

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF TEXAS  
DALLAS DIVISION**

**TIME DOMAIN CORPORATION,**  
  
**Plaintiff/Counterclaim Defendant,**  
  
**v.**  
  
**BEKAERT SPECIALTY FILMS, LLC,**  
  
**Defendant/Counterclaim Plaintiff.**

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**Civil Action No. 3:08-CV-00902-L-BD**

**FIRST AMENDED COMPLAINT AND JURY DEMAND**

Plaintiff Time Domain Corporation (“Time Domain”) files this Complaint against Defendant Bekaert Specialty Films, LLC (“BSF”) on personal knowledge as to all facts regarding itself and on information and belief as to all other matters.

**I.**

**PRELIMINARY STATEMENT**

The present dispute involves the intentional theft of a patented invention. The technology at issue enables, to greater degree than ever before, its users to specify the type of light allowed to pass through transparent media. In one embodiment of the invention, known in the industry as a “specialty window film,” harmful ultraviolet radiation and heat generating infrared radiation, each defined by its unique wavelength/frequency range, can be almost completely prevented from passing through a window, while visible light of a desired wavelength/frequency range is allowed to pass. Thus, while having no impact on what a person sees when he or she looks through a window, when used as a specialty window film, this invention provides many benefits, including: keeping out unwanted heat, thereby reducing cooling costs and improving the climate

consistency of an enclosed space; protecting interiors from deterioration; and protecting people from the health risks associated with exposure to ultraviolet light. Up to this point, this embodiment of the invention has been employed most commonly in skyscraper windows, but, potentially, it could be incorporated into every building, house, and automobile.

Michael Scalora, Ph.D. (“Dr. Scalora”) invented and patented this valuable technology. On July 17, 2001, U.S. Patent No. 6,262,830 (the “‘830 Patent”) entitled, “Transparent Metallo-dielectric Photonic Band Gap Structure,” was issued to Dr. Scalora. The rights to the patent were thereafter acquired by Plaintiff. Plaintiff’s economic interest in the commercialization of the patented technology has been damaged by the willful misconduct of Defendant, which is making, using, and selling infringing products in the United States. By this action, Plaintiff seeks to enjoin Defendant from engaging in further acts of infringement, as well as damages in the form of monetary relief for Defendant’s wrongful acts of infringement.

## **II.**

### **THE PARTIES**

#### **A. Plaintiff**

1. Time Domain is a privately held Delaware corporation with its principal place of business located in Huntsville, Alabama. As of year end 2007, Time Domain employs approximately 54 people and generates approximately \$5.4 million of annual revenue. Since its formation in 1987, Time Domain has been primarily involved in the manufacture of products employing ultra wideband wireless technology for tracking, sensory, and telemetry applications. In addition, Time Domain maintains a diverse intellectual property portfolio, holding at least 120 United States Patents and approximately 35 pending patent applications in various technological fields. One of those patents is the ‘830 Patent.

**B. Defendant**

2. BSF is a Delaware limited liability corporation, with its headquarters and principal place of business located at 4540 Viewridge Avenue, San Diego, California 92123. BSF is a manufacturer and supplier of, *inter alia*, specialty window films incorporating subject matter claimed under the '830 Patent. BSF may be served with this Complaint and Jury Demand through its registered agent for service of process, CT Corporation System, at 350 North Saint Paul Street, Dallas, Texas 75201-4201.

3. BSF is a subsidiary of NV Bekaert SA ("Bekaert"), a multi-national publicly held Belgian corporation employing more than 18,500 people in plants and offices all over the world. Bekaert claims two main competencies: advanced metal transformation and advanced materials and coatings. Its advanced coatings segment is divided into industrial coatings and specialized films. BSF serves as the specialized films segment of Bekaert. Employing approximately 500 people worldwide, BSF generates over 2 percent of Bekaert's total sales, which amounts to nearly 70 million euros a year (approximately USD \$109 million).

4. BSF markets itself as a global leader in the development, manufacture, and distribution of specialty films. BSF manufactures a range of window films for vehicles and buildings to keep out the sun's heat, filter out ultraviolet radiation, and hold glass together in the event of breakage. Its window films, sold under the Solar Gard®, Panorama®, Quantum®, and Armorcoat® brands, are distributed through a network of independent certified dealers and distributors in more than 60 countries. BSF also manufactures industrial films for electronics, medical, graphic arts and imaging, automotive, and aerospace industries.

