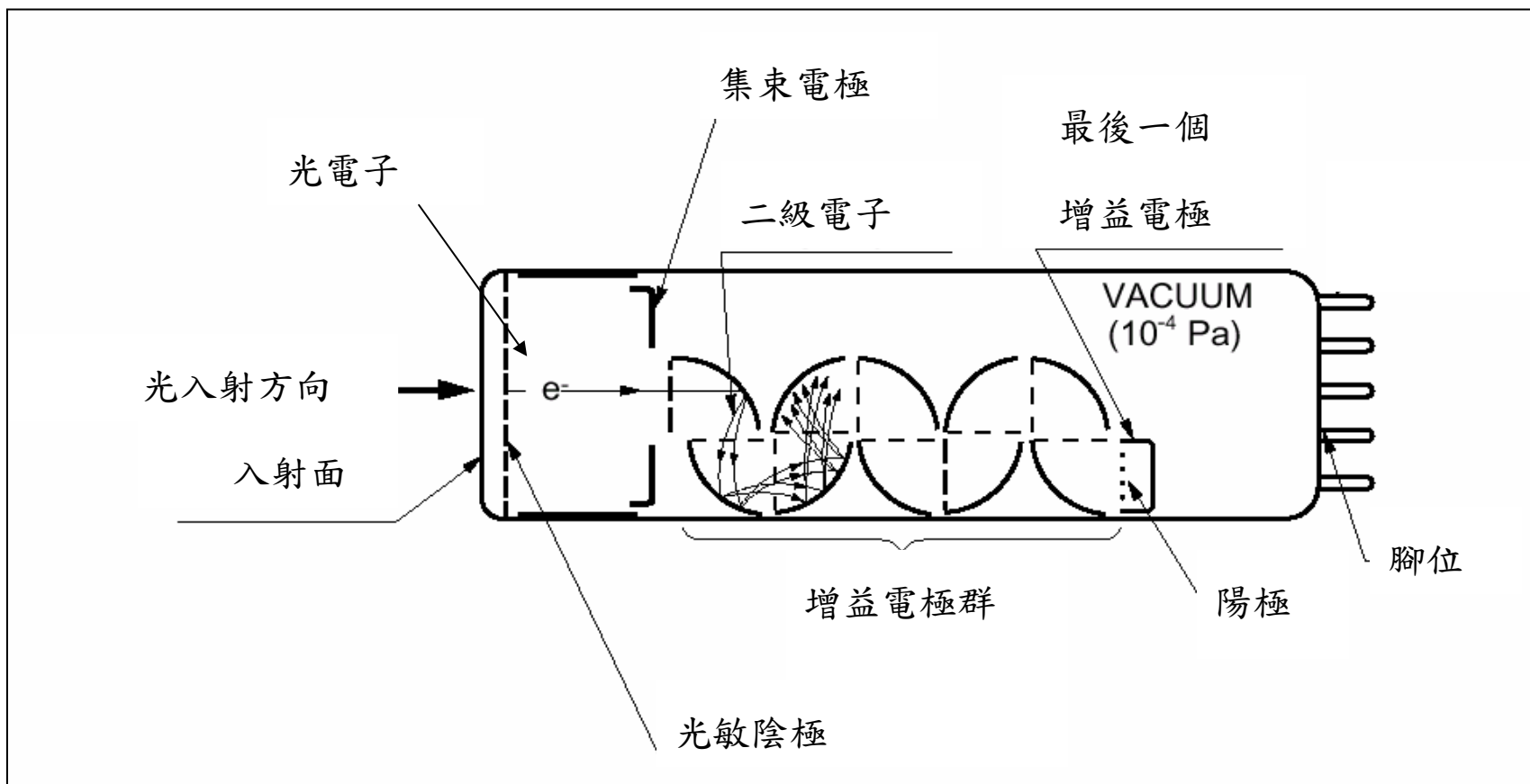


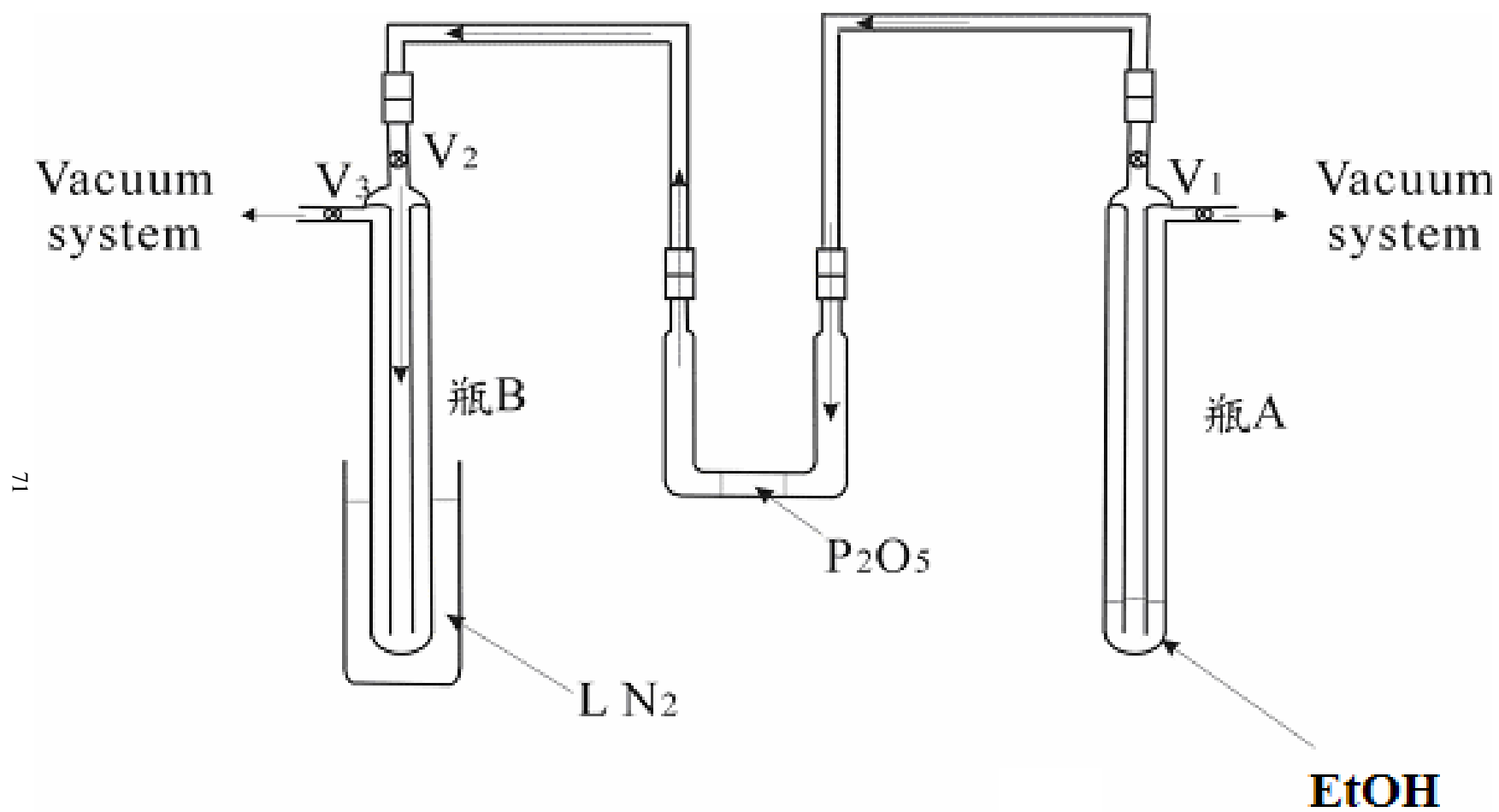
圖(3-1)：衝擊波管實驗系統。系統包含活塞型衝擊波管、速度偵測裝置、偵測系統、及數據處理系統。



