**FD2 – Preparation of Specifications for United Kingdom Patents**
**Updated Mark Scheme (1/12/25)**

## Introduction and Description

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|---|---|
| **Title** [*½ mark for a title + ½ mark for title to reflect accurately what is claimed*] | **1 mark** |
| **Statement of field** (technical field of invention) | **1 mark** |
| **Prior Art**: A summary of the three identified prior art arrangements of figs 1 to 3. Appropriate rewording of the content of the client's letter is preferred to merely copying text from the letter. | **3 marks** |
| **Statements of invention and general description**:<br>An express statement of what the feature of each claim *does* [*½ mark*] and corresponding *advantage* [*½ mark*] is rewarded in line with the feature grouping on page 4 below. | **20 marks** |
| **Figure summary description:** (including a reference to "non-limiting" examples and correctly indicating the figure that show prior art apparatus), along with correct/consistent use of figure numbers in the specific description. | **2 marks** |
| **Specific description**: Explanation of how the invention works conceptually, with a description of variants and alternatives (paying particular attention to the interaction of the different housing parts and the optical device they protect). Candidates should describe structure, function and operation. [Note: Minor reference numeral error in QP. Marking will ensure no detriment to candidates.] | **18 marks** |

**TOTAL: 45 marks**

## Claims

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|---|---|
| Independent apparatus claim | **23 marks** |
| Dependent apparatus claims | **27 marks** |

**TOTAL: 50 marks**

## Abstract

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|---|---|
| Title (same as title at top of script) | **1/2 mark** |
| Figure | **1/2 mark** |
| Text: must state the technical field or main use **[1 mark]**, summary of device (consistent with the features of the claims) **[2 marks]**, use of reference numerals **[1 mark]** | **4 marks** |

**TOTAL: 5 marks**

**GRAND TOTAL: 100 marks**

***Suggested* Independent apparatus claim:**

| **Possible claim wording** | **Notes** |
|---|---|
| 1. A protection apparatus for an optical device, comprising; | *An apparatus/device claim (e.g., a protection/shielding apparatus, a housing device/system etc) with a recited purpose of protecting an optical device. This should ideally be broader than a protection apparatus for a camera - limiting to a protection apparatus for an optical device is considered sufficiently broad based on the client's disclosure. [1]* |
| an outer housing for surrounding an inner housing that has a transparent window [/that comprises the optical device], | *The outer housing is an element that should be claimed, but the inner housing may simply comprise a known camera so the apparatus that is sold by the client may not include the inner housing. Hence, a definition that refers to the inner housing (noting that other suitable terms may be used instead of inner housing) but does not claim the inner housing as being a part of the apparatus is considered appropriate. [5]* |
| an opening [/outlet] in the outer housing for allowing light to pass to/from the transparent window [/ optical device], and | *An opening (outlet) in the outer housing is required though which (i) gas can be expelled and (ii) light can also pass to/from the inner housing (e.g., to allow an object to be viewed by a camera placed inside the inner housing). Reference may be made to light passing to the transparent window of the inner housing as mentioned by the client, but a more general refence to light passing to/from the optical device is also acceptable (noting care should be taken not to include the optical device as a claimed feature)..[5]* |
| one or more gas inlets for receiving a supply of [pressurised / compressed] gas, | *There needs to be a way to supply gas into the outer housing, and the only example given by the client is a gas inlet which is considered a sufficiently broad term. Although two inlets are shown in the client's drawings, it is stated that using only one inlet is possible. Although compressed air is described by the client multiple times, the use of "any gas" is also mentioned and hence limiting to "air" should be avoided. [3]* |
| wherein the outer housing provides, when surrounding the inner housing [/in use], a gap [/channel] that directs a flow of gas received at the one or more gas inlets [over the transparent window and] out of the opening. | *The key feature is that there is a gas gap or channel formed when (and only when) the outer housing surrounds the inner housing. This channel, when formed, directs gas from the gas inlet(s) to the opening from which it is expelled. This gap/channel is provided in conjunction with the inner housing and the claim should not define a channel present in the outer housing alone. [6]* |

*[plus up to [**3 marks**] for overall claim breadth, clarity, consistency, conciseness and not including unnecessary language or features]***.**

The following examples of mark caps/restrictions apply if unnecessary limitations are included:

**Catastrophic** (0 marks):

- The claim is not arguable novel over the prior art mentioned in the question paper.
- No clear gap defined (functionally or otherwise) for controlling gas flow before it is directed over the window and out of the opening.
- The claim doesn't cover all the main embodiment, especially the three different inner/outer housing options.
- The claim requires there to be at least two gas inlets (i.e., an apparatus with one gas inlet should be covered)
- The claim includes shutters or gas acceleration zones (which are clearly stated by the client as not being essential).