5. BSF manufactures and sells a specialty window film under the label Panorama® Hilite 70 ("Hilite 70") which unlawfully incorporates the technology described and claimed in the '830 Patent.

### III.

#### **JURISDICTION AND VENUE**

6. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338 because Plaintiff's claims arise under the patent laws and other statutes of the United States.

7. This Court has personal jurisdiction over BSF because it is doing business in Texas and has committed torts inside and outside Texas that have caused harm to Plaintiff in this state. Plaintiff's claims for patent infringement arise from BSF's sales of an infringing product, Hilite 70, in the State of Texas and throughout the United States which were calculated to cause and have caused substantial harm to Plaintiff. BSF advertises that it has dealers of Hilite 70 in approximately 140 cities and towns in Texas. In addition, BSF maintains two branch locations in Texas, one in Grand Prairie, the other in Houston. Even after Plaintiff put BSF on notice that Hilite 70 infringes the '830 Patent, BSF continued to intentionally place its infringing product into the stream of commerce with the expectation that it would be purchased by consumers in Texas. In sum, BSF's conduct and connections with Texas are purposeful such that it should have reasonably expected that it would be sued in Texas by Time Domain, the owner of the '830 Patent.

8. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b) and 1400(b) because: (a) BSF maintains agents and an office in Grand Prairie, Texas, a city within this District; (b) BSF advertises that it has 44 dealers of Hilite 70 within this District; (c) BSF has a designated registered agent for service of process in Dallas County, Texas; (d) the Court has personal jurisdiction over BSF in this District; and (e) a substantial number of the events giving rise to Plaintiff's claims occurred in Dallas County, Texas – namely BSF is committing numerous acts of patent infringement in this District by selling Hilite 70.

#### IV.

#### **FACTUAL BACKGROUND**

##### **A. Breakthrough: Dr. Scalora Develops Transparent Metallo-Dielectric Photonic Band Gap Structures.**

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9. The photonic band gap (“PBG”) phenomenon was first observed in naturally formed crystals. Highly simplified, photonic crystals contain regularly repeating internal regions of high and low dielectric constant through which photons, behaving as waves, propagate – or not – depending on their wavelength. Disallowed bands of wavelengths are called photonic band gaps. Scientists have been successful in engineering structures that exhibit this phenomenon by layering dielectric materials and properly choosing the thicknesses of the layers. However, prior to Dr. Scalora’s work, it was commonly thought throughout the scientific community that a structure containing alternating layers of metal and dielectric would not exhibit the PBG phenomenon because metals are too reflective and/or opaque.

10. Dr. Scalora proved that to be untrue. Through his research, he discovered that: (1) resonant tunneling of light waves through the use of multiple layers of metal films can enhance the transmission of light through optical media by several orders of magnitude; (2) the periodic nature of the metal-dielectric lattice causes the light to propagate through the metal layers with extremely low loss; (3) the wavelength, width, and sharpness of the transparency window for the metal-dielectric PBG crystal is adjustable and generally dependant on the thicknesses and the number of the metal-dielectric layers; and (4) due to the highly dispersive nature of metals, a single band may pass through while all other radiations are blocked.

11. Based on those discoveries, Dr. Scalora conceived of a structure in which the thicknesses of alternating metal and dielectric layers are precisely calculated to take advantage of the PBG phenomenon. By utilizing a PBG structure in the form of “tuned optical stacks,” the

device could include metal layers to filter unwanted light waves and radiation more effectively than ever before.

12. On September 16, 1997, Dr. Scalora filed a patent application covering the transparent metallo-dielectric PBG structure and method for creating the same. On July 17, 2001, the '830 Patent issued in favor of Dr. Scalora.

**B. Time Domain Purchases The '830 Patent.**

13. Time Domain recognized the value and market potential of Scalora's invention. As a result, pursuant to an agreement between Time Domain and Dr. Scalora dated May 24, 2005, Time Domain obtained an exclusive license, including the sole discretion in exploiting, using, or sublicensing certain intellectual property owned and/or invented by Dr. Scalora, including, but not limited to, the '830 Patent.

**C. Bekaert Introduces The Infringing Hilite 70.**

14. On August 2, 2005, BSF introduced Hilite 70, an architectural window film designed to block damaging ultraviolet radiation and infrared heat, but to allow visible light to be transmitted without noticeable interference. At that time, BSF claimed that Hilite 70's impressive qualities were a result of its state-of-the-art manufacturing process, premium raw materials, and unique, patent pending layering of exotic metals, such as titanium oxide, gold, and silver. In truth, however, Hilite 70's qualities were developed through BSF's unlawful use of the transparent metallo-dielectric PBG structure, described and claimed in the '830 Patent.