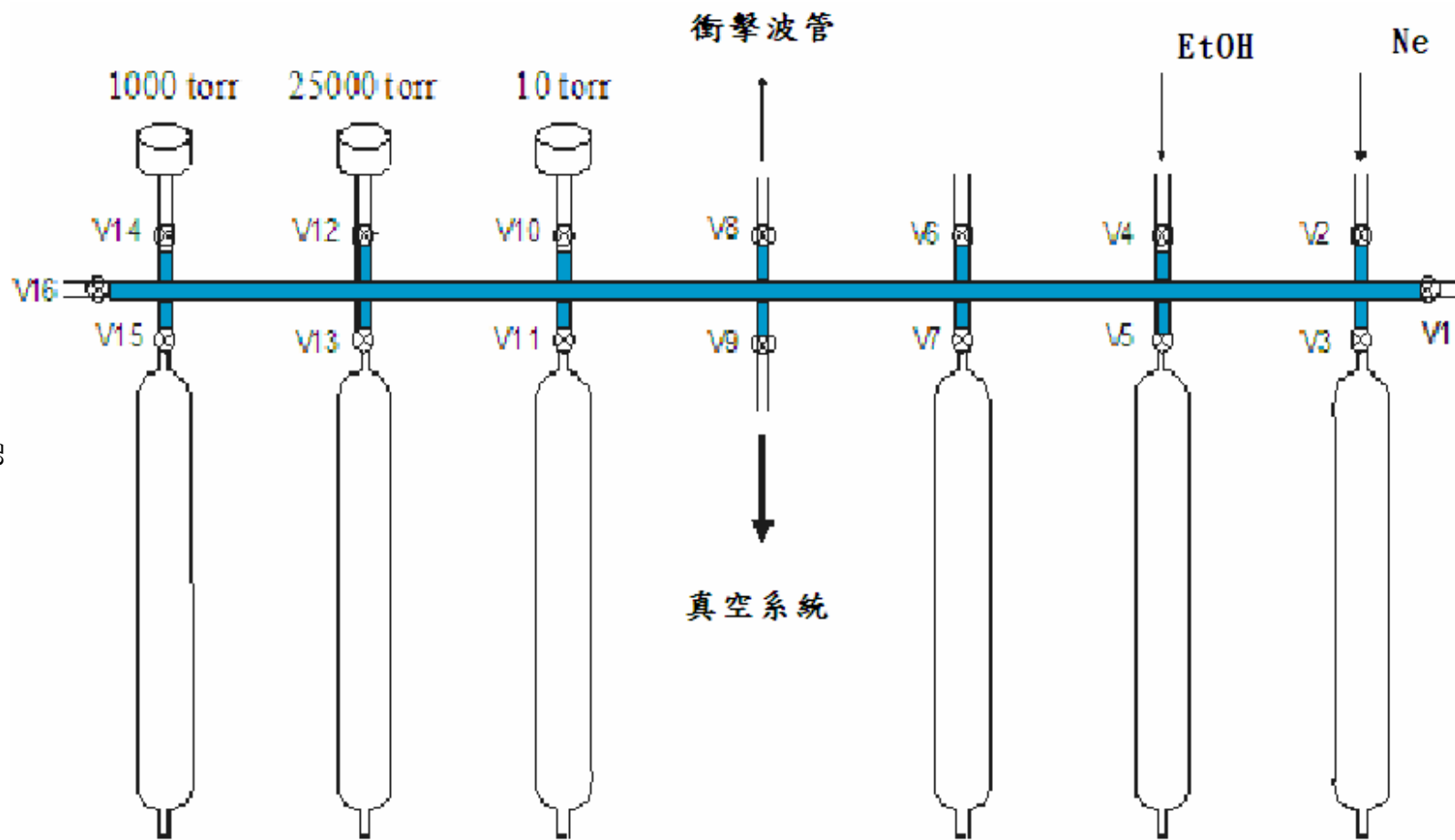
圖(3-2)：壓力變化偵測器的構造及相關電路。



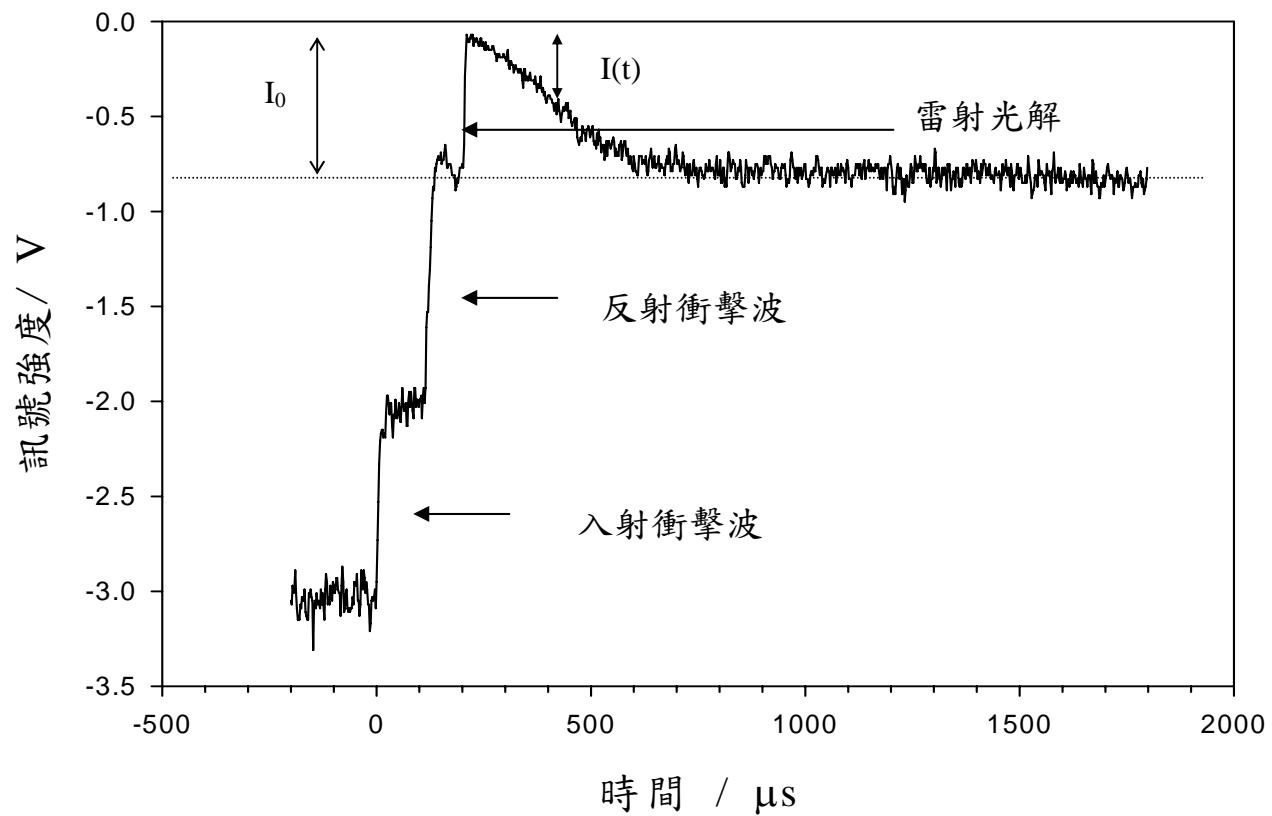
圖(3-3)：光電倍增管簡單的構造示意圖



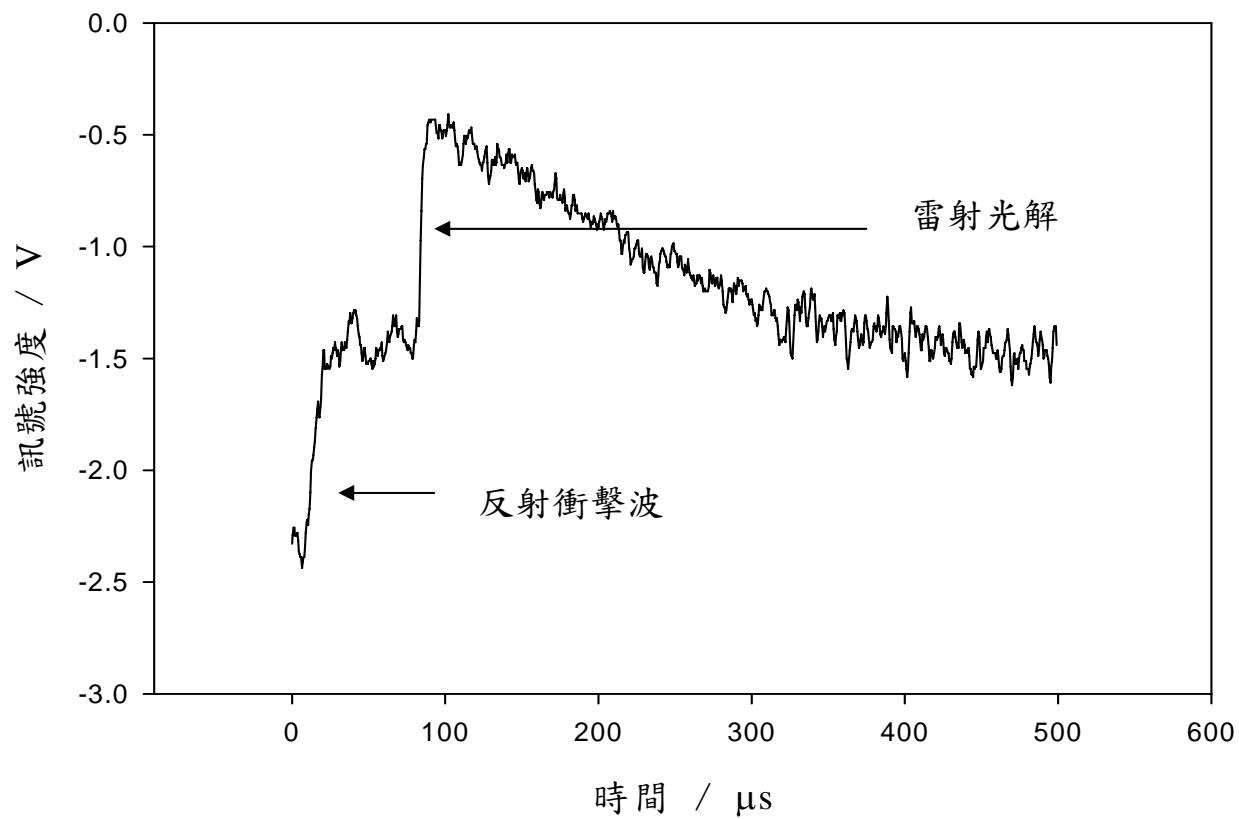
圖(3-4) 製備無水乙醇之實驗裝置圖



圖(3-5):氣體樣品配製系統，V1-V16 為閥門。



圖(3-6a)：衝擊波過後，示波器所得之光電倍增管放大後訊號隨時間的變化圖。 $\text{CH}_3\text{OH}/\text{Ar}$ ：100 ppm， SO_2/Ar ：700 ppm， $T=1172\text{K}$ 。



圖(3-6b)：以脈波產生器控制觸發時間，示波器所得之光電倍增管放大後隨時間的變化圖。 $\text{C}_2\text{H}_5\text{OH}/\text{Ne}$ ：100 ppm， SO_2/Ne ：333 ppm， $T=1095\text{ K}$ 。

