



Client	Vandagraph	
Project	Oxygen Analyser	www.smallfry.com

VANDAGRAPH - Oxygen Analyser Prototype

Work Programme	Smallfry Design Budget	Estimated Man days
Oxygen Analyser - SLA Rapid prototype - Finishing and assembly - Tool for prototype seals - Seals > Review Meeting	x1 off £685 x2 off £880 £200 3 @ £12 each	1-2 weeks
	Total for 1 Prototype = £921 Total for 2 Prototype = £1152	

Notes

Project time scales are estimated in good faith dependent on convening the appropriate meetings and prompt decision making. If the project demands, the time scales shown can often be shortened by increasing the resources used.

This work will be subject to our current Terms of Business (January 2003) a copy of which is attached. All fees are subject to VAT at the current rate. Payment shall be made within 30 days of the date of each invoice.

QUOTATION

Customer Smallfry Industrial Design
School Street, Wolston
Coventry
CV8 3HG
UK
Att.: Steve May-Russell



Quotation no. 060814/2

Material	Drawing no.	Description	Qty.	USD	Delivery time
ABS, black		Bottom_cover			
		1-cavity injection mould	1	4800	5 weeks
		Part price (etched surface)	1	0,247	FOB
ABS, black		Front_cover_4			
		1-cavity injection mould	1	6250	5 weeks
		Part price (etched surface)	1	0,213	FOB
ABS, black		Internal_chaises_4			
		1-cavity injection mould	1	7250	5 weeks
		Part price (etched surface)	1	0,393	FOB
PC, clear		PC_Lens			
		2-cavity injection mould	1	1350	5 weeks
		Part price (polished surface)	1	0,143	FOB
		Shell_left_3 + Shell_right_3			
		1+1-cavity injection mould	1	6050	5 weeks
		Part price (polished surface) per set	1	0,281	FOB

Part prices are for MOQ 1000 pcs

Based on: Drawings received by e-mail

Valid until: 30-09-2006

Delivery terms: FOB Taichung (Taiwan)

Payment terms: Moulds: 50% on order, 50% on approval of parts
Parts: 14 days net

Jesper Kolind Lassen



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Oxygen Analyser Time Schedule

Work Programme	Smallfry Design Budget	Estimated Stage Duration
Stage 1 : Set Up & Produce 1st off CAD Project Set Up Design Evaluation 3D model components Produce 1st off CAD - External form. - Component layout > Vandagraph CAD review (possibly via email / web meeting) Deliver – Cad visuals of Analyser showing External form and component layout.	£3,500	2 weeks
Stage 2 : Design Detail for manufacture - Implement feed back from review - Design detail plastic components for manufacture - Address sealing, battery access and wall mounting issues - Component mounting. - Review of CAD data. Note: This would be an ideal time to arrange for a rapid prototype for full evaluation of the CAD data. Deliver – Final CAD design for approval.	£6,500	4 weeks
Total budget	£ 10,000 plus on-going design support as required	

We also offer on-going Design Support

- Prototype assessment
- On-going design troubleshooting
- Arrange for tooling and unit cost quotations.

Project time scales are estimated in good faith dependent on the timely receipt of information, convening the appropriate meeting and prompt decision making.

Smallfry can commence work on receipt of a purchase order, or written confirmation of intent to proceed, for the first stage.

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VANDAGRAPH – Oxygen Analyser CAD modification and Prototype

Work Programme	Smallfry Design Budget	Estimated Stage Duration
CAD Design modifications <ul style="list-style-type: none"> - Add more clearance around PCB - Extend body by 10mm - Remove valve in base - Make room for nut on sensor connection jack. 	1,250	1 week
Oxygen Analyser Prototype <ul style="list-style-type: none"> - SLA Rapid prototype - Finishing and assembly - Tool for prototype seals - Seals 	£890	1-2 weeks
Oxygen Analyser Prototype (optional) <ul style="list-style-type: none"> - Finishing, priming and spraying. colour and finish TBC 	£500	

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VANDAGRAPH - Oxygen Analyser

Background

Vandagraph have developed a new, easy-to-use and accurate Oxygen Analyser to replace their VN202 model. The New Model can be offered directly up to the end of the diving cylinder's outlet valve, as opposed to being attached to it via a DIN kit, as with the VN202. This makes the whole process far quicker but without losing accuracy. Also Vandagraph would like to wall mount the Analyser, so that it can test multiple cylinders.

When testing multiple cylinders the analyser will need to be wall mounted in some way.

The unit will be used in wet and salty conditions that are associated with driving. As such it will want to be water resistant.

All components are "off the shelf" to reduce costs and has a target retail price of \$99 in the US, £99.50 in the UK. The new Analyser exists as a working prototype and a CAD image.

Objective

Take the design in its existing form and developed 3D CAD data for production tooling.

Work Programme	Smallfry Design Budget	Estimated Man days	Target Completion Date
Oxygen Analyser - Design Evaluation - Source component details - Design Development - 3D CAD files > Review	£10,000	20 man days	

We would recommend that a rapid prototype is produce to fully evaluate the new design before sending CAD data for tooling and that is should be budgeted for. We estimate that this will cost about £500/£800

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