15. BSF has enjoyed great success with Hilite 70. In the June 2007 edition of *Buildings*, Hilite 70 was named one of 2007 Editors' Choice Top Product Picks. In a press release dated March 4, 2008, BSF boasted that more than 135 dealers attended a conference related to Hilite 70.

**D. Time Domain Attempts To License The Technology To BSF.**

16. With the '830 Patent in hand, Time Domain sought to license the technology. Naturally, as an industry leader in window films and maker of the highly acclaimed Hilite 70, BSF was on the top of Time Domain's list of potential licensees. What Time Domain did not know at the time it sought a license agreement with BSF, however, was that Hilite 70 owed its success to the unlawful implementation of the technology described and claimed in the '830 Patent.

17. On October 24, 2005, Dr. Larry Fullerton ("Dr. Fullerton"), Time Domain's chief scientist, sent an e-mail to BSF in which he offered to license the PBG technology suggesting that it could be used to improve the qualities of Hilite 70 product. On October 26, 2005, BSF responded and requested that Dr. Fullerton send his ideas, which would be kept confidential, to Peter Persoone, Ph.D. ("Dr. Persoone"), BSF's chief scientist. On October 27, 2005, Dr. Fullerton sent a description of the technology covered by the '830 Patent (the "White Paper"). The White Paper gave BSF actual notice of the existence and content of the '830 Patent.

**E. BSF Admits That Hilite 70 Uses The Technology of The '830 Patent.**

18. On November 3, 2005, after reviewing the White Paper, Dr. Persoone responded to Dr. Fullerton's e-mail (the "Persoone E-mail") and: (1) admitted that Hilite 70 is based on the same technology described in the White Paper; (2) admitted that Hilite 70 consists of a "tuned optical stack" of silver layers sandwiched between dielectric TiO<sub>2</sub> layers; (3) explained that Hilite 70 uses TiO<sub>2</sub> dielectric layers instead of MgF<sub>2</sub> dielectric layers; and (4) referred to a number of his published papers (the "AIMCAL Publications") to further explain the technology.

19. As indicated in the Persoone E-mail, the AIMCAL Publications explain the technology used in Hilite 70, which, Dr. Persoone admitted, is the same technology described in the White Paper. Indeed, the AIMCAL Publications describe the same technology described and

claimed in the '830 Patent. Serving as a blue print of Hilite 70, the AIMCAL Publications demonstrate that Hilite 70 unlawfully incorporates the technology described and claimed in the '830 Patent.

**F. Time Domain Formally Puts BSF On Notice Of Its Infringing Activities.**

20. On March 9, 2007, through its counsel, Time Domain sent BSF a letter formally notifying BSF that Hilite 70 infringes at least some of the claims of the '830 Patent. In that letter, Time Domain presented its infringement analysis and provided: (1) a copy of the '830 Patent; (2) a copy of the White Paper; (3) a copy of the Persoone E-mail; (4) copies of the AIMCAL Publications and accompanying presentations; (5) a claims chart illustrating how some of the claims of the '830 Patent cover the "tuned optical stack" technology described in the AIMCAL Publications; and (6) test results showing that Hilite 70 transmits the visual spectrum and rejects the infrared spectrum in precisely the manner in which the technology is described and claimed in the '830 Patent. In addition, Time Domain expressed its desire to license the technology described and claimed in the '830 Patent and settle its claims of infringement against BSF.

**G. BSF Responds, Groundlessly Arguing That The '830 Patent Is Not Patentable Over Prior Art.**

21. BSF responded on March 28, 2007, and argued that the claims of the '830 Patent were not patentable. Specifically, BSF cited to an earlier European Patent (EP 454,666) as invalidating prior art to the '830 Patent. On April 25, 2007, Time Domain responded, explaining, in great detail, that the prior art cited by BSF was merely one variation of prior art that was fully considered and distinguished by the patent examiner on grounds that it did not teach or suggest a PBG structure.