**Minimal** (deduct 2 marks each): Unnecessary features that provide a minor limitation on claim scope; e.g., the claim is limited to protection for a camera (not an optical device) or the claim refers to using air (not gas).

**Total: 23 marks**

**Dependent apparatus claims**

*Marks are halved where claim dependencies are incorrect, or the terminology is not consistent with claim 1 or the higher order claims on which they depend.*

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| **A)** | **Housing Options [11 marks]** {*The dependent claims should be structured to cover all the different housing configurations mentioned by the client. Ensuring the claim dependencies are appropriate is considered important for these feature*}. |
| a.1 | The protection apparatus further comprising an inner housing having a transparent window, the inner and outer housings being configured to provide the gas gap [/channel] that directs a flow of gas received at the one or more gas inlets over the transparent window of the inner housing and out of the opening {*i.e., defining the inner housing as part of the claimed apparatus, rather than just referring to it as an associated item*}. [2] |
| a.2 | The inner housing is openable to allow the insertion/removal of an optical device. [1]. |
| a.3 | I) The outer housing fully encloses [/surrounds] the inner housing (but is separable/separate from it) and the inner/outer housings together provide the gas gap [2]. |
| a.4 | The outer housing is openable (to remove/insert an inner housing) [1]. |
| a.5 | II) The inner/outer housings are formed as a unitary item [2] |
| a.6 | - Common door/opening to insert an optical device into the inner housing [1] |
| a.7 | III) An optical device is {/provides} the inner housing. [2] |
| **B)** | **Gas flow acceleration / control [ 6 marks**] |
| b.1 | The apparatus includes at least one gas acceleration zones that increases the velocity of gas prior to it being directed over the window. [1] |
| b.2 | The gas acceleration zone is provided by a reduction in the cross-sectional area of the gap between the inner and outer housings, adjacent the transparent window. [1] |
| b.3 | - The width of the gas gap reduces by a factor of around two. [1] |
| b.4 | The gas path includes at least one curved baffle / arc shaped divertors for reducing gas turbulence. [1] |
| b.5 | At least one shutter is provided in the gas path to control gas flow. [1] |
| b.6 | - Plurality of shutters to control gas flow direction. [1] |

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| **C)** | **Other [3 marks]** |
| c.1 | The apparatus comprises a plurality of gas inlets [1] |
| c.2 | The inner housing has a transparent window with a non-stick coating.[1] |
| c.3 | The window of the inner housing is glass [1] |
| **D.** | **Combination with an Optical device and other components [5 marks]** |
| d.1 | The protection apparatus in combination with an optical device (noting consistency with any claims for the optical device being the inner housing / could be in kit/system claim) [1] |
| d.2 | - The optical device is a camera [1] |
| d.3 | Coverage (e.g., kit claim) for other components that could also be sold in combination with the protection apparatus: pressure regulator, gas/air filter, air pump, bottled gas/air etc. [3] |
| d.4 | Method claims that extend beyond mere use of the apparatus [2] |

**For all dependent claims, TOTAL = 27 marks**

**Suggested statement of invention mark allocation (20 marks)**

**Independent apparatus claim** – Running through and expanding/explaining the main features of claim 1 and outlining the advantages of the apparatus over the three pieces of prior art. [**5 marks**].

**Housing Options (Claim grouping A)**- Expanding on the three housing options, with suggested allocation of 2 marks per option. [**6 marks**]

**Gas flow options (Claim grouping B)**
Gas acceleration and shutter control of gas flow. [**4 marks**]

**Other/combinations (C&D)**
Useful expansions on claim features C and D. Including other articles that can be sold with the protection apparatus and alternatives. **[5 marks]**