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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BECKMAN COULTER, INC., Plaintiff, v. CYTEK BIOSCIENCES, INC., Defendant.	C.A. No. 22-945-CFC-EGT

REBUTTAL EXPERT REPORT OF JAMES F. LEARY, PH.D. REGARDING NON-INFRINGEMENT OF U.S. PATENT NOS. 10,330,582; 11,703,443; and 12,174,107

Dated: 1/20/2026

James F. Leary, Ph.D.

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a. 1(c): "a wavelength division multiplexer (WDM) configured to receive light from the optical fiber, wherein the WDM comprises:"

157. In my opinion, claim limitation 1(c) is not present in the Accused Products because the Accused Products lack "a wavelength division multiplexer (WDM)."

158. Dr. Houston asserts that "the '107 Patent describes 'a Wavelength Division Multiplexing (WDM) system to separate a light beam into multiple colored bands'," and that "[a] POSA would thus understand that reference to wavelength division multiplexing refers to 'optically separating [e.g., demultiplexing] light received via the optical fiber into color bands.'" (Houston Rep., ¶137 (citing '107

patent at 2:40-42, 2:62-65); *see also id.* at ¶130.) I note that the claim term at issue is "Wavelength Division Multiplexer (WDM)" and not "Wavelength Division Multiplexing." In my opinion, a POSA would understand that a "wavelength division multiplexer (WDM)," as recited in the claim, refers to an optical component that brings together rather than separates different wavelengths of light. In my opinion a POSA would interpret a "wavelength division multiplexer (WDM)" according to its plain meaning, which requires multiplexing, and would not interpret the term as encompassing a wavelength division demultiplexer – which performs an opposite function. To the extent, Beckman intended to claim a de-multiplexer, it should have claimed such a component. A POSA would undoubtedly understand a multiplexer to multiplex.

159. [redacted]

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160. A POSA would understand the differences between "wavelength division multiplexing," "wavelength division de-multiplexing," a "wavelength division multiplexer," and a "wavelength division de-multiplexer." Wavelength division multiplexing is a method in which individual wavelengths are merged into a combined, single signal. *See e.g.,* Harry Newton, *Newton's Telecom Dictionary: the official dictionary of telecommunications* (1998) ("Newton") at 838 ("Wavelength Division Multiplexing (WDM): A way of increasing the capacity of

an optical fiber by simultaneously operating at more than one wavelength, and at as many as four wavelengths . . . In optical fiber communications, WDM is any technique by which two or more optical signals having different wavelengths may be simultaneously transmitted in the same direction over one strand of fiber, and then be separated by wavelength at the distant end."). Wavelength division de-multiplexing is a technique in which combined set of wavelengths are separated or split into individual wavelengths. *See e.g.*, Telecommunications: glossary of telecommunication terms (1997) at D-12 ("demultiplexing: The separation of two or more channels previously multiplexed; i.e., the reverse of multiplexing.") A wavelength division multiplexer is the componentry that achieves multiplexing and a wavelength division demultiplexer is the componentry that achieves demultiplexing. *See e.g.*, Newton at 497 ("Multiplexer: Electronic equipment which allows two or more signals to pass over one communications circuit"); *Id.* at 222 ("Demultiplexer: A device that pulls several streams of data out of a bigger, fatter or faster stream of data.").

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171. In any event, regardless of Cytek's usage of the term, the '107 patent's claim language recites a wave division multiplexer, which a POSA would understand is componentry that combines individual wavelengths, and the Accused

Products simply do not perform that function and thus cannot and do not meet claim limitation 1(c).

172. For all the foregoing reasons, in my opinion the Accused Products do not contain a "wavelength division multiplexer" as recited in the claims of the '107 because the optical system in the Accused Products is a de-multiplexer.

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[redacted]

[redacted]

2. Asserted Claim 16

a. 16(b): **a flow cell configured to permit liquid to flow through the flow cell; 16(c): a laser configured to project light into the flow cell**

207. In my opinion, claim limitations 16(b) and 16(c) are not present in the Accused Products because the Accused Products lack the claimed "flow cell."

208. I understand that Dr. Ilkov has opined that the term "flow cell" is indefinite for lack of written description and enablement. (Ilkov Op. Rep., Section XV.G.) I have reviewed his opinion and agree that the only flow cell supported by the specification is one that includes a composite microscope objective, comprising a concave mirror and an aberration corrector plate.

209. [redacted]

[redacted]

210. [redacted]

211. Although Dr. Schaafsma opines that this claim limitation is met (Schaafsma Rep., ¶¶298-99), his discussion of the flow cell in the Accused Products is lacking, and I see the word "flow cell" only once in Section XI of his report, which he references to suggest this claim limitation is met. Regardless, neither Dr. Houston's nor Dr. Schaafsma's reports establish that the flow cell in the Accused Products includes a composite microscope objective, comprising a concave mirror and an aberration corrector plate, which is the only flow cell adequately described in the '107 patent, as Dr. Ilkov has explained.

b. 16(d): "a multimode optical fiber configured to receive light from the flow cell; and"

212. In my opinion, limitation 16(d), "a multimode optical fiber configured to receive light from the flow cell," is not present in the Accused Products.

213. In my opinion, the optical fiber in the Accused Products is not "configured to receive light from the flow cell." In the Accused Products, the optical fiber is configured to receive light from the objective lens, not the flow cell. Dr. Houston recognizes this, stating in the Accused Products that "fluorescence emissions *passes through* the objective lens and into the fiber pickup." (Houston Rep., ¶245 (emphasis added).) I reproduce the figure used by Dr. Houston from Cytek's document, showing that [redacted]

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(Houston Rep., ¶245 (citing CYTEK_0000003882 at -4004; CYTEK_0000002507 at -630).)

214. Dr. Houston opines that "Element 16(d) does not require that the multimode fiber receive light directly from the flow cell without any intervening optical elements." (Houston Rep., ¶247.) I disagree. In my opinion, based on the plain language of the claim, a POSA would understand that the fiber must receive light directly from the flow cell, and that light that has passed through (and is

manipulated by) any intervening optical element, such as an objective lens in the case of the Accused Products, is not considered "light from the flow cell," but rather "light from the objective lens."

215. [redacted]

c. 16(e): "a wavelength division multiplexer (WDM) configured to receive light from the multimode optical fiber, wherein the WDM comprises:"

217. In my opinion, claim limitation 16(e) is not met for the same reasons discussed above for limitation 1(d) of the '107 patent (i.e., the Accused Products lack a "wavelength division multiplexer (WDM)"), which analysis I incorporate here by reference.

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