**H. BSF Admits The Novelty Of The Technology Covered Under The ‘830 Patent.**

22. On October 23, 2003, BSF filed U.S. Patent Application No. 10/533,890, entitled “Infra-red Relecting Layered Structure.” This application discloses essentially the same technology that is covered under the ‘830 Patent. Specifically, the application covers “tuned optical stacks” comprised of alternating metal and dielectric layers that exploit the PBG phenomenon. Thus, at the time it filed the patent application, BSF must have concluded that the technology was patentable over the very same prior art that it later cites against Plaintiff as invalidating prior art.

**I. Without Proper Justification, Bekaert Closes The Door On Time Domain.**

23. On July 19, 2007, BSF sent Time Domain one last response, stating that: (1) claims 1 to 30, 32, 33, 34, 37, and 38 cannot cover Hilite 70 because these claims require at least three metal layers; (2) method claims 35, 36, and 39 to 43, and apparatus claim 31 cannot cover Hilite 70 because BSF designed it outside of the United States; (3) even if a claim in the ‘830 Patent did cover Hilite 70, it is invalid over prior art; and (4) Hilite 70 does not employ the PBG phenomenon. BSF concludes by asserting that it was not interested in the ‘830 Patent and that the matter was closed.

24. The positions articulated in BSF’s letter dated July 19, 2007, are without merit because: (1) claim 37 does not require three metal layers and, indeed, covers Hilite 70; (2) the location where BSF designed its product is irrelevant because BSF is manufacturing and selling the product in the United States; (3) as discussed above, the ‘830 Patent is patentable over the prior art; and (4) Hilite 70 employs the PBG phenomenon.

25. Time Domain employed a laboratory to analyze Hilite 70. The results confirm that Hilite 70’s layer thicknesses are selected according to the criteria disclosed in the AIMCAL

Publications, which, as described above, incorporate the PBG structure described and claimed in the '830 Patent.

**J. Damage Done: BSF Continues Its Unlawful Acts Of Infringement.**

26. With full knowledge that Hilite 70 unlawfully employs the technology described and claimed in the '830 Patent, BSF continues to manufacture and sell the product. BSF, no doubt banking on the disparity of resources between Time Domain and BSF, apparently considers itself untouchable and thereby entitled to take and profit from the '830 Patent without providing any compensation to Time Domain.

**V.**

**CLAIMS**

**A. Count One: Patent Infringement – Request For Preliminary And Permanent Injunctive Relief Pursuant To 35 U.S.C. § 283.**

27. Time Domain realleges and incorporates the allegations set forth in the preceding paragraphs as if set forth in full herein.

28. The United States Patent and Trademark Office ("USPTO") duly issued the '830 Patent on July 17, 2001. The '830 Patent is valid and enforceable. Time Domain acquired rights to the patented technology pursuant to an agreement between Time Domain and Dr. Scalora, dated May 24, 2005. BSF has infringed and continues to infringe the '830 Patent by manufacturing, using, and selling products that incorporate one or more claims of the '830 Patent.

29. Having been placed on notice of the '830 Patent and its infringement thereof, BSF's continued sale of the infringing products constitutes a willful violation of the U.S. patent laws, including 35 U.S.C. § 271.

30. Plaintiffs have implemented a well-conceived, efficient, and effective plan for commercializing the patented technology. BSF's infringing activities threaten to irreparably harm Time Domain by destroying its plans for the commercialization of the '830 Patent.

31. The balance of equities favors Time Domain. It owns and controls the rights to commercialize, and reap the benefits from the production of, the patented PBG technology. Defendant is a willful infringer who is unlawfully producing and deceptively selling infringing products. In the absence of an injunction, Time Domain's carefully-formulated plan for commercializing the patented technology will be destroyed, as will be the goodwill associated with the '830 Patent. Without injunctive relief, Time Domain will lose its right to control the quality and characteristics of the PBG technology used in, *inter alia*, thin films for windows now being distributed to the public. That control is of critical importance to Time Domain, given that the market for technology based on PBG technology is in its infancy, and initial positive public response will help to drive future acceptance by a greater number of consumers.

32. Therefore, Plaintiff respectfully requests that this Court issue a preliminary injunction and, upon trial, a permanent injunction prohibiting Defendant, and its officers, directors, employees, agents, subsidiaries, affiliates and all those in active concert with them, from: (a) infringing, contributing to the infringement, or inducing the infringement of the '830 Patent; and (b) making, having made, using, selling, offering for sale, or importing any products, systems, or component parts embodying, incorporating and/or practicing any of the inventions described and claimed in the '830 Patent.

**B. Count Two: Patent Infringement — Request For Recovery Of Monetary Damages Pursuant To 35 U.S.C. § 284.**

33. Plaintiff realleges and incorporates the allegations set forth in the preceding paragraphs as if set forth in full herein.

