

### COUMARIN 480

**Synonym:** 2,3,6,7-tetrahydro-9-methyl-1H,5H,11H-[1]benzopyrano-[6,7,8-ij]quinolizin-11-one; Coumarin 102

**Catalog No.:** 04800

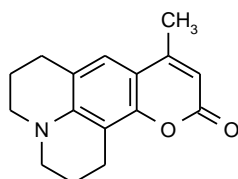
**CAS No.:** 41267-76-9

**MW:** 255.32

**Chemical Formula:** C<sub>16</sub>H<sub>17</sub>NO<sub>2</sub>

**Appearance:** Pale yellow crystalline powder

**Structure:**

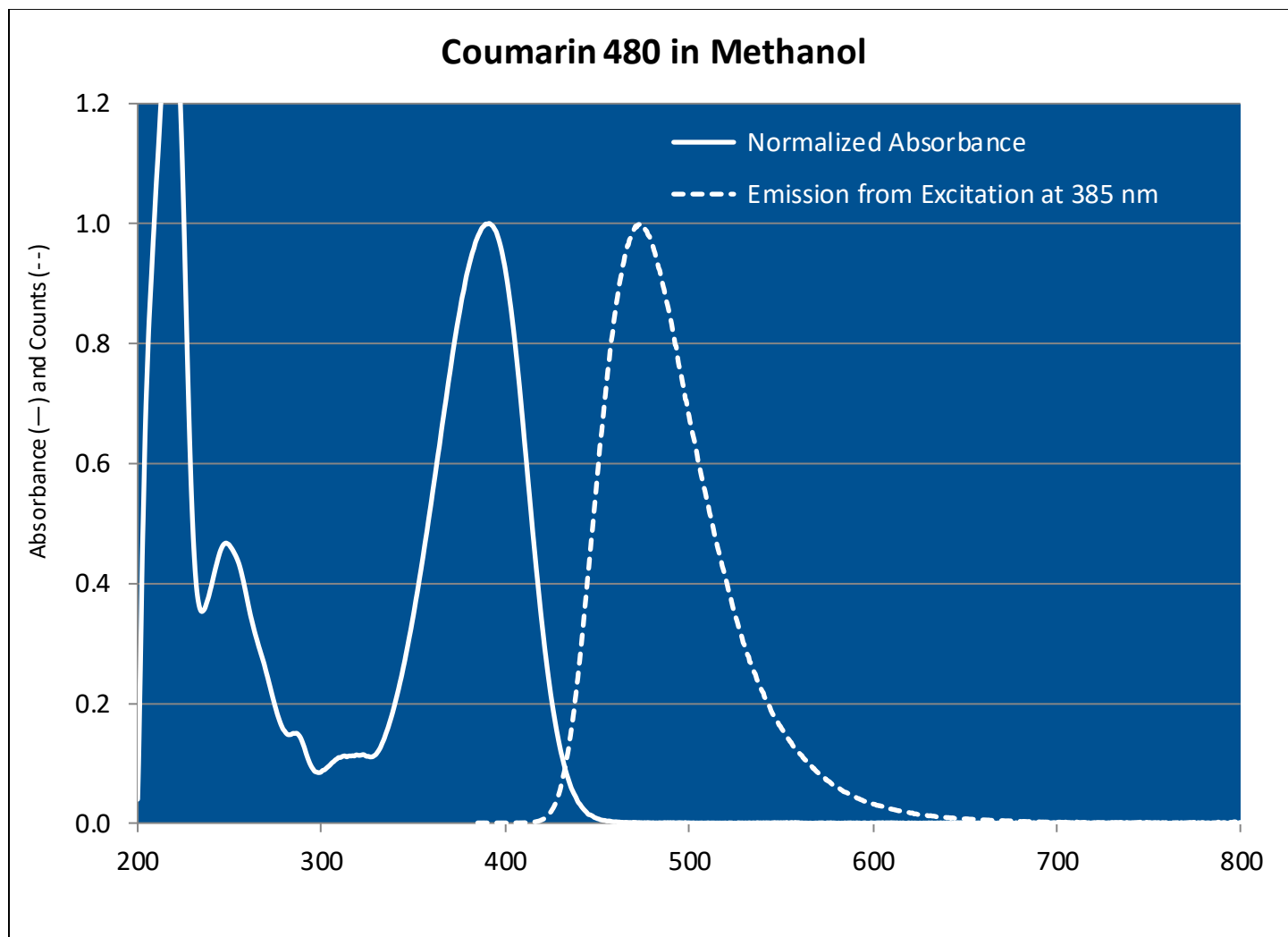


Lasing Wavelength Max. (nm)	Range (nm)	Pump Source (nm)	Solvent	Concentration (molar)	Abs λ-max	FI λ-max
474	456-503	FL <sup>3</sup>	Ethanol	1.5 x 10 <sup>-4</sup>	390 <sup>e</sup>	466 <sup>e</sup>
475	452-519	FL <sup>61</sup>	Methanol	2 x 10 <sup>-4</sup>		407 <sup>c82</sup>
478	457-520	FL <sup>3</sup>	Methanol + LO	1.5 x 10 <sup>-4</sup>		458 <sup>n</sup>
480	456-531	FL <sup>11</sup>	Methanol	2 x 10 <sup>-4</sup>		473 <sup>e</sup>
482	456-530	FL <sup>69</sup>	Methanol	6 x 10 <sup>-5</sup>		
	475-490	FL <sup>64</sup>	Methanol	2.2 x 10 <sup>-4</sup>		
491		FL <sup>12</sup>	MeOH/H <sub>2</sub> O, 1/1	2.3 x 10 <sup>-4</sup>		
477	458-528	XeCl(308) <sup>204</sup>	Methanol	8 x 10 <sup>-3</sup> (osc), 6.5 x 10 <sup>-3</sup> (amp)		
474	456-503	XeCl(308) <sup>118</sup>	Ethanol	5.9 x 10 <sup>-3</sup> (osc)		
475		XeCl(308) <sup>112</sup>	Ethanol	4 x 10 <sup>-3</sup>		
476	461-506	XeCl(308) <sup>110</sup>	Methanol	3 x 10 <sup>-3</sup>		
478	457-517	XeCl(308) <sup>114</sup>	Methanol	7.8 x 10 <sup>-3</sup>		
479	461-513	XeCl(308) <sup>110</sup>	Methanol	4 x 10 <sup>-3</sup>		
473	452-500	Nd:YAG(355) <sup>239</sup>	Ethanol	1.6 x 10 <sup>-3</sup>		
475	459-508	Nd:YAG(355) <sup>53</sup>	Methanol	4.3 x 10 <sup>-3</sup> (osc), 1.8 x 10 <sup>-3</sup> (amp)		
477		Nd:YAG(355) <sup>54</sup>	Methanol	5 x 10 <sup>-4</sup>		
477	458-507	Nd:YAG(355) <sup>110</sup>	Methanol	8 x 10 <sup>-4</sup>		
478	460-500	Nd:YAG(355) <sup>57</sup>	Methanol	1.6 x 10 <sup>-3</sup> (osc), 3.1 x 10 <sup>-4</sup> (amp)		
485		Nd:YAG(355) <sup>59</sup>	Methanol	7 x 10 <sup>-4</sup>		
470	450-516	N <sub>2</sub> (337) <sup>114</sup>	Ethanol	5.5 x 10 <sup>-3</sup>		
470	453-495	N <sub>2</sub> (337) <sup>5</sup>	Ethanol		1 x 10 <sup>-2</sup>	
470	460-525	N <sub>2</sub> (337) <sup>183</sup>	Methanol	35mg/20ml		
480	454-523	N <sub>2</sub> (337) <sup>90</sup>	Ethanol	6.9 x 10 <sup>-3</sup>		