表(3-1)：常用微波共振燈放射之紫外原子光譜線。^a

atomic specie	gas mixture	emission line(A)	transition	relative intensity	
H	2% H ₂ in He	1469.6	$^3P_{1/2} \rightarrow ^2P_{1/2}$	2p-1s	
Xe	3% Xe in He	1469.6	$^2P_{3/2} \rightarrow ^1S_0$	5p ⁴ 6s-5p ⁵	
Kr	3% Kr in He	1235.8	$^2P_{3/2} \rightarrow ^1S_0$	4p ⁴ 5s-4p ⁵	1.00
		1164.9	$P_{1/2} \rightarrow S_0$		0.20
O	1% O ₂ in He	1302.3	$^3S_1^0 \rightarrow ^3P_2$	2p ³ 3s-2p ⁴	0.61
		1304.9	$^3S_1^0 \rightarrow ^3P_1$		0.97
		1306.0	$^3S_1^0 \rightarrow ^3P_0$		1.00
N	1% N ₂ in He	1745.2	$^2P \rightarrow ^2P^0$	2p ² 3s-2p ³	0.78
		1742.7			1.00
		1494.7	$^2P \rightarrow ^2D^0$		0.15
		1492.6			0.30
		1411.9	$^2P \rightarrow ^2P^0$		0.06
Cl	0.1% Cl ₂ in He	1396.5	$^4P_{3/2} \rightarrow ^2P_{1/2}^0$	3p ⁴ 4s-3p ⁵	0.35
		1389.9	$^4P_{1/2} \rightarrow ^2P_{1/2}^0$		1.00
		1379.6	$^4P_{3/2} \rightarrow ^2P_{3/2}^0$		0.13
		1363.5	$^2P_{3/2} \rightarrow ^2P_{1/2}^0$		0.17
		1351.7	$^2P_{1/2} \rightarrow ^2P_{1/2}^0$		0.05
		1347.3	$^2P_{3/2} \rightarrow ^2P_{3/2}^0$		0.03
		Br	0.1% Br ₂ in He	1633.6	$^4P_{3/2} \rightarrow ^2P_{1/2}^0$
1582.4	$^4P_{1/2} \rightarrow ^2P_{1/2}^0$				0.50
1576.5	$^4P_{3/2} \rightarrow ^2P_{3/2}^0$				0.92
1540.8	$^4P_{1/2} \rightarrow ^2P_{3/2}^0$				0.25
1575.0	$^2P_{3/2} \rightarrow ^2P_{3/2}^0$				0.46
1531.9	$^2P_{1/2} \rightarrow ^2P_{1/2}^0$				0.17
1488.6	$^2P_{3/2} \rightarrow ^2P_{1/2}^0$				0.15
1449.9	$^2P_{1/2} \rightarrow ^2P_{3/2}^0$				0.03
1384.6	$^4P_{1/2} \rightarrow ^2P_{1/2}^0$				0.01
C	1% CH ₄ in He	1930.9	$^1P^0 \rightarrow ^1D$	2s ² 2p3s-2s ² 2p ²	1.00
		1658.1	$^3P^0 \rightarrow ^3P$		
		1657.0			0.52
		1656.3			
		1560.3			
		1560.7	$^3D_0 \rightarrow ^3P$		0.58

		1561.4			
S	0.1% SO ₂ in He	1914.9	$^5S_2^0 \rightarrow ^3P_1$	$3p^34s-3p^4$	0.16
		1900.3	$^5S_2^0 \rightarrow ^3P_2$		0.52
		1826.2	$^3S_1^0 \rightarrow ^3P_0$		1.00
		1820.3	$^3S_1^0 \rightarrow ^3P_1$		0.64
		1807.3	$^3S_1^0 \rightarrow ^3P_2$		0.18
		1667.0	$^1D_2^0 \rightarrow ^1D_2$		0.13

a : Davis, D.; Bruan, W. *Applied Optics* **1968**, 7, 2071.³