34. In addition to preliminary and permanent injunctive relief to prevent Defendant from engaging in further acts of infringement in violation of the '830 Patent, Plaintiff seeks an award of money damages to compensate it fully for the injuries it has sustained as a result of Defendant's infringement of one or more claims of the '830 Patent.

35. Accordingly, pursuant to 35 U.S.C. § 284, Plaintiff seeks an award of damages in the amount assessed by the jury to compensate it for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as determined by the Court.

36. Furthermore, Plaintiff requests that the Court increase the damages up to three times the amount found or assessed by the jury pursuant to 35 U.S.C. § 284.

**C. Count Three: Violations Of The Lanham Act - 15 U.S.C. § 1125.**

37. Plaintiff realleges and incorporates the allegations set forth in the preceding paragraphs as if set forth in full herein.

38. BSF has engaged in false commercial advertising and promotion in violation of Section 43 (a)(1)(B) of the Lanham Act, 15 U.S.C. § 1125(a).

39. BSF has misrepresented the nature, characteristics, and qualities of its products. In particular, BSF has misrepresented that: (a) the material in its films is different than and contains a unique morphology from the materials covered by the '830 Patent; and (b) BSF's technology does not infringe the intellectual property covered by the '830 patent . Further, BSF has made false and/or misleading representations that the technology (*i.e.*, PBG transparent metal film technology) in BSF's Hilite 70 films was covered by its own patents; and that BSF has the right to sell Hilite 70 films under those patents.

40. BSF's false and misleading statements were made in commerce through nationally-distributed marketing materials, press releases, newspaper articles, internet websites

and/or during nationally and international advertised trade conferences. BSF's false and misleading statements deceived or had the capacity to deceive a substantial segment of potential licensees, investors, and consumers in the subject technology markets. Further, Defendant's false and misleading statements have substantially affected, and are likely to substantially affect, interstate commerce.

41. Plaintiff has no adequate remedy at law because, unless BSF is enjoined from continuing to make such false claims, Plaintiff will suffer further irreparable harm.

42. In addition or in the alternative, as a direct and proximate result of BSF's conduct, Plaintiff has suffered a loss of sales, royalties, and/or goodwill and will continue to suffer substantial injury for which it seeks to recover monetary damages in an amount to be determined at trial.

43. The misrepresentations, acts, and omissions of BSF were made intentionally and willfully with knowledge of the falsity of the statements. Accordingly, Plaintiff is entitled to recover treble damages pursuant to § 35 (a) of the Lanham Act, 15 U.S.C. § 1117 (a).

## **VI.**

### **JURY DEMAND**

Time Domain hereby requests a jury trial as to all matters in this action as to which it may be entitled to a trial by jury under the Constitution, laws, or statutes of the United States.

## **VII.**

### **RELIEF REQUESTED**

Considering the premises, Plaintiff requests that this Court enter judgment in its favor and against Defendant, providing for the following relief:

- a. Preliminary and permanent injunctive relief against Defendant, its agents, representatives, employees, and servants and all persons and entities in concert or

participation with it, requiring it to cease and desist from: (i) making, using and/or selling the patented technology or any product containing the patented technology in violation of the '830 Patent and/or the Lanham Act; (ii) making any further false and misleading statements, including but not limited to those set forth above, in connection with advertising, promoting and marketing BSF's Hilite films; and (iii) destroying any evidence relating to Plaintiff's claims, including but not limited to, any advertising and promotional materials;

- b. Actual damages in an amount to be determined at trial;
- c. Increased damages pursuant to 35 U.S.C. § 284 and/or treble damages pursuant to 15 U.S.C. § 1117 (a);
- d. Reasonable and necessary attorneys' fees incurred by Plaintiff in connection with this action pursuant to 35 U.S.C. § 285 and/or 15 U.S.C. § 1117(a);
- e. Prejudgment and post-judgment interest at the highest rate(s) allowed by law;
- f. Costs of court; and
- g. Such other and further relief which this Court may deem just and proper.

Respectfully submitted,

**BICKEL & BREWER**

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ATTORNEYS FOR  
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DEFENDANT TIME DOMAIN  
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**CERTIFICATE OF SERVICE**

I hereby certify that on January 15, 2009, I served a true and correct copy of this First Amended Complaint and Jury Demand to all counsel of record listed below by electronic means:

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