470	451-514	Ar(uv,bb) <sup>68</sup>	EG/BzOH,9/1	3.2 x 10 <sup>-3</sup> +S420		
470	454-510	Ar(uv,SF) <sup>68</sup>	EG/BzOH,9/1	3.2 x 10 <sup>-3</sup> +S420		
477	460-518	Ar(Violet) <sup>123</sup>	EG/BzOH,5/1			

480	465-500	Ar(351/364) <sup>13</sup>	20% aq.DPA	$2 \times 10^{-3}$
483	463-515	Ar(350-386UV, C699 RDL) <sup>206</sup>	EG/BzOH,7/3	$7.85 \times 10^{-3}$
485	462-524	Ar(364-386) <sup>187</sup>	EG/BzOH,9/1	$7.8 \times 10^{-3}$
490	445-506	Ar(cw) <sup>14</sup>	EG	EG
473	458-520	Kr(406-415) <sup>206</sup>	EG/BzOH,7/2	$4.36 \times 10^{-3}$ *
490	460-516	Kr(violet),Ar(uv) <sup>68</sup>	BzOH/EG	80% pump absorption
495	470-515	Kr(400-420) <sup>17</sup>	EG	
	453-510	N <sub>2</sub> -He(428) <sup>49</sup>	Ethanol	$1 \times 10^{-2}$

\* This represents a maximum value. Concentration should be adjusted to 80-85% absorption of the pump light.

LO=Ammonyx LO, MeOH/H<sub>2</sub>O=methanol/water, EG=ethylene glycol, BzOH=benzyl alcohol, e=ethanol, c=cyclohexane, n=acetonitrile



The information presented above is believed to be accurate but is not a specification. The customer is fully responsible for determining the suitability of this product for use in their application. Exciton, Inc. does not represent that the information is sufficient or complete for any specific application.

### Quantum Yields and Lifetimes

Absorbance (nm)	Emission (nm)	Quantum Yield (max = 1.0)	Solvent	Lifetime (ns)	References, Notes	
361	407	1.05	Cyclohexane	2.6	C-2a	
	407	1.05	Cyclohexane		C-4	
	432	0.7	Ethyl Acetate		C-4	
380	450	0.91	Acetonitrile	3.3	C-2a	tf (in DMF solvent)
	458	0.59	Acetonitrile		C-4	
387	473	0.95	Ethanol	4.5	C-2a	
	473	0.74	Ethanol		C-4	
389		0.93	Ethanol		C-5	
389	446	0.58	Ethanol		C-7c	
389	446	0.99	Ethanol		C-7a	
389	446	1.04	Ethanol		C-7b	
	430-530	0.764	Ethanol		S-4	
396	477	1.02	50% ethanol	---	C-2a	
		0.77	Ethanol/Water (50:50)		C-4	
396	489	0.66	Water	5.9	C-2a	
390		0.87	Methanol		C-5	
389		0.79	DMF		C-5	

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- C-7b. The Effect of Oxygen on the Fluorescence Quantum Yields of Some Coumarin Dyes in Ethanol, R.F. Kubin and A.N. Fletcher, Chem. Phys. Lett. 99(1), 49 (1983), [https://doi.org/10.1016/0009-2614\(83\)80268-1](https://doi.org/10.1016/0009-2614(83)80268-1) **Note B:** Under argon
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