

Costs of compressed air - Sample

1.	Compressors rated Power <i>Motor's power as indicated on name plate</i>	250	kW
	Cooling Fan / Cooling Tower & Pump <i>Nomarily is about 5% of compressor's rated power</i>	13	kW
	Efficiency of motors <i>Typical motor installed on compressors is less than 93% efficiency.</i>	93%	%
	Total electrical power consumption at full load	282	kW
2.	Compressor rated flow <i>Reference ambient conditions (FAD) : 20° C, 0% RH and 1.013bar abs</i>	2,586	m ³ /hr
	Factor when install in Malaysia <i>Actual ambient conditions : 35° C, 80% RH and 1.013bar abs</i>	0.908	
	Actual air volume flow from compressors	2,348	m³/hr
3.	Total dryers' rated capacity	2,750	m ³ /hr
	Purge air lost <i>15% @ -40° C PDP and 18% @ -70° C PDP</i>	413	m ³ /hr
	Net air delivered to production (item # 2 - purge air lost)	1,936	m³/hr
4.	Specific air volume flow per kW (item # 3 / Item # 1)	6.86	m³/hr
5.	Investment costs <i>Compressors, Dryer, receiver, filters and installation</i>	700,000	RM
	Annual Depreciation costs <i>Based on 5years write off</i>	140,000	RM
	Interest per year <i>5% per year</i>	35,000	RM
	Capital cost per year	175,000	RM
6.	Annual Maintenance on compressors <i>Annual maintenance + overhaul costs every 5years</i>	75,000	RM
	Annual maintenance on desiccant Dryers <i>Desiccant replacement every 5years + annual maintenance + filters</i>	50,000	RM
	Maintennance costs per year	25,000	RM
7.	Power consumption <i>Item # 1</i>	282	kW
	Electricity Costs	0.22	RM/kWhr
	Operating hours per year	8600	hrs
	Electricity costs per year	534,032	RM
8.	Total operating costs per year <i>Item # 5 + Item # 6 + item # 7</i>	734,032	RM/yr
	Compressed air produced per year <i>Item # 3 x operating hours per year</i>	16,646,057	m ³ /yr
	Cost of compressed air	0.0441	RM/m³

Note : 1cfm = 1.7m³/hr